

# **Decision Report**

# **Application for Works Approval**

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

Works Approval Number W6648/2022/1

**Applicant** Karratha Gold Pty Ltd

**ACN** 618 512 253

File number DER2021/000680

Premises Purdys Reward

Exploration tenement E47/1745

As defined by the premises map and specified coordinates

attached to the issued works approval

**Date of report** 27/04/2022

**Decision** Works approval granted

# SUZY ROWORTH A/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 premises. As a result of this assessment, works approval W6648/2022/1 (the works approval) 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 <a href="https://dwer.wa.gov.au/regulatory-documents">https://dwer.wa.gov.au/regulatory-documents</a>.

### 2.2 Application summary and overview of premises

On 26 November 2021, 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 a mobile crushing and screening plant and ore sorter at the premises. The premises is approximately 40 km south-east of Karratha and located on mining tenement E47/1745 (see Figure 1).

The premises relates to category 70 and the assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in the works approval. 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 the works approval.

The Applicant proposes to conduct an ore sorting trial by mining and then crushing and screening approximately 59,000 tonnes of ore over a three year period. The Applicant has stated the annual throughput at the Premises will not exceed 50,000 tonnes per year. The department notes the throughput of the crushing and screening plant is limited by a Programme of Works approved by the Department of Mines, Industry Regulation and Safety which allows for 58,854 tonnes of ore to be processed over three years. The capacity of the crushing and screening plant is 1,000,000 tonnes per annum.

Mined ore will be trucked to a processing area where it will be crushed and screened by mobile plant and then sorted using Steinert's ore sorting technology (KSS Sorter Unit). The plant process involves the use of a mobile jaw crusher which crushes the ore material to less than 90 mm in size. The crushed material is then fed directly into a mobile screening unit for separation into size classes. Each stockpiled size fraction is then processed through a KSS Sorter Unit. The sorted product is then fed into mobile bin units, with waste material being used for backfill or retained for rehabilitation. The crushing and screening plant is proposed to operate on dayshift only, 7 days per weeks.

Less than one hectare of vegetation is proposed to be cleared to allow for installation of the crushing infrastructure, and is exempt under Regulation 5, item 25 of the clearing regulations, which allows clearing for prospecting or exploration activities approved under the *Mining Act* 1978.

Stormwater diversion infrastructure (bunds and channels) will be installed around the northern and southern perimeters of the processing area (see Figure 2). This infrastructure will intercept and divert clean surface water around the processing area into the natural creek lines to the east and west of the Premises. Stormwater collected within the processing plant area will be

directed to sediment basin/ponds to allow sediment to settle out and to collect any potential spilt hydrocarbons prior to discharge to the natural creek system. The Applicant has stated the contained water will be sampled prior to discharge.

The Applicant has stated the crushing and screening plant and ore sorter will require environmental commissioning prior to operations commencing.

The Applicant will apply for a Registration (category 70) to operate the Premises following the completion of the works. The Premises will operate under Time Limited Operation conditions in the works approval while awaiting the issuing of a category 70 Registration.

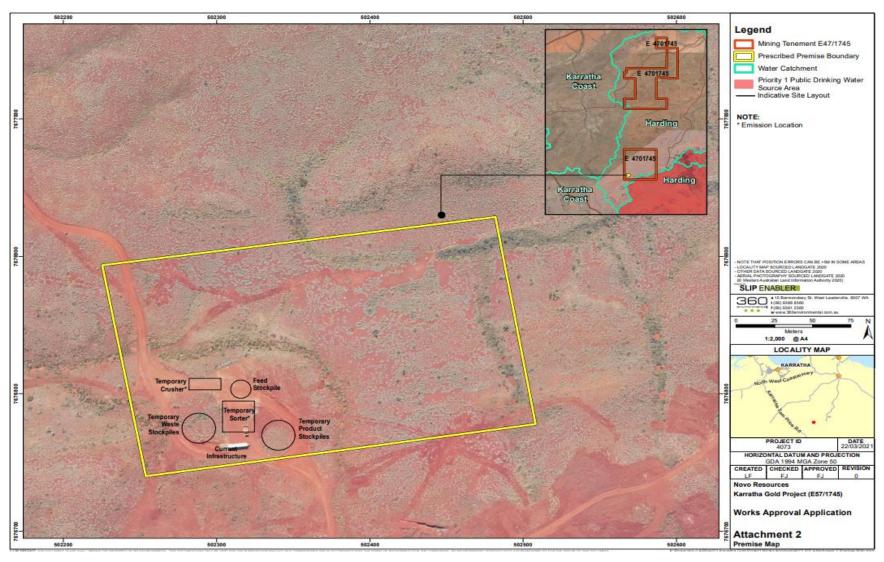


Figure 1: Premises location and infrastructure layout

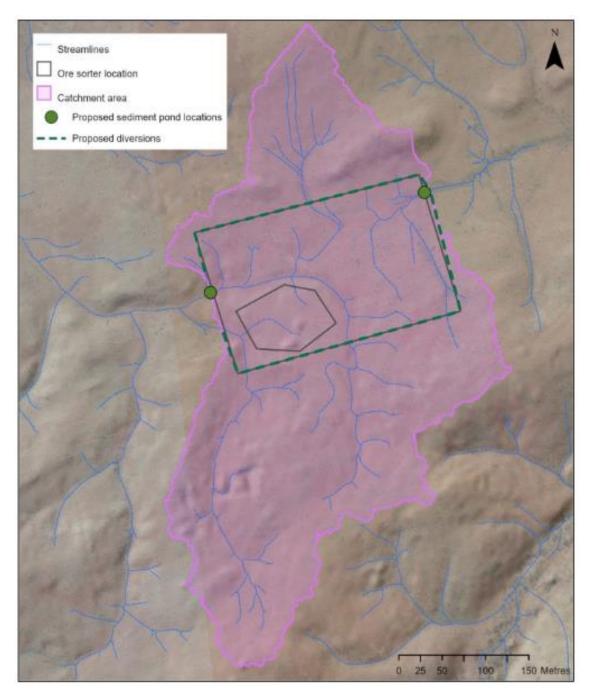


Figure 2: Surface Water Management

#### 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 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 activities including grounding disturbance. Vehicle movement.	Air / windborne pathway	Use of water carts as required to wet down roads and cleared areas to minimise dust generation.				
Noise	Construction activities. Vehicle movement.	Air / windborne pathway	All onsite mobile plant and vehicles fitted with mufflers.  Construction will only occur during daylight hours.				
Accidental hydrocarbon spills	Refueling of mobile plant and vehicles.  Spills and leaks from mobile plant, storage and vehicles.	Direct discharge to surrounding soils. Seepage to groundwater	Regular inspections of all equipment.  Planned preventative maintenance.  Use of spill kits at temporary refueling areas.  Self-bunded double wrapped tanks used for large storage (>1,000 litres).  Minor hydrocarbon storage containers (<1,000 litres) to be stored within designated areas using temporary portable bunds, lined bunded areas or spill trays/self-bunded pallets.				
Operation	Operation						
Dust	Operation of crushing and screening plant and ore sorter.  Vehicle and mobile	Air / windborne pathway	Use of water carts as required to wet down roads, cleared areas and stockpiles to minimise dust generation.  Use of water sprayers throughout the plant				

Emission	Sources	Potential pathways	Proposed controls
	plant movement.		and on transfer points and chutes.
			Covered transfer chutes.
			Water added to the ore during processing to achieve a required dust extinction moisture content.
			Regular inspections of all dust control equipment (sprinklers and chutes) and crushing/screening plant, with maintenance undertaken as required.
Noise	Operation of	Air /	All onsite vehicles fitted with muffler.
	crushing and screening plant and ore sorter.	windborne pathway	Crushing and screening plant and ore sorter only operated during day light hours.
Contaminated	Spills and leaks	Overland	Planned preventative maintenance.
stormwater (hydrocarbon spills/sediment)	from crushing and screening plant and ore sorter.	runoff	Stormwater diversion around the crushing and screening hard stand areas
,	Increase in stormwater sediment from hardstand and stockpiles.		Stormwater collected within the processing plant area will be directed to sumps/basins to allow sediment removal and collection of any hydrocarbons prior to discharge. Any contained water will be sampled prior to discharge.
	Refueling and servicing of vehicles		Refueling of vehicles to occur on a concrete bunded area with collection grates where
	Storage of hydrocarbons.		practicable.
			Use of spill kits at refueling areas and within workshops.
			Self-bunded double wrapped tanks used for large storage (>1,000 litres).
			Minor hydrocarbon storage containers (<1,000 litres) to be stored within designated areas using temporary portable bunds, lined bunded areas or spill trays/self-bunded pallets.

#### 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 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 (Guideline: Environmental Siting (DWER 2020)).

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

Human receptors	Distance from prescribed activity
City of Karratha	Approximately 40 km  Screened out as separation distance is considered too great
Environmental receptors	Distance from prescribed activity
Native Vegetation – Priority Flora	Two priority flora taxa were recorded in the survey area at the Premises, Euphorbia inappendiculate var. inappendiculata P2 and Terminalia supranitifolia P3. Both of these taxa are considered to have extensive areas of potential habitat in the vicinity (Woodgis, 2019).
PDWSA – Harding Dam Catchment Area (P1)	1.14km southeast of the premises.
	Screened out as separation distance is considered too great.
Surface Water	The premises is within the Proclaimed Pilbara Surface Water Area. There are natural creek lines entering the perimeter of the ore sorter location on the northern and southern sides.  Millers Creek, a minor non-perennial watercourse, is located 360 m from the premises boundary in a southeast direction. Miller Creek is a tributary to the Harding River, flowing south towards the Millstream National Park.
Ephemeral clear creek pool	650m east of the proposed premises. The wetland is approximately 130m long and 20-30 m wide and occurs in the Harding River catchment on a second-order tributary (Strahler 1952) of Miller Creek, which in turn feeds into the Harding River to the east-northeast.
	Terrestrial Ecosystems (2017) described the wetland as a "permanent or near permanent water body surrounded by riparian vegetation". Furthermore, Terrestrial Ecosystems (2017) noted the presence of fish, waterbirds (cormorants and herons) and the potential limportance of the wetland for terrestrial species such as Pilbara olive python.
	Some plant species recorded around the wetland are indicative of prolonged soil moisture, however the site does not support a groundwater-dependent overstorey or species associated with springs or spring-fed creeks (Lyons 2015; Woodgis 2019).

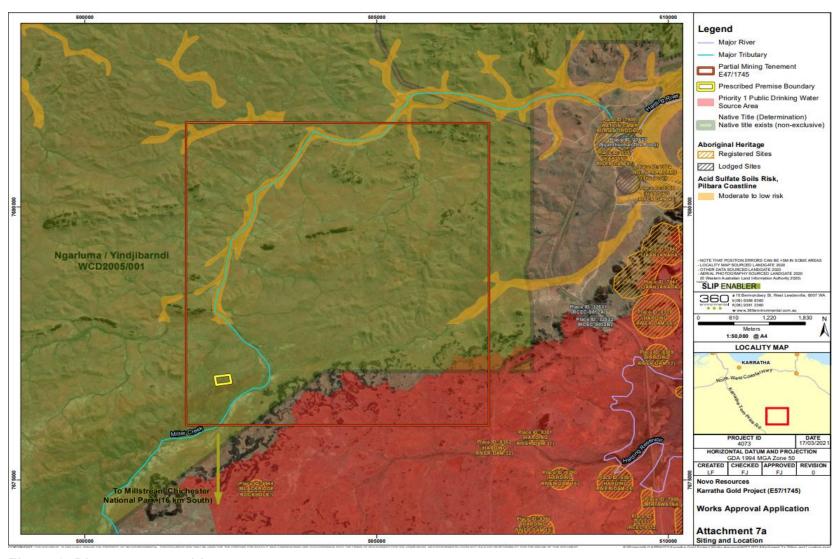


Figure 3: Distance to sensitive receptors

### 3.2 Risk ratings

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

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

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

Works approval W6648/2022/1 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).

Table 3: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and time limited operations

Risk events				Risk rating <sup>1</sup>	Applicant		Justification for	
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	controls sufficient?	Conditions <sup>2</sup> of works approval	additional regulatory controls
Construction								
Installation of crushing and screening plant, ore sorter and associated infrastructure.  Vehicle movements.  Construction of stormwater diversions, drains and sediment control areas (settling basins).	Dust	Air / windborne pathway Smothering of vegetation causing impacts to vegetation health	Priority vegetation	Refer to Section 3.1	C = Slight Onsite impacts minimal L = Unlikely The risk event will probably not occur in most circumstances Low Risk	Y	Condition 1, <u>11, 12</u> and <u>13</u>	Construction and installation of infrastructure to be generally located as identified in the submitted application.  Standard administration and reporting requirements.
Commissioning								
Commissioning of the Processing Plant (crushing and screening plant and ore sorter)	Dust	Air / windborne pathway  Smothering of vegetation causing impacts to vegetation health	Priority vegetation	Refer to Section 3.1	C = Slight Onsite impacts minimal L = Unlikely The risk event will probably not occur in most circumstances Low Risk	Y	Condition 1, <u>2, 3, 4, 5, 6, 7, 11, 12</u> and <u>13</u>	Applicant controls conditioned for the installation of dust control mechanisms at the crushing and screening plant and ore sorter.  Standard administration and reporting requirements.
	Hydrocarbon contaminated and sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Minor non- perennial watercourse Priority vegetation	Refer to Section 3.1	C = Minor  Low level onsite impacts with minimal offsite local scale impacts	Y	Condition 1, <u>2, 3, 4, 5, 6, 7, 11, 12</u> and <u>13</u>	Applicant controls conditioned for the installation of infrastructure to manage clean and contaminated stormwater at the crushing and

Risk events				Risk rating <sup>1</sup>				
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of works approval	Justification for additional regulatory controls
Time-limited-operations					L = Possible The risk event could occur at some time Medium Risk			screening plant and ore sorter. Standard administration and reporting requirements.
Time Limited Operations of the Processing Plant (crushing and screening plant and ore sorter)  Stockpiling, loading and unloading of material	Dust	Air / windborne pathway causing impacts to vegetation health	Priority vegetation	Refer to Section 3.1	C = Slight  Onsite impacts minimal  L = Unlikely  The risk event will probably not occur in most circumstances  Low Risk	Y	Condition 1, <u>2</u> , <u>3</u> , <u>8</u> , <u>9</u> , <u>10</u> , <u>11, 12</u> and <u>13</u>	Applicant controls conditioned for the installation of dust control mechanisms at the crushing and screening plant and ore sorter.  Location of product and waste rock stockpiles to be located as identified in the submitted application.  Standard administration and reporting requirements.
Vehicle movements	Hydrocarbon contaminated and sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Minor non- perennial watercourse Priority vegetation	Refer to Section 3.1	C = Minor  Low level onsite impacts with minimal offsite local scale impacts  L = Possible  The risk event could occur at some time	Y	Condition 1, <u>2, 3, 8, 9, 10, 11, 12</u> and <u>13</u>	Applicant controls conditioned for the installation of infrastructure to manage clean and contaminated stormwater at the crushing and screening plant and ore sorter.  Location of product and waste rock

Risk events		Risk rating <sup>1</sup>	Amuliaant		Justification for			
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	approval	additional regulatory controls
					Medium Risk			stockpiles to be located as identified in the submitted application.
								Standard administration and reporting requirements.

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 16 February 2022	None received	N/A
Local Government Authority advised of proposal on 16 February 2022	The City of Karratha replied on 17 February 2022 and stated should the screening and crushing activities be located within the boundaries of a granted mining tenement then under the City's Local Planning Scheme No.8 this will be exempt from requiring development approval. The City has no objection to the proposal.	Noted
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal 16 February 2022.	Email received from Danielle Risbey on 21 March 2022 advising DMIRS approved a Programme of Works for bulk sampling and an ore sorting trial 4 March 2021 and everything looked in order. They had no further comments.	Noted
Ngarluma Aboriginal Corporation advised of proposal on 16 February 2022	No comments received.	N/A
Applicant was provided with draft documents on 30 March 2022	Applicant responded on 27 April 2022 stating they had no comments.	N/A

## 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. 360 Environmental, Karratha Gold Project, Works Approval Application Supporting

Document 3B, prepared for Novo Resources, November 2021

5. Jones, F, Email to Department of Water and Environmental Regulation, *Application Notification – Application for a Works Approval – Request for Further Information*, (January 2022).

# **Appendix 1: Application validation summary**

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)							
Application type							
Works approval	$\boxtimes$						
		Relevant works approval number:			None		
		Has the works approve with?	al been complied	Yes	s □ No		
Licence		Has time limited opera works approval demon acceptable operations	strated	Yes	s □ No	□ N/A □	
		Environmental Complia Critical Containment In Report submitted?		Yes	s □ No		
		Date report received:					
Renewal		Current licence number:					
Amendment to works approval		Current works approval number:					
Amondment to license		Current licence number:					
Amendment to licence		Relevant works approval number:			N/A		
Registration		Current works approval number:			None		
Date application received		25 November 2021					
Applicant and premises details							
Applicant name/s (full legal name/s	)	Karratha Gold Pty Ltd (ACN 618 512 253) (a wholly owned subsidiary of Novo Resources)					
Premises name		Purdys Reward					
Premises location		Part of exploration tenement E47/1745. Shapefile of premises boundary provided with application.					
Local Government Authority		City of Karratha					
Application documents							
HPCM file reference number:		DER2021/000680					
Key application documents (additional application form):	Works approval application supporting document attachment 3B which includes:  • Attachment 1A Proof of Occupier Status • Attachment 1B ASIC Company Extract • Attachment 2 Premises Map • Attachment 3A Environmental Commissioning Plan • Attachment 5 Other Approvals and Consultation • Attachment 6A Emissions and Discharges • Attachment 7 Siting and Location • Attachment 9 Proposed Fee Calculation						

#### SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)

#### Scope of application/assessment

Summary of proposed activities or

changes to existing operations.

#### Works approval

The Project will involve the construction of a crushing and screening plant as well as a downstream sediment control and installation of an ore sorter within part of exploration tenement E47/1745. The prescribed premises is proposed to be approximately 4ha. Mobilisation and construction of the plant is anticipated to commence in April 2022, following which, validation and commissioning will be undertaken in accordance with plant supplier specifications in May 2022, ahead of operational commencement in June 2022.

A conceptual surface water management strategy has been proposed including the diversion of clean runoff from upstream of the area through the use of channels / bunds, and the collection and management of potentially impacted water through sediment ponds

The ore will be trucked to a processing area where it will be crushed, screened and sorted using Steinert's ore sorting technology. The plant is a KSS Sorter Unit. The plant process involves the mobile jaw crushing the material to <90 mm. The crushed material is then fed directly into a mobile screening unit for separation into size classes. Each stockpiled size fraction is then processed through the KSS Sorter Unit. The sorted product is fed into mobile bin units, with waste material being used for backfill or retained for rehabilitation.

Less than one hectare of vegetation is proposed to be cleared to allow for installation of the crushing infrastructure, and is exempt under Regulation 5, item 25 of the clearing regulations, which allows clearing for prospecting or exploration activities approved under the Mining Act 1978.

The crushing and screening plant is proposed to operate on dayshift only, 7 days per weeks with a design capacity of 1 Mtpa, note that actual capacity will be limited to less than 50,000 t per annum by the Programme of Works process approved by DMIRS (which will approve a maximum of 58,854 t over three years).

The crushing and screening plant will require environmental commissioning prior to operations. The trial is anticipated to process up to 59,000 tonnes per annum of gold bearing material over one to three years.

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 70: Crushing and screening	more than 5000 but less than 50 000 tonnes per year	N/A

annum by the Prog
(which will approve

The crushing and
commissioning pricess up to 59.00

## SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)

#### Legislative context and other approvals

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 Ø	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 Ø	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes □ No Ø	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes Ø No □	Certificate of title ☐  General lease ☐ Expiry:  Mining lease / tenement ☒ Expiry:  E47/1745 – 15 May 2022  Other evidence ☐ Expiry:
Has the applicant obtained all relevant planning approvals?	Yes □ No □ N/A Ø	Approval: Expiry date: If N/A explain why? Granted mining tenements under the City's Local Planning Scheme No.8 are exempt from requiring development approval.
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes □ No Ø	CPS No: N/A – exemption applies Regulation 5, Item 25 Clearing under the Mining Act 1978. "Clearing that is the result of carrying out prospecting or exploration under an authority granted under the Mining Act 1978."
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes □ No Ø	Application reference No: N/A Licence/permit No:
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ⊠ No □	Application reference No: Licence/permit No: GWL20119

SECTION 1: APPLICATION SUMMARY (as	s updated from validation	checklist)
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes □ No Ø	Name: Pilbara Surface Water Area Type: Proclaimed 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 Ø	Name: N/A  Priority: P1 / P2 / P3 / N/A  Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)?  Yes □ No □ N/A □
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 □	EP Act 1986 EP Regulations 1987 Mining Act 1978 Aboriginal Heritage Act 2018 Native Title Act 1993 WA Cultural Heritage Bill 2021 Rights in Water and Irrigation Act 1914
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes □ No Ø	
Is the Premises subject to any EPP requirements?	Yes □ No Ø	
Is the Premises a known or suspected contaminated site under the Contaminated Sites Act 2003?	Yes □ No Ø	Classification: N/A  Date of classification: N/A