



## Application for Licence Amendment

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

---

<b>Licence Number</b>	L7815/2001/11
<b>Licence Holder</b>	Northern Star (Thunderbox) Pty Ltd
<b>ACN</b>	107 154 727
<b>File Number</b>	2012/006911-1
<b>Premises</b>	North Eastern Goldfields Operations Mining tenements L36/155, L36/157, L36/158, L36/181, L36/193, L36/199, L36/202, L37/61, L37/73, L37/142, L37/166, L37/181, L37/199, L37/215, L37/216, M36/35, M36/177, M36/421, M36/428, M36/462, M36/473, M36/494, M36/503, M36/504, M36/512, M36/525, M36/527, M36/541, M36/542, M36/582, M37/339, M37/340, M37/356, M37/357, M37/358, M37/359, M37/360, M37/361, M37/465, M37/367, M37/368, M37/437 and M36/599 LEINSTER WA 6437 As defined by the attached map in the Revised Licence
<b>Date of Report</b>	28 May 2021
<b>Decision</b>	Revised licence granted

**Terrel MacGregor**

**A/MANAGER – RESOURCE INDUSTRIES**

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

## Table of Contents

<b>1. Decision summary</b>	<b>3</b>
<b>2. Scope of assessment</b>	<b>3</b>
2.1 Regulatory framework	3
2.2 Application summary	3
<b>3. Risk assessment</b>	<b>4</b>
3.1 Source-pathways and receptors	5
3.1.1 Emissions and controls	5
3.1.2 Receptors	5
3.2 Risk ratings	6
<b>4. Consultation</b>	<b>8</b>
<b>5. Conclusion</b>	<b>8</b>
5.1 Summary of amendments	8
<b>References</b>	<b>8</b>
<b>Appendix 1: Application validation summary</b>	<b>9</b>

## 1. Decision summary

Licence L7815/2001/11 is held by Northern Star (Thunderbox) Pty Ltd for the North Eastern Goldfields Operations (the Premises), located in Leinster, Western Australia.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L7815/2001/11 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary

On 16 March 2021, the Licence Holder submitted an application to the department to amend Licence L7815/2001/11 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendment is being sought:

- To allow the construction and operation of a secondary crusher at the Thunderbox Mill. No increase in approved Category 5 throughput is proposed.

The Licence Holder has advised the department that the premises is moving to a new ore blend with a higher fresh rock component and therefore the additional crusher is required to allow the Licence Holder to maintain the approved Category 5 licenced throughput of 3 million tonnes per annum (Mtpa). Without the secondary crusher the plant would only be able to achieve a milling rate of 2.4 Mtpa. The existing crushing circuit will be upgraded to a closed-circuit secondary crushing circuit with the addition of the following infrastructure:

- CH780 ore crusher
- Double decked banana screen
- Magnets and metals detectors
- Conveyors as required to facilitate the installation.

The addition of this equipment will change the crushing process flow from a single stage open circuit to a two-stage closed circuit. The maximum design capacity for the secondary crusher based on infrastructure operating 24 hours a day, 7 days a week is 3Mtpa. The new infrastructure will be located next to the existing primary crusher and extend into existing laydown areas.

This amendment is limited only to changes to Category 5 with the addition of the secondary crushing circuit infrastructure. The assessment has been based on the actual throughput for category 5 (3Mtpa) rather than the combined maximum design capacity of the secondary crushing circuit and existing primary crusher. No changes to the aspects of the existing Licence relating to Categories 6, 52, 64, 73 or 54 have been requested by the Licence Holder.

The Licence Holder has consulted with the Department of Mines, Industry and Resources (DMIRS) and has been advised that the installation of the secondary crusher does not require a mining proposal or mine closure plan. The Licence Holder is planning to carry out further upgrades to the Thunderbox mill and this will be subject to additional approvals.

The layout of the new infrastructure is shown below in Figure 1.

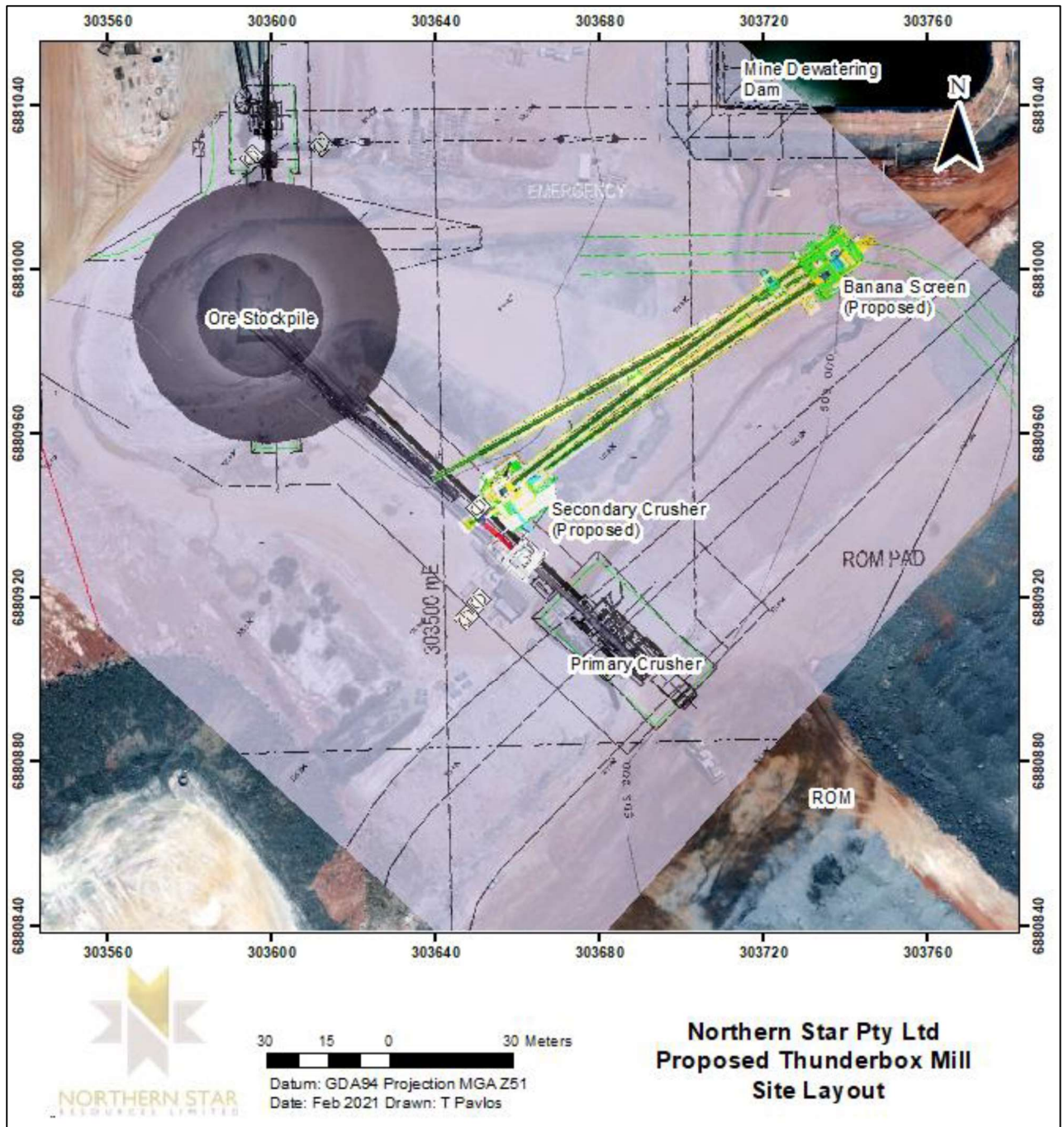


Figure 1: Layout of proposed secondary crusher infrastructure.

### 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 *Guidance Statement: Risk Assessments* (DER 2017).

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 Amendment Report are detailed in

**Table** below.

**Table** also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

**Table 1: Licence Holder controls**

Emission	Sources	Potential pathways	Proposed controls
Dust	Crushing of material, vehicle movements, lift-off from stockpiles and/or stored product, earthworks etc.	Air/windborne pathway	Water carts will be used to wet down roads etc. when required. Water sprays will be installed on the ROM bin. The crusher will be fitted with a dust enclosure with a dust collector (bag house). All transfer points will be equipped with rubber sealing and skirting to contain dust.
Hydrocarbon spills/leaks	Crusher / machinery	Direct discharge to land	The crusher will be installed on concrete footings which will provide primary bunding for spills of oil and grease used to lubricate and maintain equipment. Contaminated stormwater runoff will be captured via existing stormwater infrastructure.
Contaminated (sediment) stormwater	Stockpile runoff / runoff from within operations area.	Overland flow	The secondary crusher will be located in the processing plant area which has existing secondary bunding which drains to the south allowing surface water run off to be captured in existing sumps or the ROM toe drain. Clean stormwater runoff will be diverted around the processing plant area via existing diversion drains and contouring.

### 3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 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 (*Guidance Statement: Environmental Siting* (DER 2016)).

**Table 2: Sensitive environmental receptors**

Environmental receptors	Distance from prescribed activity
Surface water	<p>Minor surface water drainage lines exist directly to the west of the Thunderbox mill operations area.</p> <p>No major surface water features located within 5km of the Thunderbox mill operations area.</p>
Native Vegetation	<p>Native vegetation located west of Thunderbox mill operations area.</p> <p>Priority flora (P4) <i>Calytix Uncinata</i> has been located 1km west of the mill.</p> <p>No Threatened/ priority ecological communities within 5 km of the project area.</p>
<p>Designated Area (as defined in section 57 of the EP Act).</p> <p><i>RIWI Act 1914</i> – Groundwater Area</p>	<p>Premises is within the Goldfields Groundwater Area.</p> <p>Groundwater (fresh, TDS 370 – 740 mg/L; pH neutral to slightly alkaline (7.1 – 8.0). Depth to groundwater in the area is approximately 15 -30 meters below ground level (mbgl).</p> <p>Groundwater not considered as a receptor due to nature of proposed activity.</p>

### 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for those emission sources which are proposed to change 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 Licence Holder 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 Licence Holder’s proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

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

The Revised Licence L7815/2001/11 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises. The conditions in the Revised Licence 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, and operation.**

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
<b>Construction</b>								
Placement of screen, secondary crusher, conveyors, and associated equipment including vehicle movements.	Dust	Air/windborne pathway causing impacts vegetation health.	Native vegetation adjacent to project area	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	N/A	N/A
<b>Operation</b>								
Screening, crushing, unloading, loading and storage of material.	Dust	Air/windborne pathway causing impacts vegetation health.	Native vegetation adjacent to project area	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1.3.11 – Infrastructure requirements	Applicant's infrastructure dust controls conditioned within the licence i.e. dust collector installed on cone crusher.
	Hydrocarbon spills/leaks	Direct discharge to land. Potentially causing contamination of soils.	Soil within project area.	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	N/A	Existing condition 1.2.1 adequately regulates this risk event. No additional regulatory controls required.
	Sediment laden / contaminated stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Native vegetation adjacent to project area. Minor surface water drainage lines adjacent to project area.	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	N/A	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

Licence: L7815/2001/11

## 4. Consultation

Table provides a summary of the consultation undertaken by the department.

**Table 4: Consultation**

Consultation method	Comments received on 28 May 2021	Department response
Licence Holder was provided with draft amendment on 27 May 2021	Northern Star wish to waive the consultation period and have the Licence issued as soon as possible.	Noted.

## 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### 5.1 Summary of amendments

Table provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

**Table 5: Summary of licence amendments**

Condition no.	Proposed amendments
1.3.11	Table 1.3.5 updated to include infrastructure requirements for the secondary crushing circuit infrastructure.
Schedule 1	Figures 10 and 11 added to Schedule 1 to show location and layout of new infrastructure.

## References

1. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
2. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.



## Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY				
<b>Application type</b>				
Works approval	<input type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input type="checkbox"/>	Current works approval number:		
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L7815/2011/11	
		Relevant works approval number:		N/A <input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:		None <input type="checkbox"/>
Date application received		16/03/2021		
<b>Applicant and Premises details</b>				
Applicant name/s (full legal name/s)		Northern Star Resources Ltd		
Premises name		North Eastern Goldfields Operations		
Premises location		Mining tenements L36/155, L36/157, L36/158, L36/181, L36/193, L36/199, L36/202, L37/61, L37/73, L37/142, L37/166, L37/181, L37/199, L37/215, L37/216, M36/35, M36/421, M36/428, M36/462, M36/473, M36/494, M36/503, M36/504, M36/512, M36/525, M36/527, M36/541, M36/542, M36/582, M37/339, M37/340, M37/356, M37/357, M37/358, M37/359, M37/360, M37/361, M37/465, M37/367, M37/368, M37/437 and M36/599		
Local Government Authority		Shire of Leonora		
<b>Application documents</b>				
HPCM file reference number:		2012/006911-1~4		
Key application documents (additional to application form):		NSR -LET Mill Expansion Stage 1 Attachment 3A Attachments 2a – 2d		
<b>Scope of application/assessment</b>				

<p>Summary of proposed activities or changes to existing operations.</p>	<p><u>Licence amendment</u></p> <p>Northern Star Resources (NSR) is seeking a Licence Amendment to allow for the installation of a secondary crusher at the Thunderbox Mill to allow NSR to achieve the currently licenced throughput of 3mtpa.</p> <p>Chartered engineers have been engaged for the engineering design and construction management, with the work packages currently under tender. It is expected that these packages will be awarded within the next few weeks and mobilisation of the construction crews will commence shortly thereafter.</p> <p>As the site is moving to an ore blend with a higher fresh rock component the additional crusher is required for us to maintain throughput near the licenced 3mtpa. Without the secondary crusher the plant would only be milling at a rate of 2.4mtpa. The existing crushing circuit will be upgraded to a closed-circuit secondary crushing circuit with the addition of the following:</p> <ul style="list-style-type: none"> <li>- CH780 cone crusher</li> <li>- Double decked banana screen</li> <li>- Magnets and metals detectors</li> <li>- Conveyors as required to facilitate the installation</li> </ul> <p>The addition of this equipment will change the crushing process flow from a single stage open circuit to a two stage closed circuit, and is intended as a means of increasing the SAG mill throughput by reducing the ore feed size.</p> <p>The installation will tie in with the existing primary crusher and extend into existing laydown areas, within the approved mill disturbance footprint.</p>
--	---

**Category number/s (activities that cause the premises to become prescribed premises)**

**Table 1: Prescribed premises categories**

Prescribed premises category and description	Proposed changes to the production or design capacity (amendments only)
Category 5	Proposed – 3 Mtpa – no change to approved throughput.

**Legislative context and other approvals**

<p>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?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Referral decision No:  Managed under Part V <input type="checkbox"/>  Assessed under Part IV <input type="checkbox"/></p>
<p>Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Ministerial statement No:  EPA Report No:</p>

Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: Expiry date: If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CPS No: N/A 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"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Name: Goldfields Groundwater area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Regional office:
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to <a href="#">WQPN 25</a> )? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
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> )	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>Classification: N/A / possibly contaminated – investigation required (PC-IR)</p> <p>Classification on database for M36/542 is 'Report not substantiated'</p> <p>Date of classification: 22 August 2017</p>