



Application for Licence

Division 3, Part V *Environmental Protection Act 1986*

Licence Number	L9217/2019/1
Applicant	Hanson Construction Materials Pty Ltd
ACN	009 679 734
File Number	DER2019/000438
Premises	Turner River Sands Project Mining Lease M45/1193, 35 Great Northern Highway, TOWN OF PORT HEDLAND WA 6721
Date of Report	13 December 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
AEP	annual exceedance probability: The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.
Applicant	Hanson Construction Materials Pty Ltd.
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
EPA	Environmental Protection Authority
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
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>
ToPH	Local Government Authority: Town of Port Hedland
Unauthorised Discharges Regulations	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>

2. Purpose and scope of assessment

This assessment is for a new licence (L9217/2019/1) for the Turner River Sand Project operated by Hanson Construction Materials Pty Ltd (the Applicant). The Premises is positioned within mining tenement M45/1193.

Table 2 lists the documents submitted during the assessment process.

Table 2: Documents and information submitted during the assessment process

Document/information description	Date received
Hanson Construction Materials Pty Ltd., 2019, Turner River Bridge Sand Project: Prescribed premises licence application: Forma and Support Document	14 August 2019

3. Background

The Applicant acquired the Turner River Bridge Sand Project from Dumpna Pty Ltd in July 2018. The premises has not previously been licenced or registered under the EP Act however a works approval (W6189/2018/1) was issued 14 January 2019 for prescribed premises category 12 (screening, etc. of material), which included the installation of a screening plant and associated infrastructure.

Compliance documentation for the works approval was received 19 June 2019. A review of this documentation identified that the infrastructure was constructed as proposed except for the waste oil bunding which was constructed to 5m³ rather than 3m³. The increase in the size of the waste oil bunding is not expected to significantly impact the risk rating for the Premises

As the Applicant intends to extract more than 50,000 tonnes per year, the minimum production or design capacity threshold for Category 12 is exceeded which requires an operating licence. The application for a licence was received by DWER on 14 August 2019.

Table 3 lists the prescribed premises categories that have been applied for.

Table 3: Prescribed Premises Categories in the Existing Licence

Classification of Premises	Description	Approved Premises production or design capacity or throughput
Category 12	Screening, etc. of material	Maximum design capacity is 160,000 tonnes per year.

The Premises is situated within the Pilbara which has very hot summers, mild winters and low and variable rainfall. It is classified as hot desert in northern and inland areas and hot grasslands in the north-west. Rainfall is spatially and temporally variable in the Pilbara it can be less than 250mm annually with the majority of rainfall within summer - autumn (October – April).

Tropical cyclones cause the most extreme rainfall events and generate 25–34% of the total annual rainfall near the Pilbara coast and as much as 21% up to 450km inland. Tropical cyclones contribute from 0 to 86% of summer rainfall in the north-west. This rainfall pattern causes the river systems in the Pilbara to be ephemeral and reliant on the infrequent heavy falls of rain in the summer – autumn period. (DPIRD, 2019 and BOM, 2019)

4. Overview of Premises

4.1 Operational aspects

The Applicant proposes to screen up to 160,000 tonnes per year of sand and shingle material extracted from the river bed of the Turner River, located within Mining Lease M45/1193,

approximately 25km south-west of Port Hedland in Western Australia. 160,000 tonnes per year is the maximum design capacity of the screening plant located on the premises but the Applicant expects the annual amount will be approximately 50,000 tonnes per year based on demand in the construction industry in the area. The extraction and screening will be carried out in time limited campaign style and daily operation is not expected to exceed 7-10 hours per day.

The extracted material will be sorted into a range of products including <8mm sand, 8-65mm river shingle, and >65mm stones, sticks and plant material. The Applicant expects approximately 3.5 ha will be extracted annually at a maximum depth of 1.2m. Screened material will be stockpiled onsite.

The infrastructure and equipment are outlined in Table 4 below and the site layout is shown in Figure 1.

Table 4: Category 12 Screening infrastructure

	Infrastructure and Equipment	Site Plan Reference (Figure 1)
	Prescribed Activity Category 12	
No more than 160,000 tonnes per year of material will be screened. Materials will be stockpiled on the Premises.		
1	1x Terex Finlay 883 mobile screening plant: Maximum design capacity of 160,000 tonnes per year or 100 tonnes per hour.	Stockpile area, NE1, DE1 (Figure 1)
2	25 kVA generator set and fuel supply housed in a sea container situated on a 1,000L bund tray—located 1m above the natural ground level	Sea containers, NE2 (Figure 1)
3	front-end loader	N/A
4	40 tonne articulated dump truck	N/A
5	Water cart fitted with a dribble bar and independently controlled large side bars	N/A
6	Earthen bund (3m ²) able to contain 1% AEP 72hr rain event with 300mm freeboard.	Hydrocarbon waste storage (Figure 1)
7	1x self-bunded sea container to store fuel and oil located 1m above the natural ground level.	Sea containers (Figure 1)
	Other Activities/ Infrastructure	
2	1x weigh bridge and recording shed	N/A
3	A monitoring bore	Monitoring bore (Figure 1)
4	1x water tank	N/A

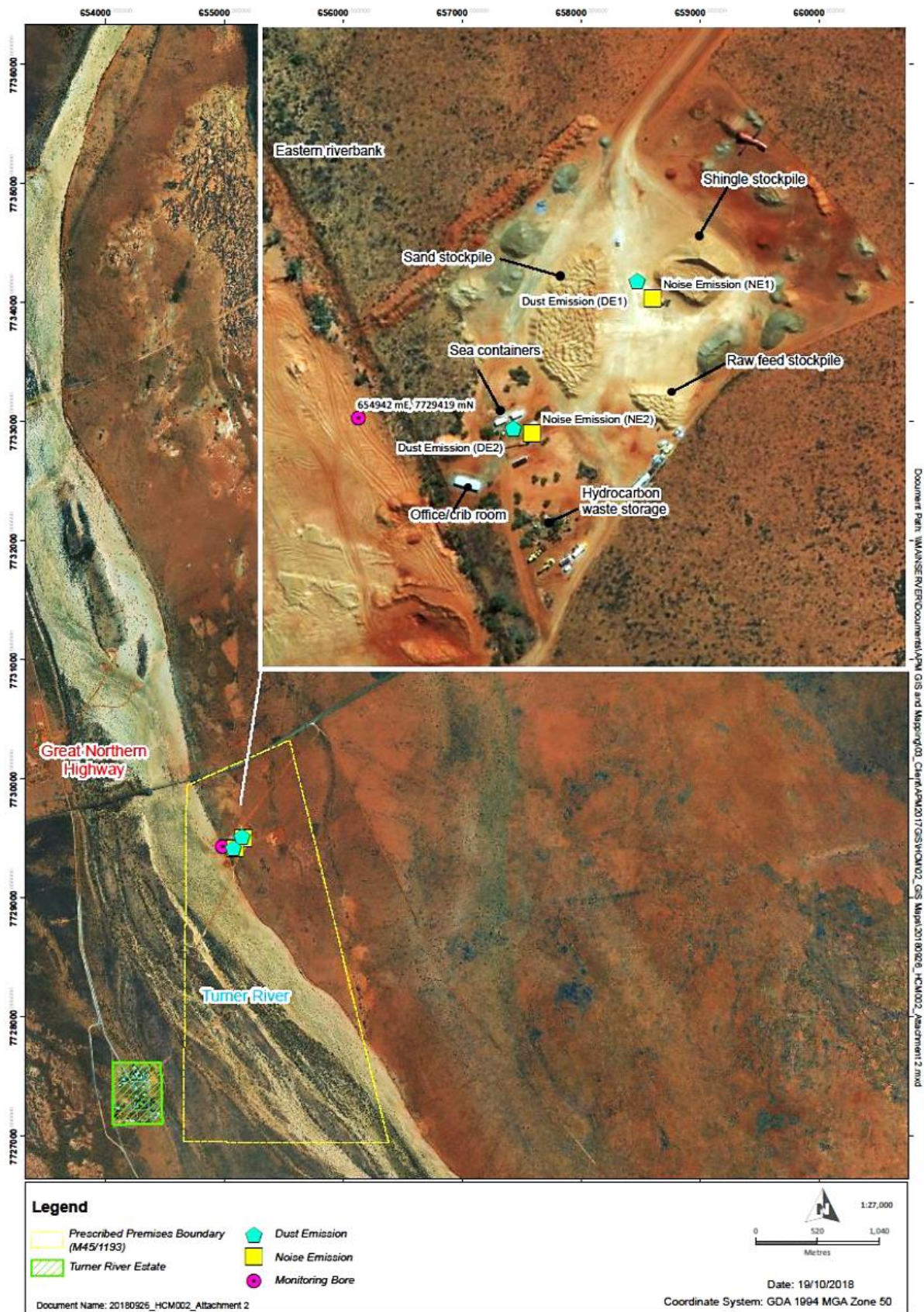


Figure 1: Site layout plan

5. Legislative context and other approvals

Approvals relevant to the premises are outlined in the table below.

Table 5: Relevant approvals and tenure

Legislation	Number	Approval
<i>Environmental Protection Act 1986</i>	W6189/2018/1	Approves construction of a mobile screening facility and waste oil bund on the Premises.
<i>Environmental Protection Act 1986</i>	CPS: 4034/5	DMIRS - Approval to clear 106.9ha of native vegetation Valid 15 January 2011 – 15 January 2021
<i>Mining Act 1978</i>	Mining Tenement M45/1193	Mining proposal MP 52610 approved by DMIRS. Requirements for hydrocarbon management within this approval are as follows: <ul style="list-style-type: none"> • Provide a suitable level of training to staff upon commencement of employment • Ensure spill response equipment is available and procedures are communicated effectively to staff continuously throughout construction and operations • Storage of hydrocarbons to be in accordance with AS/NZS 1940:2004. during operations • Oils and lubricants to be contained/stored in a bunded container. during operations • An inventory of hydrocarbons and quantities will be maintained during operations • Regular inspections of storage areas will be conducted to identify any leaks or issues with hydrocarbon storage. Weekly • MSDS's will be located at storage areas and will be regularly maintained during operations • Hanson will conduct minor servicing of plant and equipment on site. Hydrocarbon wastes from servicing will be contained in either 20 L or 200 L drums for later disposal at South Hedland waste disposal facility. According to vehicle maintenance schedules • Dispose of materials in accordance with MSDS specifications during operations • Report any significant hydrocarbon spill to DWER as soon as possible after it occurs. As soon as possible after a spill
<i>Mines Safety and Inspection Act 1994</i>	N/A	Project Management Plan Approved by DMIRS
<i>Planning and Development Act 2005</i>	N/A	The applicant advises that the mining lease supersedes the requirement for planning approvals. On 14/12/2018, the LGA (ToPH) advised DWER that “ <i>Due to the proximity of works to the nearby rural residential area, Turner River Estate, an application for Development Approval is required to be submitted to the Town. The application will be formally advertised to potentially affected residents.</i> ” The Delegated Officer considers the requirements for Development approval to be a matter between the applicant and the ToPH. Further correspondence between the Applicant and the ToPH appears to have resolved this matter (see section 6: Correspondence).

Legislation	Number	Approval
		However, the grant of an EP Act works approval does not exempt the applicant from approval requirements under other legislation.
<i>Rights in Water and Irrigation Act 1912</i>	GWL 176061(2)	Licence to take 750 kilolitres/ year of groundwater within the Pilbara Lower Turner Alluvial area for dust suppression and mining camp purposes.

6. Emission sources, receptors and pathways

6.1 Emissions

The potential for emissions to impact on sensitive receptors has been assessed in accordance with the Department's Risk Framework. The key emissions considered in this report are dust and noise from activities including screening equipment use and vehicle movements (including reversing alarms) during operation.

Contaminated runoff (sediment/particulates) is a potential emission through overland flow from operations to the Turner River. Hydrocarbons are also a potential emission from the Premises as the site operates heavy machinery and a generator on the premises which requires storage and/or handling of hydrocarbons on the Premises.

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 Table 7 of this report.

6.2 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 2 and the Table 6 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 6: Sensitive human and environmental receptors

Receptor	Distance from Prescribed Premises
Human receptors	
Turner River Estate	A semi-rural housing development located 1.9km to the south-west of screening operations
Environmental receptors	
Turner River	Within site boundary: The Turner River has an ephemeral pattern of flow, no flow during dry seasons and only flows after sufficient rainfall.
Groundwater - Lower Turner Alluvial aquifer: Water is of potable quality however it is not currently used for potable use. Groundwater was previously used to supply water to the town of Port Hedland but had a limited production due to concerns about salt water intrusion.	15m below the surface

Major watercourses/waterbodies

Permanent pools of the lower Turner River are considered to provide refuges for aquatic and terrestrial flora and fauna.

Permanent pools in the lower Turner River are considered subregionally significant and impacts on them as a result of water abstraction should be avoided. (DOW, 2011)

The near permanent Moorambine Pool is approximately 2.9 km downstream from the Premises.

An unnamed pool, determined to be present 85% of the year, is within 900 m downstream of the Premises. (DOW, 2011)



**Figure 2:
Distance to
sensitive
receptors**

6.3 Pathways

The air/wind is considered the main pathway for the emissions of dust and noise so prevailing wind direction has been considered. Using information available on the Bureau of Meteorology's website, the closest available weather station for climatic data is at the Port Hedland Airport (No. 004032). Based on the climate data for the Port Hedland station, the prevailing wind direction is east to south-east in the morning, and north to north-west in the afternoons. The average wind speeds throughout the day are 20 to 30 km/h.

Contaminated runoff (sediment/particulates) can enter the Turner River system through overland flow of rainfall.

Hydrocarbons have the potential to impact the groundwater and surface water on the premises through overland runoff or infiltration during heavy rainfall or high flow conditions in the Turner River.

7. Risk assessment

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

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. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 7.

Risk ratings have been assessed for each key emission source and takes into account potential source-pathway-receptor linkages. The mitigation measures/controls proposed by the Applicant have been considered in determining the risk rating.

7.1 Risk assessment

Table 7: Risk assessment for screening plant operation and hydrocarbon refueling and storage

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					
Screening plant, generator operation, vehicle movements (including reversing alarms)	Noise	Air/ windborne pathway causing impacts to health and amenity of closest human receptors (Turner River Estate) 1.9km from prescribed activity.	Vehicles, plant and machinery will be serviced and maintained to assist in machinery operating at relevant sound power levels. Any complaints regarding excessive noise generation will be investigated and mitigating measures implemented where required.	Minor	Unlikely	Medium	<p>The closest human receptors are located a significant distance (1.9km) from the screening activities and are not in the direction of the prevailing wind.</p> <p>The proposed controls are expected to be sufficient at mitigating noise emissions.</p> <p>The applicant advises they estimate screening noise levels at Turner River Estate will be less than 40 dB given the distance from the Prescribed Premises and the emissions at the Premises. The Applicant provided information predicting the level of 40 dB at the receptors using the sound power levels of being 60dB from the generator and 98dB from the screening plant. The screening plant will also be positioned behind product stockpiles.</p> <p>Machinery operating for removal of sand from the Turner River is between the screening operations and the Turner River Estate making this machinery a closer source of noise emission. Sand quarrying is not a Prescribed Activity under the EP Act and is regulated via tenement conditions by DMIRS.</p>	<p>Noise emissions must comply with the levels assigned under the Noise Regulations</p> <p>Condition 1 – maintenance of infrastructure</p> <p>Condition 5: the recording of complaints</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					
Screening plant operation, stockpiling and loading of haul vehicles	Dust	Air/ windborne pathway causing impacts to health and amenity of closest human receptors (Turner River Estate) 1.9km from prescribed activity.	<p>The applicant will incorporate dust management into the site protocols, including inspection requirements, mitigation strategies (sheeting pindan/clay area with river shingle) and suppression techniques to be employed (primarily water cart with dribble bar and spray cannons).</p> <p>All staff and contractors visually monitor dust levels. In the event that weather conditions lead to extreme dust generation, activities will be halted until weather conditions are unlikely to generate significant dust.</p> <p>Dust skirts and covers have been fitted on equipment.</p>	Slight	Unlikely	Low	<p>The closest human receptors are located a significant distance (1.9 km) from the screening activities and are not in the direction of the prevailing wind.</p> <p>The proposed controls are expected to be sufficient at mitigating dust emissions.</p>	<p>Condition 1 – maintenance of infrastructure including the requirement for dust skirts and covers.</p> <p>Further regulatory controls in the form of licence conditions are not considered necessary based on the low risk rating for dust emissions.</p>
Refueling and storage of hydrocarbons	Hydrocarbon leaks or spills	Contamination of Turner River and Groundwater causing impact to health and	In accordance with the proposal, the applicant will store fuel and hydrocarbons in shipping containers on raised bunds	Minor	Unlikely	Medium	<p>The soil is sandy alluvial plains to narrow, active floodplain with red shallow sand on granite soils.</p> <p>Groundwater levels are at a depth of 15m and the projects excavation is limited to a depth</p>	<p>Regulatory controls requiring all fuel and hydrocarbons to be stored in shipping containers on raised bunds.</p> <p>Condition 1 – maintenance of infrastructure including</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					
		amenity of local environment and human receptors.	<p>away from river bed.</p> <p>Waste hydrocarbon will be stored on portable bunding units within the storage earthen bund. Less than 1000L of waste of waste hydrocarbons will be stored at any one time.</p> <p>The waste hydrocarbon bund will include temporary bund pallets as the earth bund is not lined and the earth bund is to be maintained so that it is able to contain 1% AEP 72hr rain event with 300mm freeboard. Spill kits will be positioned at the bund.</p> <p>The Applicant will limit excavation to a depth of 1.2m, which will assist in maintaining a separation distance of 13m between the operational area and groundwater.</p>				<p>of 1.2m.</p> <p>Turner River is a highly varied watercourse with no flow events during the dry season (Longest no-flow event recorded was 30 months).</p> <p>The proposed controls are expected to be sufficient at mitigating hydrocarbon emissions.</p>	<p>requirement for temporary bunding and spill kits.</p> <p>Discharges of hydrocarbons and fuels into the environment may be subject to the provisions of the Unauthorised Discharge Regulations.</p> <p>The Applicant has existing requirements for hydrocarbon management under Mining Proposal 52610 as outlined in Section 5.</p>
Processing and storage of material	Contaminated runoff (sediment/ particulates)	Overland runoff causing impacts to surface water	Earthen bunds surrounding processing and storage areas	Minor	Unlikely	Low	The nature of extracting sand from the river bed results in the sand having been washed by surface water. Due to this	N/A

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					
		quality of Turner River (within premises boundary) and associated riparian flora and fauna					natural washing process, the extracted material is unlikely to contain contaminants.	

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

8. Consultation

Table 8: Consultation table

Method	Comments received	DWER response
Application advertised on DWER website (1/10/2019)	No comments received	N/A
Direct interest stakeholders notified (1/10/2019)	No comments received	N/A
Applicant notified of draft (26/11/2019)	21 day period waived, 11/12/2019.	Licence issued 13/12/2019.

9. 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.

The expiry date of mining tenement M45/1193 is 2 June 2031. Therefore, the licence duration will be 13 December 2019 to 12 December 2030 which is within the active mining tenement duration.

Lauren Fox

Delegated Officer

under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

Document title	Availability
Works Approval (W6189/2018/1) application form and supporting documentation (November 2018)	DWER records (A1743941)
Animal Plant Mineral Pty Ltd (Mining Proposal 52610) Revised mining proposal for the modification of and extension of the Turner River Bridge Project.	accessed at: https://minedex.dmirs.wa.gov.au/Web/environment-registrations/details/52610
DoW, 2011, Lower Turner groundwater allocation limit report	accessed at: http://www.water.wa.gov.au/_data/assets/pdf_file/0012/4530/99457.pdf
Department of Primary Industries and Regional Development (DPIRD, 2019), accessed October 2019, Climate in the Pilbara region of Western Australia	accessed at: https://www.agric.wa.gov.au/climate-change/climate-pilbara-region-western-australia
Bureau of Meteorology (BOM, 2019), Average annual, seasonal and monthly rainfall	accessed at: http://www.bom.gov.au/jsp/ncc/climate_averages/rainfall/index.jsp?period=wet&area=wa#maps
DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	accessed at: www.dwer.wa.gov.au
DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	
DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.	
DER, February 2017 <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
DWER, June 2019. <i>Guideline: Decision Making</i> . Department of Water and Environmental Regulation, Perth.	