



Application for Works Approval

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

Works Approval Number W6720/2022/1

Applicant Mt Edwards Lithium Pty Ltd

ACN 56 613 827 311

File number DER2022/000324

Premises Mount Edwards Project
M15/99 and M15/101
Shire of Coolgardie

As defined by the premises maps attached to the issued works approval

Date of report 2 November 2022

Decision Works approval granted

**A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES**

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 time limited operation of the premises. As a result of this assessment, works approval W6720/2022/1 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 14 July 2022, 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 and time limited operation relating to Category 6 – Mine Dewatering at the premises. The premises is approximately 5km northeast of Widgiemooltha Town.

The proposed activity involves construction of a 4 km long, 150 mm diameter High Density Polyethylene (HDPE) pipeline to allow transfer of water from Armstrong pit to 132N open pit (Figure 1). About 160,000 m³ of saline water has accumulated in Armstrong pit since the previous mining operations were ceased in June 2008. This is required to be removed to allow exploration drilling to investigate the feasibility of recommencement of mining.

The pipeline is to be located on the existing access road between Armstrong and 132N pits. Pumping infrastructure is to be located at Armstrong pit area (diesel powered pontoon pump with associated stationary diesel generator). Diesel will be stored in a 4,000 litre self-bunded tank located on pit ramp. Water will be discharged onto hard rock wall of 132N pit.

Dewatering of accumulated water in Armstrong pit is anticipated to be completed in less than 6 months.

The premises relates to the category and assessed production / design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6720/2022/1. 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 W6720/2022/1.

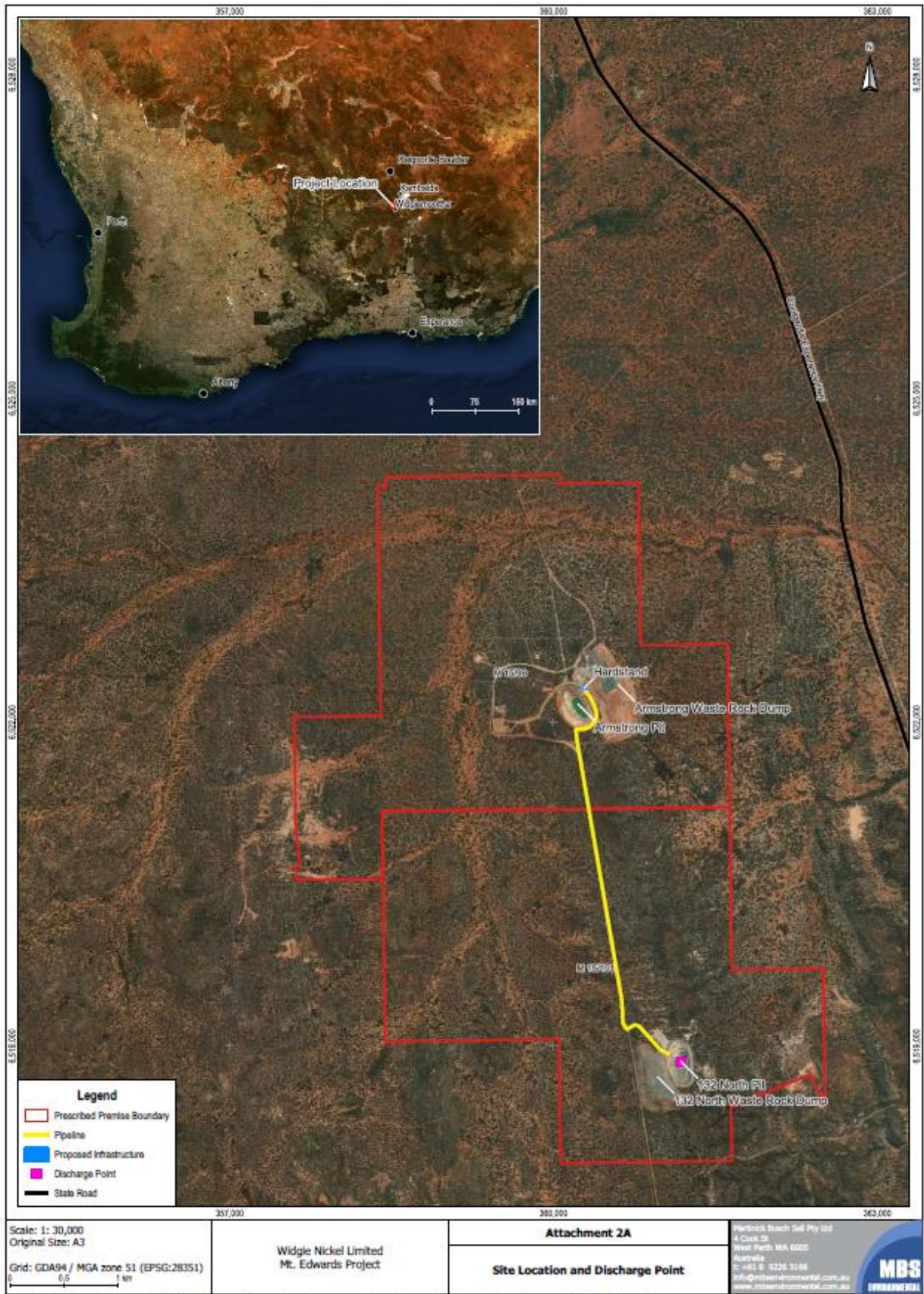


Figure 1 – Prescribed Premises Boundary, dewatering location, and discharge point

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 and time limited 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	Construction of hardstand in Armstrong pit area and placement of pipeline for discharge of dewatered water into 132N pit.	Air / windborne pathway	<ul style="list-style-type: none"> Pipeline placed in an existing disturbed area. Dust suppression with a water cart and or sprinklers will be used where necessary to minimise emissions during construction. It is noted that little ground disturbance will be required for installation of the pipeline.
Operation			
Contaminated water (saline/hypersaline and with high concentration of metals and metalloids)	Leaks and pipeline failure	Direct discharge to land	<ul style="list-style-type: none"> The pipeline will be placed on the existing track which will in effect serve as a containment bund. The existing 0.5 m windrows on each side of the road along with the scour pits will provide sufficient containment for the 150 mm diameter pipe. Scour pits will be installed at low points along the road to allow collection of water. Pipelines including bunds and scour pits will be visually inspected once per 12-hour shift Pipeline fitted with leak detection instrumentation. Flow meters on pipe to monitor volumes of water discharged. Discharge into 132 N pit will be located in fresh rock to prevent

Emission	Sources	Potential pathways	Proposed controls
			scouring of pit walls.
	Seepage from pit (base and walls)	Seepage into Groundwater	<ul style="list-style-type: none"> In accordance with hydrogeological information provided to support the application, permeability of the rock mass at 132N is low, with an estimated average bulk permeability of about 0.001 m/day. Pit is expected to act as a groundwater sink. The quality of the groundwater in 132N area is hypersaline and of reduced environmental value.
	Overtopping of 132N pit	Direct discharge to land	<ul style="list-style-type: none"> Abandonment bunds have been constructed around the 132 North pit void to prevent access at closure and prevent the ingress of external floodwater into the bunded areas. Water balance provided as part of application indicates a pit storage remaining after discharge of 160,000 m³ of water from Armstrong pit into 132N pit of 1,467,413 m³. Once dewatering is completed (estimated to occur in less than 6 months) water levels within the pit are expected to be at 57 m below ground surface. Monitoring parameters during time limited operations will include: volumetric flow rate, pH and Total Dissolved Solids and these will be monitored monthly other than flow rates which will be measured continuously with readings taken monthly. Monthly observations of freeboard will be made and photographs taken from a fixed point to allow comparison of change in levels.
Hydrocarbons	Hydrocarbon leaks and spills from pump infrastructure resulting in contamination of local soils	Direct discharge to land	<ul style="list-style-type: none"> Diesel to be stored in 4,000 litre self-bunded tank located on pit ramp

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 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
Closest residential receptor	<p>None within 5km of involved pits.</p> <p>The nearest town of Widgiemooltha is approximately 5 km southeast of the Premises.</p> <p>Tenements located on UCL, pastoral infrastructure or homesteads are not shown in Tengraph or Geocortex near premises.</p> <p>Receptor screened out from risk assessment.</p>
Environmental receptors	Distance from prescribed activity
<p>Flora – (P1)</p> <p><i>Philothea apiculata</i> was recorded within the premises boundary.</p>	<p>None of the P1 locations are within the proposed pipeline route but can be seen within 300m of proposed discharge location.</p> <p>The Project will not involve any additional land clearing.</p>
<p>Fauna</p> <p>Three conservation significant species were considered as possibly utilising the survey area:</p> <ul style="list-style-type: none"> • Mallee fowl (<i>Leipoa ocellata</i>). • Grey Falcon (<i>Falco hypoleucos</i>). • Peregrine Falcon (<i>Falco peregrinus</i>). 	Possibly within the premises
<p>Underlying groundwater</p> <p>Groundwater quality, as is characteristic for the eastern Goldfields, generally varies from saline to hypersaline.</p> <p>Groundwater salinities increase towards the playa lakes to in excess of 30,000 mg/L Total Dissolved Solids (TDS) and in some cases in excess of 100,000 mg/L TDS in confined palaeochannel aquifers. Brackish water supplies (1,000 – 3,000 mg/L TDS) do exist but are limited to areas where recharge is enhanced due to runoff associated with bedrock outcrops and or the occurrence of perched aquifers.</p> <p>The standing water level at bore 132-MB1, a permanent water quality monitoring bore, was 33.1 metres below ground level (mbgl). Bore 132-MB1 is located less than 300 m north of the 132N</p>	Underlying premises

<p>pit. Groundwater within the discharge location is hypersaline.</p> <p>Because of the flat topography and generally sporadic nature of recharge, the watertable is expected to also be flat with a low regional gradient towards the playa lake systems.</p> <p>There are no known potential uses for the water in the fractured rock aquifer other than future mining as the water is too saline for livestock to drink or for irrigation use.</p>	
<p>Surface Water</p> <p>There is a large watercourse west of the Armstrong and 132 North mine areas with a catchment area of 61.5 km².</p>	<p>Watercourse is located approximately 1 km west of pipeline route and discharge point. Ephemeral drainage is seen within <200 m of proposed pipeline route.</p>

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 W6720/2022/1 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. if continued discharge into 132N pit is required.

Table 3: Risk assessment of potential emissions and discharges from the premises during construction and time limited 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								
Construction of hardstand area and placement of pipeline for discharge of dewatered water into 132N pit.	Dust	Air / windborne pathway causing impacts to health and amenity	Surrounding Vegetation Residences >5km from proposed activities	Refer to Section 3.1	C = Minor L = rare Low Risk	Y	N/A	N/A
Operation (including time-limited-operations operations)								
Pumping and Discharge of dewatered water from Armstrong pit into 132N pit	Contaminated water (saline/hypersaline and with high concentration of metals and metalloids)	Overtopping of 132N pit resulting in discharge of contaminated water to land	Local soils, surface water and vegetation	Refer to Section 3.1	C = Moderate L = Rare Medium Risk	Y	Conditions 6, 7, 8, 9 Reporting conditions 2, 3, 10 - 14	N/A
		Leaks and pipeline failure resulting in discharge of contaminated water to land	Local soils, surface water and vegetation	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	Y	Conditions 1 – 5 Reporting conditions 2, 3, 10 - 14	N/A
		Seepage from pit (base and walls) resulting in contamination of local aquifer	Groundwater	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Conditions 6, 7, 8, 9 Reporting conditions 2, 3, 10 - 14	N/A
	Hydrocarbon	Hydrocarbons leaks and spills from pump infrastructure resulting in contamination of local soils	Local soils	Refer to Section 3.1	C = Slightly L = Possible Low Risk	Y	Condition 7 Reporting conditions 2, 3, 10 - 14	N/A

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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 12 September 2022	None received	N/A
Local Government Authority advised of proposal on	None received.	N.A.
Applicant was provided with draft documents on 25/10/2022	27/10/2022	See 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. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

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

Condition	Summary of applicant's comment	Department's response
1 – Table 1 – Row 1	<p>The HDPE pipeline will be located on an existing track established historically to allow light vehicle access between the 132N and Armstrong pits. The pipe volume at full capacity will contain about 74 m³ (based on 150 mm /1000/2)^2 x 3.14 x 4,200 m). The track sits slightly below ground level as a result of historical maintenance (grading) and has 0.5 m windrows either side. This, along with the four planned scour pits of 75 m³ capacity each (giving total capacity of 300 m³) will provide sufficient capture capacity for the proposed 0.15 m diameter pipeline. Given the relatively short-term nature of the pipeline requirements (circa 12 months) this is considered appropriate as it will prevent the need for additional land clearing while still achieving the environmental objective of containing saline and metalliferous rich water.</p> <p>Flow meters and a leak detection system with telemetry will be installed on the pipeline. The leak detection system will operate based on measurement of pressure at valves fitted at both ends of the pipeline. Drop in pressure will result in instant stop of pump activity.</p>	Table 1 updated to include proposed construction details.
1 – Table 1 – Row 2	<p>Four scour pits, each of about 75 m³ capacity, will be constructed along the road length to allow direction of spills to areas where it could be recovered for collection in the advent of pipe failure or leak. The location of scour pits is based on the corridor topography with pits planned to be located in natural low points. The indicative locations are shown in Attachment 1.</p> <p>Pipe inspections will be conducted once per 12-hour shift. This will supplement leak detection systems which will automatically notify via telemetry system of a leak.</p>	Table 1 updated to include proposed construction details. Figure 2 added.
3 (a)	The systems required are not considered technically difficult to construct or install. Certification should be able to be provided by a qualified environmental scientist and or qualified professional engineer.	Condition modified to add qualified environmental scientist.
Condition 7, Table 3	Widgie Nickel confirm that inspections will occur once per 12-hour shift.	Noted and condition requirement reworded.

Condition	Summary of applicant's comment	Department's response
	<p>This will include the pipeline, drains and scour pits.</p> <ul style="list-style-type: none"> The pontoon pump will not be located within a self-bunded tank, however the fuel supply for the pump will be a self-bunded tank. 	
<p>Condition 8, Table 3, Column 2 and 4</p>	<ul style="list-style-type: none"> Widgie Nickel confirm that monitoring parameters during time limited operations will be volumetric flow rate, pH and Total Dissolved Solids and these will be monitored monthly other than flow rates which will be measured continuously with readings taken monthly. Widgie Nickel request that both pH and TDS are allowed to be measured by in-field non-NATA accredited methods given the remoteness of the site. Measurement of standing water levels in the pit is challenging in terms of meters below crest level. Monthly observations will be made and photographs taken from a fixed point to allow comparison of change in levels. Water transfer would cease if water is within 1 m of the pit crest. Given the pit volume is much larger than the required storage volume, this is considered appropriate to the level of risk of overflow. 	<p>Relevant modifications to Table 4 of condition 8 made.</p> <p>DWER bring applicant's attention to freeboard requirements in condition 7.</p>

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY	
Application type	
Works approval	<input checked="" type="checkbox"/>
Date application received	14/07/2022
Applicant and Premises details	
Applicant name/s (full legal name/s)	Mt Edwards Lithium Pty Ltd
Premises name	Mount Edwards Project
Premises location	M15/101 – Expire in 2026 M15/99 – Expire in 2026 Mt Edwards Lithium Pty Ltd is the tenement holder Coordinates for premises boundaries have been provided and are in GDA1994.
Local Government Authority	Shire of Coolgardie
Application documents	
HPCM file reference number:	DER2022/000324
Key application documents (additional to application form):	<ul style="list-style-type: none"> • DWER Application Form. • Attachment 1 - ASIC statement and tenement ownership documentation. • Attachment 2 - Location and project figures. • Attachment 6A - Emissions • Attachment 7 - Siting information. • Attachment 10A - Application fee calculations.
Scope of application/assessment	
Summary of proposed activities or changes to existing operations.	<p>Mount Edwards Project/Widgie Nickel Project</p> <p>This application relates to construction of infrastructure to dewater an existing open pit mine and transfer water via a purpose-built pipeline to another pit.</p> <p>The proposed activity involves construction of a 4 km long, 150 mm diameter HDPE pipeline to allow transfer of water from Armstrong to 132N open pit. About 160,000 m³ of saline water has accumulated in Armstrong pit since the previous mining operations were ceased in June 2008. This is required to be removed to allow exploration drilling to investigate the feasibility of recommencement of mining.</p> <p>The pipeline is to be located on the existing access road between Armstrong and 132N pits. Pumping infrastructure is to be located at Armstrong pit area (diesel powered pontoon pump with associated stationary diesel generator). Diesel to be stored in 4,000 litre self-bunded tank located on pit ramp. Water to be discharged onto hard rock wall of 132N pit.</p> <p>Dewatering of accumulated water in Armstrong pit is anticipated to be completed in < 6 months.</p>

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 6 - Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore. 50 000 tonnes or more per year	160,000m ³ or 160,000 tonnes	N/A

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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining lease / tenement <input checked="" type="checkbox"/> Expiry: 2026
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	N/A as on mining tenure
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	GWL:048765

<p>Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Name: Yes Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Regional office: Goldfields</p>
<p>Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>N/A</p>
<p>Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i>, <i>Environmental Protection (Controlled Waste) Regulations 2004</i>, <i>State Agreement Act xxxx</i>)</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p><i>Mining Act 1978</i> <i>EP Act</i></p>
<p>Is the Premises within an Environmental Protection Policy (EPP) Area?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>N/A</p>
<p>Is the Premises subject to any EPP requirements?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>N/A</p>
<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Not shown in Geocortex.</p>