



## Application for Works Approval

### Division 3, Part V *Environmental Protection Act 1986*

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**Works Approval Number** W6261/2019/1

**Applicant** Spinifex Crushing and Screening Services Pty Ltd

**ACN** 135 324 551

**File Number** DER2019/000333

**Premises** Mt Regal Mine  
M47/1418  
M47/1484  
MAITLAND WA 6714  
As defined by the coordinates in Schedule 1 of the  
Works Approval

**Date of Report** 19 September 2019

## 1. Definitions

In this Decision Report, the terms in the Table below have the meanings defined.

**Table 1. Definitions**

Term	Definition
ACN	Australian Company Number
AER	Annual Environment Report
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation  As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the <i>Public Sector Management Act 1994</i> and is responsible for the administration of the <i>Environmental Protection Act 1986</i> along with other legislation.
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
Minister	the Minister responsible for the EP Act and associated regulations
mtpa	million tonnes per annum
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>

## 2. Overview of premises

### 1.1 Classification of premises

**Table 2. Classification of premise**

Classification of Premises	Description	Approved Premises production or design capacity or throughput
Category 12	Screening etc. of material: premises (other than premises within category 5 or 8) on which material extracted from aid the ground is screened, washed, crushed, ground, milled, sized or separated.	500,000 tpa

### 1.2 Description of proposed activity

Spinifex Crushing and Screening Services Pty Ltd (the Applicant) lodged a Works Approval application on 4 June 2019, to install and operate a mobile crushing and screening plant within Mining Leases M47/1418 and M47/1484 (Mt Regal Mine), Karratha, Western Australia.

The tenement holder of Mining Leases M47/1418 and M47/1484 is Archipelago Nominees Pty Ltd, who have given written consent for the Applicant to undertake the proposed works on these leases.

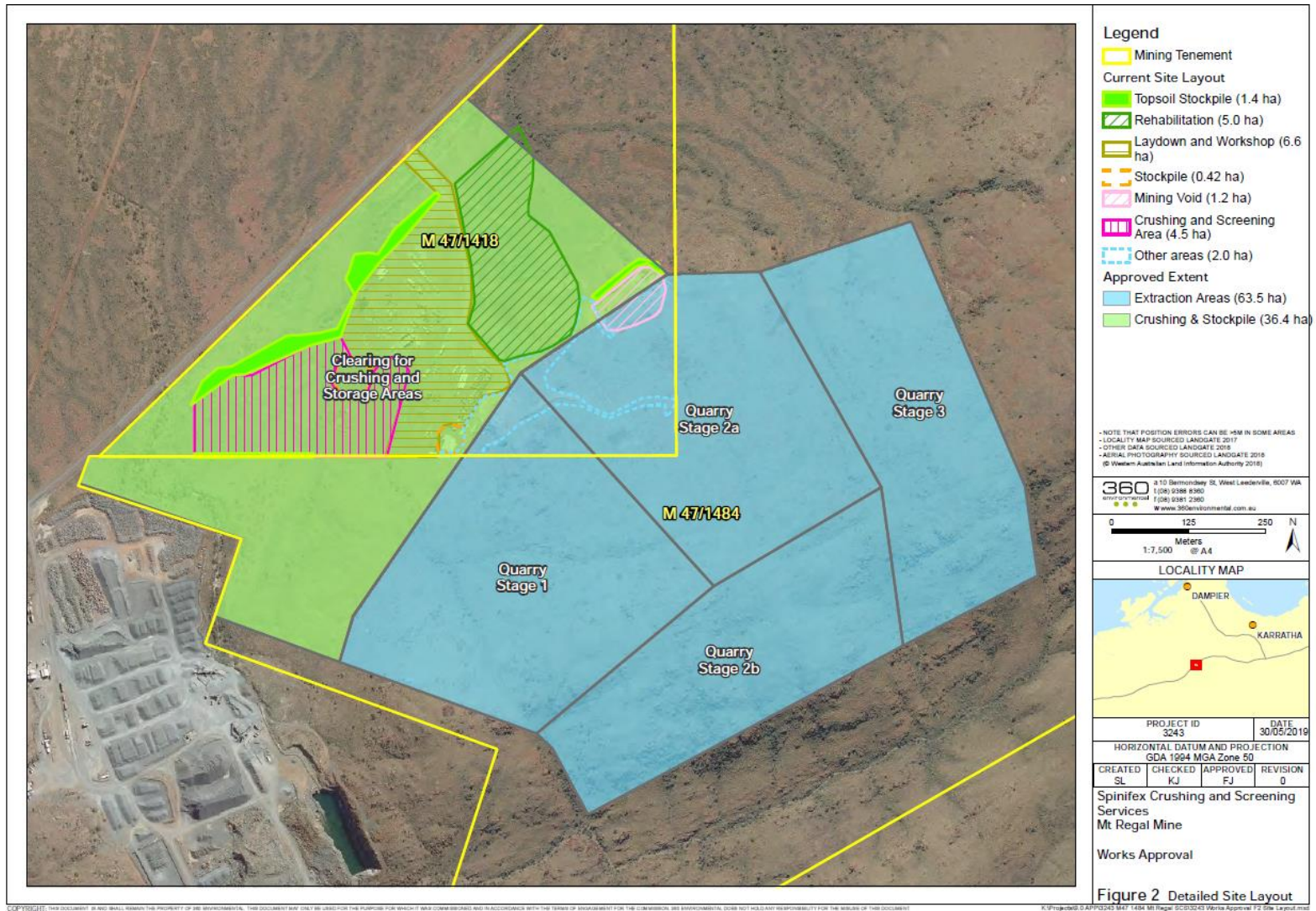
The rock will be quarried using standard drill and blast techniques, with the resulting quarry product treated in a mobile crushing and screening plant, to produce product according to commercial demand (360 Environmental, 2019). It is anticipated that minimal product will be stockpiled on site as the intent is to only produce significant quantities of material as and when commercial demand required. Explosives will be supplied by approved contractor on a daily basis and will not be stored on site. Due to the nature of the operation being on a campaign basis and mobile equipment, the location of crushing and screening areas will change, but generally, will be within the area shaded green in Figure 1.

The infrastructure and equipment are outlined in the table below and the site layout is shown in Figure 1 and Figure 2.

**Table 3. Infrastructure list**

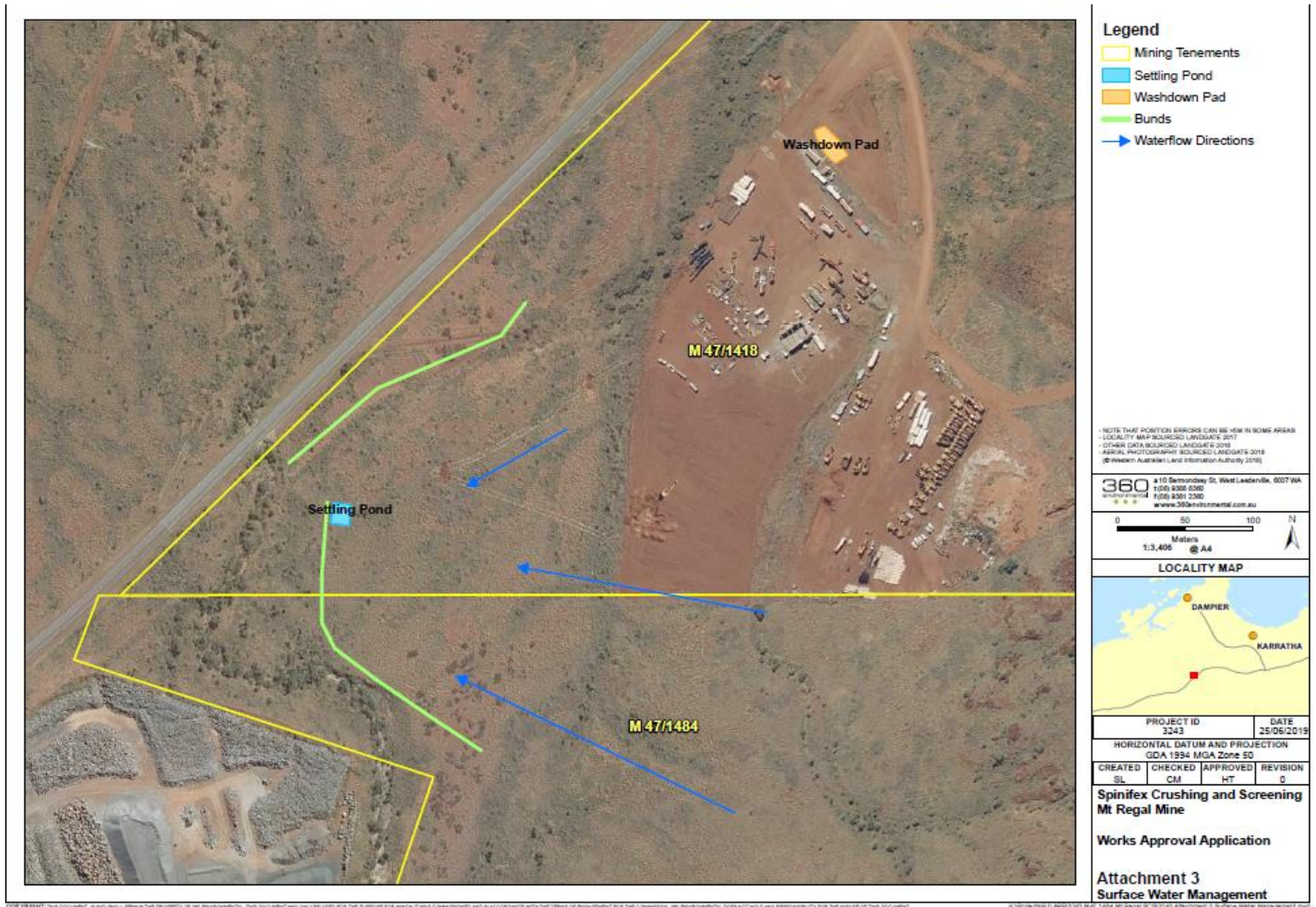
	Infrastructure	Site Plan Reference
	<b>Prescribed Activity Category 12</b>	
1	Mobile crushing and Screening : <ul style="list-style-type: none"><li>• Reclaimers;</li><li>• Jaw Crusher;</li><li>• Cone Crusher;</li></ul>	Infrastructure will be located within the area shaded green in Figure 1.
2	Stockpiles (6 to 8)	
3	Front End Loader and tip truck	
4	Service Truck	

	<b>Infrastructure</b>	<b>Site Plan Reference</b>
	<b>Other infrastructure/equipment</b>	
1	Settling pond	Locations depicted in Figure 2
2	Bunds for stormwater diversion	
3	Wash down area	



**Figure 1: Site Layout Plan**

*Image provided as part of works approval supporting documentation*



**Figure 2: Site Layout Plan for Surface Water Management**

*Image provided as part of works approval supporting documentation*

### 3. Legislative context and other approvals

**Table 4. Other approvals**

Legislation	Number	Approval
<i>Environmental Protection Act 1986</i>	CPS 6233/1	Clearing Permit CPS 6233/1 is valid until 30 June 2025 and authorizes the clearing of 272.02 hectares of native vegetation within Mining Lease 47/1484 for the purpose of mineral production.
<i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>	Regulation 5, Item 20	Clearing resulting from low impact or other mineral or petroleum activities.
<i>Rights in Water and Irrigation Act 1914</i>	GWL 174699	Groundwater licence 174699 is valid until 29 November 2021 and has an annual water entitlement of 50kL for dust suppression for mining purposes. The Licencee is Achillies Pty Ltd
<i>Mining Act 1978</i>	Reg ID 52422	Mining Proposal and Mine Closure Plan

### 4. Emission sources, pathways and receptors

#### 4.1 Emissions

The potential for emissions to impact on sensitive receptors has been assessed in accordance with the Department's *Guidance Statement: Risk Assessments*. The key emissions considered in this report are dust, noise, movement of sediment (e.g. into waterways) and hydrocarbon spills from activities including crushing and screening; equipment placement and use; and vehicle movements during construction and operation.

The Applicant has proposed measures to assist in controlling these emissions, where necessary. The control measures have been considered when undertaking the risk assessment detailed in Section 5.

#### 4.2 Receptors

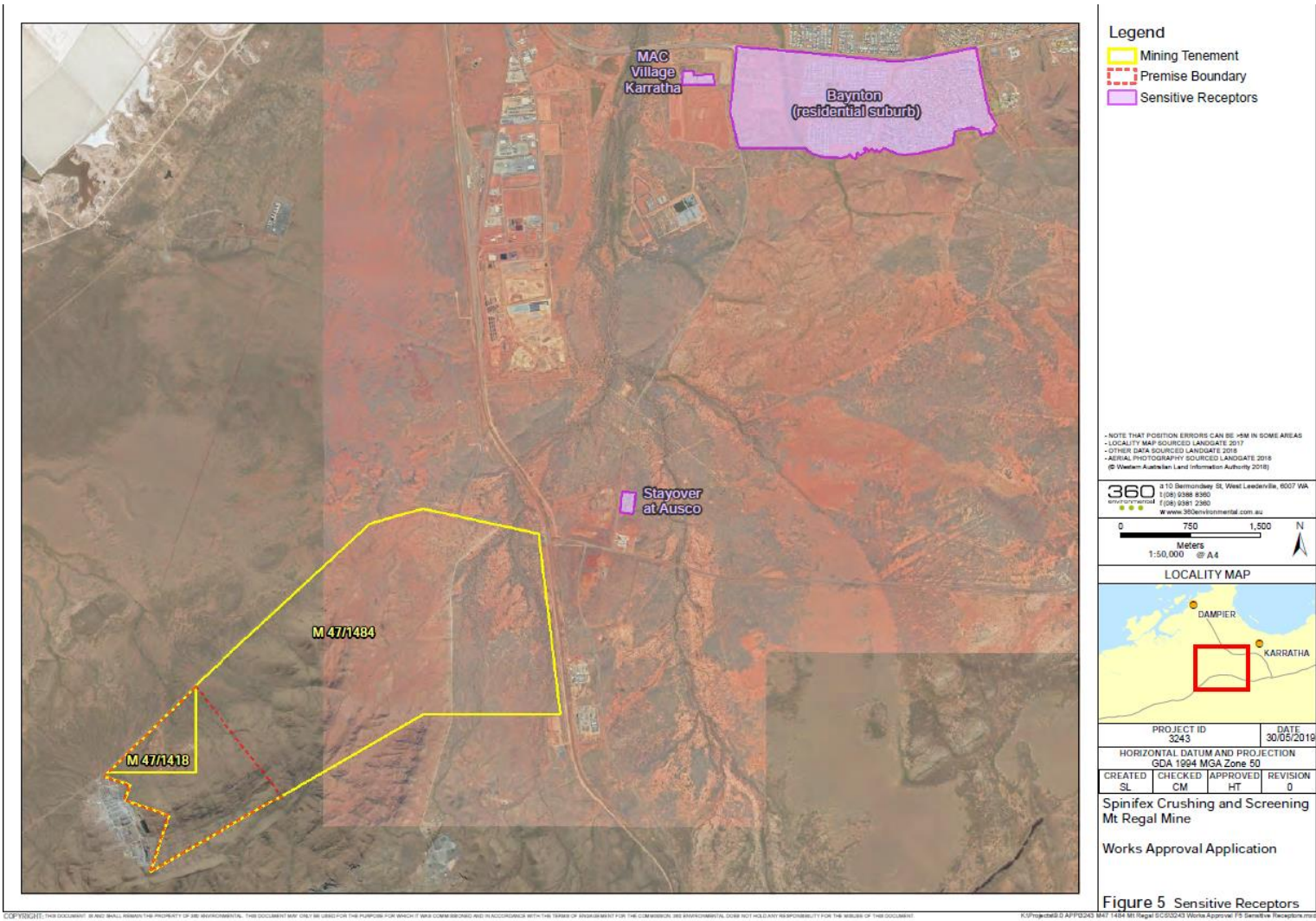
Risk is assessed as a combination of emission sources, the proximity and sensitivity of receptors to those emission sources and any pathways that can allow the emission to reach and potentially harm the receptor. Figure 3 and the table below provides a summary of human and environmental receptors in proximity to the premises and the risk assessment in Section 5 considers these receptors in the context of emissions and potential pathways.

**Table 5. Receptors**

Receptor	Distance from Prescribed Premises
<b>Human receptors</b>	
Stayover at Ausco	Serviced accommodation for mining and resource workers, approximately 5km east of the Premises
MAC Village Karratha	Serviced accommodation for mining and resource workers, approximately 8.5km north-

	east
Bayton	Residential suburb, approximately 8.7km north-west
North West Coastal Hwy	Adjacent to the Prescribed Premise boundary. Area designated for crushing and screening is within 50m of the highway.
<b>Environmental receptors</b>	
Threatened ecological community	Roebourne Plains coastal grasslands with gilgai microrelief on deep cracking clays, /approximately 2km north and west of ML47/1484
Department of Biodiversity, Conservation and Attractions managed lands	Murujuga National Park, approximately 13km north of ML47/1484
Groundwater	The Premises boundary is located within the Pilbara Groundwater Area which is a proclaimed area under the <i>Rights in Water and Irrigation Act 1914</i> . The proposed operations will not intercept groundwater.
Surface water	No major watercourses occur within the Premises boundary, however numerous minor, non-perennial watercourses intercept the area.
Fauna	The northern quoll ( <i>Dasyurus hallucatus</i> ) is listed as endangered under the <i>Biodiversity Conservation Act 2016</i> within the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i> , and has been recorded within 10 kilometres of ML47/1484. In May 2014 Spinifex Crushing and Screening commissioned 360 Environmental to undertake a Level 1 Fauna assessment within M47/1484. This survey identified the northern quoll within the survey area. A second, targeted survey concluded that the site was highly unlikely to contain any denning habitat but could potentially be used as foraging habitat.
Flora	In May 2014 Spinifex Crushing and Screening commissioned 360 Environmental to undertake a Level 2 Flora and Vegetation assessment within M47/1484. No threatened flora were recorded. Once priority 3 species, <i>Vigna sp. Rockpiles</i> (R.Butcher et al. RB 14700) was recorded within the survey area. This species was not located within the boundary of area subject to this application.





**Figure 3: Distance to human receptors**

*Image provided as part of works approval supporting documentation*

### **4.3 Pathways**

As dust and noise are considered potential emissions, the prevailing wind direction has been considered. Using information available on the Bureau of Meteorology's website, the prevailing wind direction at Karratha Aero is predominately in an easterly direction in the morning and north easterly in the afternoon.

Sediment movement from surface run-off across the Premises may cause an increase in suspended solids in minor, non-perennial watercourses, resulting in turbidity and sedimentation. Contamination may also occur if sediments come into contact with contaminants (for example hydrocarbons).

Hydrocarbon spills during re-fuelling and/or breaches of containment will contaminate soils, inhibit vegetation growth and cause health impacts to fauna.

These pathways have been considered in the risk assessment table in Section 5.

## 5. Risk Assessment

Risk ratings have been assessed for each key emission source and take into account potential source-pathway-receptor linkages. The mitigation measures / controls proposed by the Applicant have been considered in determining the risk rating. Emissions during construction and operation have been assessed separately. The works approval that accompanies this report authorises construction and 3 month operation only. A licence is required to operate the premises on an ongoing basis.

**Table 6: Risk assessment - construction**

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Placement of screener and associated equipment including vehicle movements	Dust	Air/windborne pathway causing impacts to flora and vegetation	The mobile crushing and screening plant will be placed on existing cleared areas.  Dust	Slight	Rare	Low	The minor construction works (equipment placement) are not expected to generate significant dust emissions.  The proposed controls are expected to be sufficient at mitigating dust emissions.	The mobile crushing and screening plant and its location will be conditioned in the Works Approval

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
		Air/windborne pathway causing impacts to North West Coastal Hwy.	<p>suppression via water trucks.</p> <p>Trucks will be washed down before leaving the premises to stop the spread of dust offsite.</p>	Slight	Rare	Low	<p>The construction / installation works (equipment placement) are not expected to generate significant dust emissions.</p> <p>The residential receptors are located over 2km from the Premises.</p> <p>North West Coastal Hwy is located adjacent to the north western boundary of the prescribed premise. Despite the proximity of this receptor the Delegated Officer has determined that the applicant controls will be sufficient to ensure the highway traffic is not impacted by dust.</p>	

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
	Noise	No residences or other sensitive receptors in proximity	Vehicles and equipment to be fitted with appropriate noise control and routinely maintained	n/a	n/a	n/a	<p>The construction / installation works (equipment placement) are not expected to generate significant noise emissions. The closest human receptors are located over 5km from the Premises. The Delegated Officer considers this distance sufficient to ensure that noise impacts do not occur.</p> <p>Any noise impacts resulting from the Premises can be adequately managed under the <i>Environmental Protection (Noise) Regulations 1997</i>.</p>	The mobile crushing and screening plant and its location will be conditioned in the Works Approval to ensure the emissions are controlled, consistent with the assessment.

\*Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

**Table 7: Risk assessment - operation**

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
<p>Loading and hauling; crushing and screening; stockpiling; storm water runoff from washdown area, storage of hydrocarbons; and re-fueling</p>	Dust	Air/windborne pathway causing impacts to flora and vegetation	<p>Key management strategies include:</p> <ul style="list-style-type: none"> <li>• Dust suppression via water truck as necessary and optional use of a benign dust suppressant on disturbed surfaces;</li> <li>• Site visual inspection of dust and positive communication with operators to ensure safe activities;</li> <li>• Weather forecasts will be used to schedule works – hot dry weather and high winds increase the risk of dust generation;</li> <li>• Reschedule dust generating activities on windy days;</li> <li>• Trucks are to be washed down before leaving the premises to stop the spread of dust offsite;</li> </ul>	Slight	Rare	Low	<p>This receptor (native vegetation) is within the Premises boundary however, given the applicant controls, impacts are unlikely to occur.</p> <p>The general provisions of section 49 of the EP Act are also sufficient to regulate dust emissions from the Premises during operation.</p>	<p>The mobile crushing and screening plant can be operated under the works approval for a period of three months.</p> <p>The siting of the mobile crushing and screening plant and associated infrastructure must be within the nominated areas (shown in Schedule 1) to ensure potential dust emissions are consistent with the assessment and</p>

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
		Air/windborne pathway causing impacts to North West Coastal Hwy	<ul style="list-style-type: none"> <li>Water used for dust suppression will be used cautiously, only to be used on roads and ensured that runoff will not leave the premises boundary; and</li> <li>Crushing and screening equipment are fixed with a reticulation system to suppress dust.</li> </ul>	Slight	Rare	Low	North West Coastal Hwy is located adjacent to the north western boundary of the prescribed premise. Despite the proximity of this receptor the Delegated Officer has determined that the applicant controls will be sufficient to ensure the highway traffic is not impacted by dust.	application.

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
	Noise	No residences or other sensitive receptors in proximity	<p>Key management strategies include:</p> <ul style="list-style-type: none"> <li>• Vehicles and equipment to be fitted with appropriate noise control and routinely maintained</li> <li>• All plant and equipment will be regularly monitored and maintained Engine tampering to increase power output will be prohibited</li> <li>• Operating hours are restricted between the hours of 6:00am – 6:00pm Monday to Sundays. No night operations are anticipated</li> <li>• A complaints register will be kept and reported in the AER.</li> </ul>	n/a	n/a	n/a	<p>Any noise impacts resulting from the Premises can be adequately managed under the <i>Environmental Protection (Noise) Regulations 1997</i>.</p>	<p>The mobile crushing and screening plant can be operated under the works approval for a period of three months.</p> <p>The siting of the mobile crushing and screening plant and associated infrastructure must be within the nominated areas (shown in Schedule 1). This will be conditioned in the Works Approval.</p>



Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
	Sediment	Overland, stormwater runoff causing impacts to minor, non-perennial watercourse from an increase in suspended solids resulting in turbidity and sedimentation the watercourses, and associated riparian flora and fauna	<p>Earthen bunds will be constructed on an as needs basis and will direct water flow to the settling pond or base of pit.</p> <p>The settling pond is proposed to be located in the south west corner of M47/1418 based on the water flow direction as a result of local topography and recent site observations.</p> <p>The settling pond design will have the capacity to capture a large rainfall event (e.g. 200 mm). The design of the pond will be such that an earthen V-shaped bund will be created around the ground level pond. Rock gabion will be used at the tip of the V to allow water to pass but slows it down and captures sediment before exiting the site boundary.</p> <p>A one metre freeboard is proposed to minimise overtopping. The pond will be inspected after large rainfall events and will be cleaned out and maintained regularly. Site inspections and audits (as per Mining Proposal) will record maintenance of the pond.</p>	Minor	Unlikely	Low	<p>The watercourses within the Premise Boundary are minor and non-perennial and therefore the consequence is likely to be minor.</p> <p>Applicant controls are suitable for limiting sediment release and runoff.</p>	<p>The mobile crushing and screening plant can be operated under the works approval for a period of three months, once a report and photos have been provided confirming that infrastructure has been constructed with no material defects.</p> <p>The siting of stormwater management infrastructure must be situated (as shown in Figure 2 above) to direct and catch storm water. This will be conditioned in the Works Approval.</p>

	Storage and use of hydrocarbons	Spill and/or breaches of containment causing impacts to soil, vegetation, terrestrial fauna, groundwater and surface water	<p>Key management strategies include:</p> <ul style="list-style-type: none"> <li>• All staff involved in handling of hazardous chemicals and fuels will be suitably trained</li> <li>• The proximity of the project to Karratha makes it unnecessary to store any hydrocarbons on site, fuel will be trucked in by a refuelling/service truck</li> <li>• All hydrocarbon storage will be in accordance with DWER guidelines and standards for storage and according to the MSDS for each product. Any hazardous materials will be contained in bunds. All storage will be in accordance with the Australian Standards AS1940 and AS1692</li> <li>• Waste oils will be removed from vehicles by an E-vac system and stored on the service truck. All used hydrocarbons will be dispensed from the fuel truck at the licensed facility offsite</li> <li>• Any hazardous chemicals and flammable and combustible liquids will be stored in accordance with legislative requirements and Australian Standards AS1940:2004-<i>The storage and handling of Flammable and Combustible liquids</i></li> </ul>	Minor	Possible	Medium	The proposed controls are expected to be sufficient at mitigating hydrocarbon emissions.	The general provisions of the EP Act and <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> apply.
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Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
			<ul style="list-style-type: none"> <li>• Scheduled maintenance and servicing of equipment and vehicles to be conducted off site as per manufacturer's instructions</li> <li>• Appropriate spill kits, including containment and recovery equipment, personal</li> <li>• protective equipment and relevant operator instructions/emergency procedure</li> <li>• guides for the management of wastes and chemicals associated with the activities will be kept and maintained on –site</li> <li>• Spill kits will be strategically located throughout the facility</li> <li>• appropriate spill response equipment for hazardous materials will be identified and readily accessible in areas where hazardous materials are stored.</li> </ul>					

\*Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

## 6. Consultation

**Table 8. Consultation**

Method	Comments received	DWER response
Application advertised on DWER website (29/07/2019)	No public submissions were received	N/A
Direct interest stakeholders notified Referral of a Works Approval was sent to the City of Karratha on 23/07/2019	No comments from the City of Karratha were received.	N/A
Applicant notified of draft (13/09/2019)	The Applicant responded on 18/092019 requesting to waive the 21 day notification period.	N/A

## 7. Conclusion

This assessment of the risks of activities on the premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this decision report (summarised in Appendix 1).

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the approval under the EP Act.

**Louise Lavery**  
**A/Manager – Resource Industries**  
**REGULATORY SERVICES**

**19 September 2019**

Delegated Officer under section 20 of the *Environmental Protection Act 1986*

## Appendix 1: Key documents

Document title	Availability
Works Approval application form and supporting documentation (360 Environmental, 2019)	DWER records (A1793944; A1799998)
Appendix D – Mount Regal Karratha – Flora, Vegetation and Fauna Assessment (360 Environmental, 2019)	DWER records (A1794304)
Email from consultant (360 Environmental) on 26 June 2019 providing additional information regarding surface water management.	DWER records (A1799998)
DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	
DER, February 2017 <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
DER, February 2017. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	