



# Amendment Report

**Licence Number** L7815/2001/11

**Licence Holder** Saracen Metals Pty Ltd

**ACN** 107 154 727

**File Number:** 2012/006911-1

**Premises** 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

**Date of Report** 11/3/2020

**Decision** **Granted**

# 1. Definitions and interpretation

## Definitions

In this Amendment Report, the terms in Table 1 have the meanings defined.

**Table 1: Definitions**

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Amendment Report	refers to this document
Category/ Categories/ Cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer.  CEO for the purposes of notification means:  Director General Department Administering the Environmental Protection Act 1986 Locked Bag 10 JOONDALUP DC WA 6027 Email: <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
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>
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
Licence Holder	Saracen Metals Pty Ltd

<b>Term</b>	<b>Definition</b>
m <sup>3</sup>	cubic metres
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 Amendment Report applies, as specified at the front of this Amendment Report.
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act, with changes that correspond to the assessment outlined in this Amendment Report.
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>

## 2. Amendment Description

The Amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the Licence issued under the EP Act for a prescribed premises as set out below.

The amendment is limited only to an amendment for Category 6. No changes have been made to the other categories on the Existing Licence.

The following guidance statements have informed the assessment and decision outlined in this Amendment Report:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guideline: Decision Making (June 2019)*
- *Guidance Statement: Risk Assessment (February 2017)*

### 2.1. Purpose and scope of assessment

Saracean Metals Pty Ltd (Licence Holder) submitted an application to amend Licence L7815/2001/11 on 25 November 2019. The Licence Holder is seeking approval to construct and operate two new mine dewatering dams (containment infrastructure) at the North Eastern Goldfields Operations (NEG) which is located approximately 90km north of Leonora on the Weebo pastoral lease within the Shire of Leonora.

#### **Otto Bore Turkeys Nest**

A turkeys nest will need to be constructed to store water required for dust suppression and supply purposes at the Otto Bore operations. The dam will be constructed to the south of the Otto Bore pit, adjacent to the proposed administration/ workshop area approximately 500m from the pit shell (see Figure 1).

The dam will be 170m x 70m and built to a height of 3.5m using mine waste. The dam will be lined with a 0.75mm UV resistant PVC liner, and will have a high water shut of switch to prevent over topping. The dam will be fence to restrict access to larger fauna, and egress nets and ladders will be installed at each corner to allow smaller fauna to escape. A minimum freeboard level of 300mm will be maintained in the dam to ensure there is adequate capacity during significant rainfall events (this is in accordance with existing condition 1.3.3).

A pipeline will be constructed to transfer a mixture of fresh water from production bores and fresh water from put sumps to the Otto Bore Turkeys nest. Pipelines will be contained within v drains and bunds. No telemetry will be fitted due to the fresh quality of water being transported (<1000 mg/L total dissolved solids (TDS) and pH 6-9)

#### **New Thunderbox Mine Dewatering Dam**

The D Zone cut back at the Thunderbox pit will require the construction of a new raw water dam. The new dam will be constructed in an "L" shape to abut the existing raw water pond within the mill precinct, approximately 320m from the proposed pit shell (see Figure 2). The dam will be approximately 80m x 60m by 5m, constructed above ground level using mine waste, lined with a 0.75mm, UV resistant, PVC liner and will have a high water level shut off switch to prevent over topping. The turkeys nest will be fenced to restrict access to larger fauna. Fauna egress ladders will be installed at each corner of the turkeys nest for small fauna not restricted by the fence. Water from the turkeys nest will either be used for dust suppression or in the processing circuit. In the event of a significant rainfall event, the turkeys nest will have capacity to pump water back to the Thunderbox pits. The entire Thunderbox water pipeline system is connected through telemetry, controlled through the mill, with automatic shut offs that will be engaged should significant variation in flow be detected. New



pipelines constructed as a result of this amendment will be within v- drains. The quality of water being transported will be fresh <1000mg/L TDS and a pH value 6-9.

The construction of these two dams will not change the current approved throughput for Category 6.

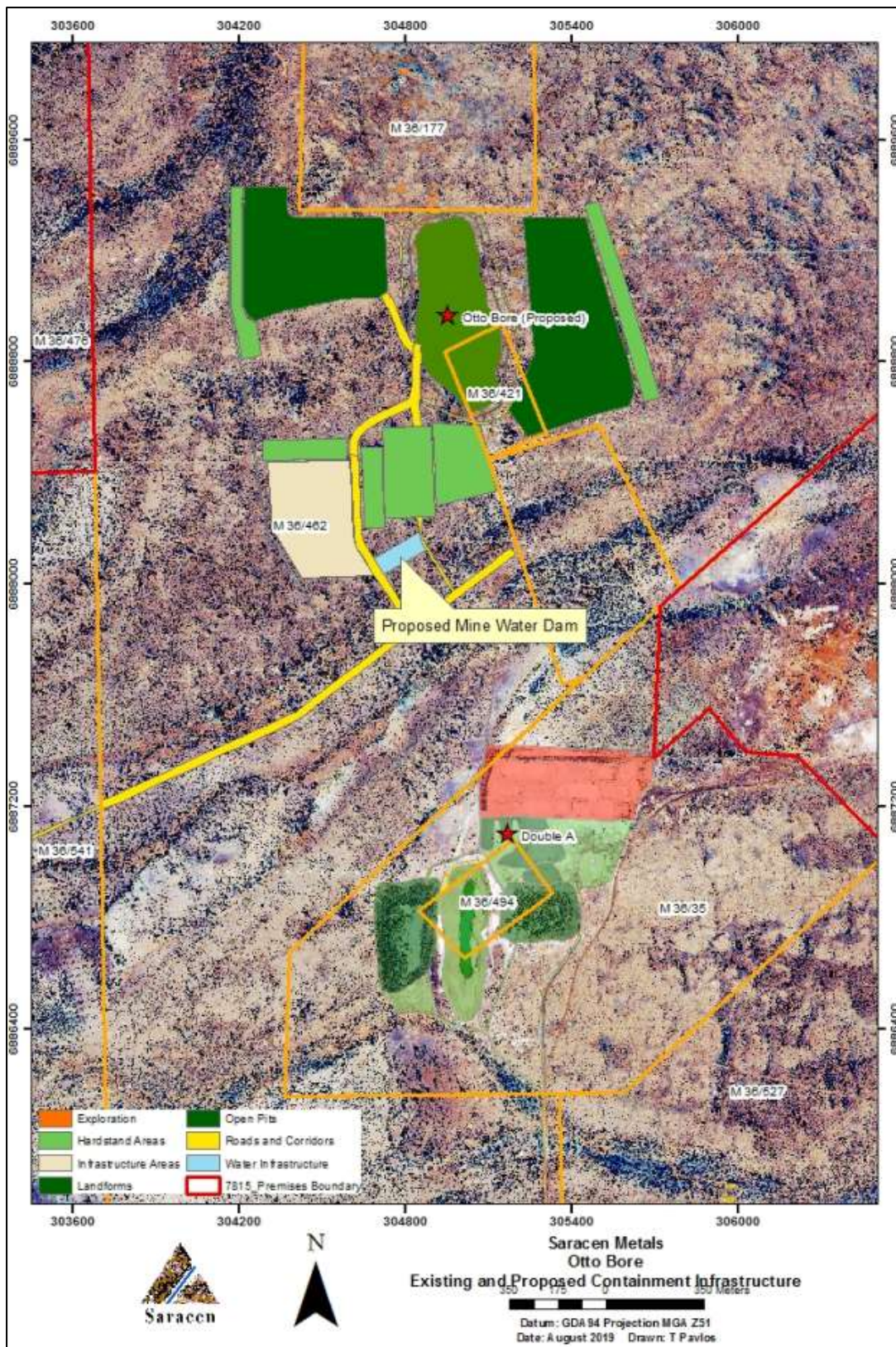


Figure 1: Location of proposed new mine water dam at Otto Bore.



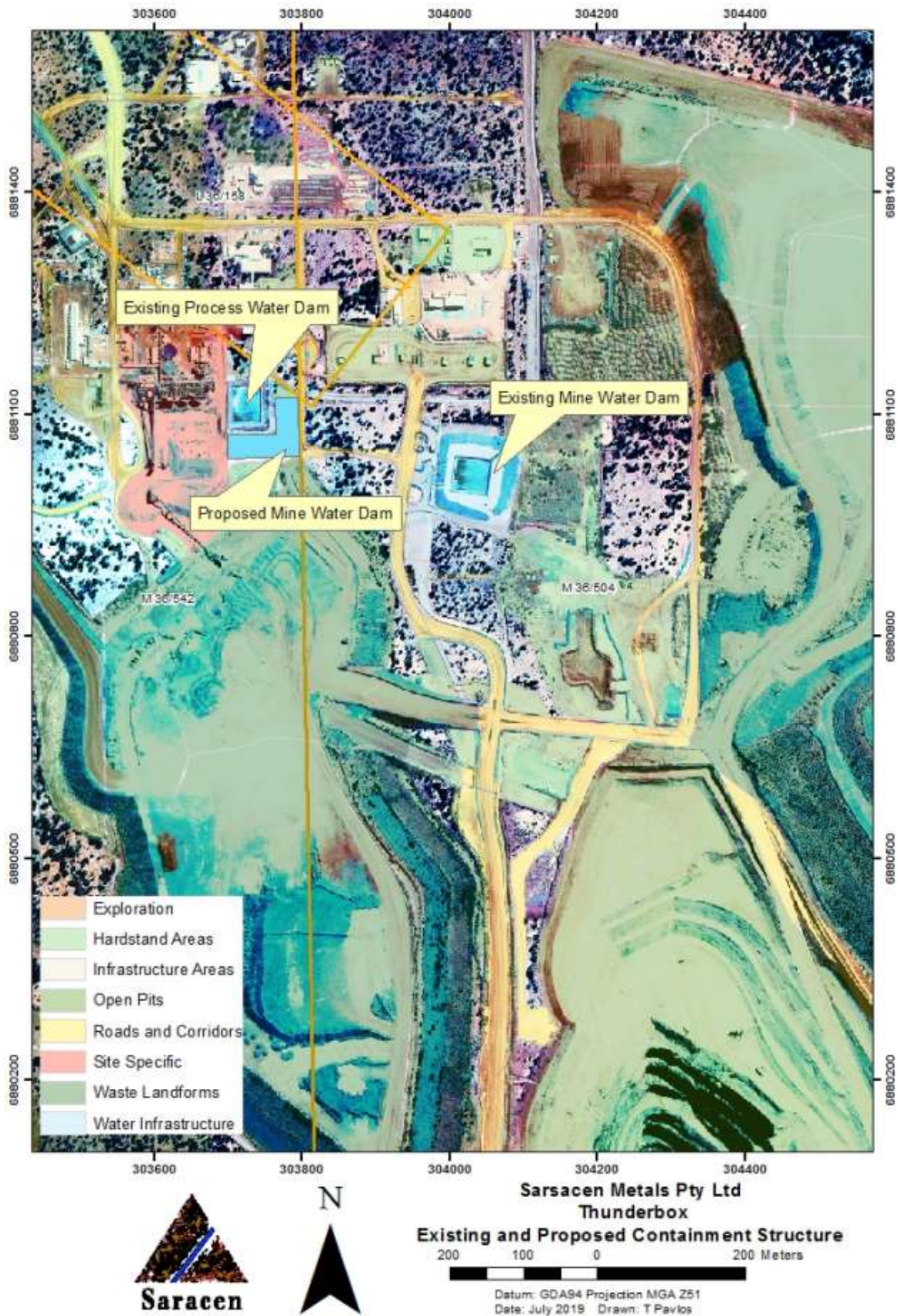


Figure 2: Location of the proposed new mine water dam at Thunderbox.

## 2.2. Consolidation of Licence

As part of this amendment package DWER has consolidated the licence by incorporating changes made under the following Amendment Notices:

- Amendment Notice 1, granted 31 October 2017 – Licence amendment to authorise construction of stage 6 embankment lift to TSF Cell A.
- Amendment Notice 2, granted 11 April 2018 – Licence amendment to authorise expansion of TSF Cell A and Cell B to abut the Eastern Waste Dump.
- Amendment Notice 3, granted 17 September 2018 - Licence amendment to increase category 5 to 3.0 mtpa and to include M36/177 within premises boundary.

The obligations of the Licence Holder have not changed in consolidating the licence. DWER has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 1 of the previous licence and advise the Licensee to obtain the form from the Department's website;
- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

Previously issued Amendment Notices will remain on the DWER website for future reference and will act a record of DWER's decision making.

## 3. Amendment history

Table 2 provides the amendment history for L7815/2001/11.

**Table 2: Licence amendments**

Instrument	Issued	Amendment
L7815/2001/11	29 January 2015	Licence amendment
L7815/2001/11	29 October 2015	Licence amendment to move out of care and maintenance, increasing throughput for category 5 to 2.6 Mtpa.
L7815/2001/11	4 April 2016	Licence amendment to add categories 64 and 85.
L7815/2001/11	11 November 2016	Licence amendment to add Bannockburn tenements and tenements for the connecting haul road and pipeline to Thunderbox as part of the North Eastern Goldfield Operations' Premises.  Removal of monitoring bore MB3. Correction to the power plant generators description.
L7815/2001/11	31 October 2017	Amendment Notice 1: Licence amendment to authorise construction of stage 6 embankment lift to TSF Cell A.
L7815/2001/11	11 April 2018	Amendment Notice 2: Licence amendment to authorise expansion of TSF Cell A and Cell B to abut the Eastern Waste Dump.
L7815/2001/11	17 September 2018	Amendment Notice 3: Licence amended to increase category 5 to 3.0 mtpa and to include M36/177 onto premises.

L7815/2001/11	This amendment	Consolidation of amendment notices and licence into one document.  Approval to construct and operate two new dewatering storage dams.
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## 4. Location and receptors

Table 3 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

### Table 3: Receptors and distance from activity boundary

There are no residences in close proximity to the premises. The closest town is Leonora, located 90km away. The closest major road is the Goldfields Highway, located at the premises boundary near the Thunderbox Project Area.

Table 4 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

### Table 4: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
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).

## 5. Risk assessment

Tables 5 and 6 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.



**Table 5: Risk assessment for proposed amendments during construction**

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Category 6 – Construction of two mine dewater storage dams	Dust	Air/windborne pathway causing impacts to health and amenity of closes human receptors	Water carts to be used if required to manage dust emissions	N/A	N/A	N/A	Minimal dust emissions are expected to be generated during construction activities.	N/A
	Noise	No residential receptors in the near vicinity.	None				The distance to residential receptors is considered to be too great for noise impacts from construction activities to occur. It is considered that a pathway for noise emissions to residential receptors does not exist.	
							The provisions of the <i>Environmental Protection (Noise) Regulations 1997</i> are applicable.	

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

**Table 6: Risk assessment for proposed amendments during operation**

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Category 6 - Operation of dewatering water storage dams.	Emission to land of dewatering water – overtopping of dams	Overtopping of dams leading to impacts to surrounding vegetation and soil.	<p>Both the Otto Bore Turkey’s Nest and the Thunderbox Mine Dewatering Dam will have a high water shut off switch to prevent overtopping.</p> <p>A freeboard of 300mm will be maintained on both dams.</p> <p>The new Thunderbox Mine Dewatering Dam will also have capacity to pump water back to the Thunderbox project pits in the event of a significant rainfall event.</p>	Slight	Unlikely	Low	<p>Water quality of groundwater to be stored in the dams is relatively fresh with a TDS of &lt;1000 mg/L; pH neutral to slightly alkaline (6 – 9) so the risk of this negatively impacting vegetation if it was to be released is low. Dams are also located within cleared mining areas so impacts to vegetation will be minimal.</p> <p>It is unlikely that this risk event will occur due to the Licence Holder’s controls.</p> <p>The risk rating for this event is therefore determined to be low.</p>	<p>Condition 1.3.2 will be updated to include both dams as containment infrastructure.</p> <p>Condition 1.3.5 will be updated to require inspection of embankment freeboard for containment infrastructure.</p>
	Emission to land – rupture or leak of pipeline from new Thunderbox Mine Dewatering Dam to processing plant and From production bores/pit sumps to Otto Bore dam.	<p>Rupture or leak of pipelines resulting in impacts (i.e. smothering) to vegetation.</p> <p>Water quality is &lt;1000 mg/L TDS and pH 6-9.</p>	<p>The Thunderbox water pipeline system is connected through telemetry, controlled through the mill, with automatic shut offs that will be engaged should significant variation in flow be detected.</p> <p>All pipelines will be banded in v drains.</p>	Slight	Unlikely	Low	<p>Water quality of groundwater to be stored in the dams is relatively fresh with a TDS of &lt;1000 mg/L; pH neutral to slightly alkaline (6-9) so the risk of this negatively impacting vegetation if it was to be released is low. Pipelines are also located within a cleared mining area so impacts to vegetation will be minimal.</p> <p>It is unlikely that this risk event</p>	<p>Condition 1.3.2 will be updated to include both dams as containment infrastructure.</p> <p>Condition 1.3.5 will be updated to require inspection of embankment freeboard for containment infrastructure.</p>

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
							<p>will occur due to the Licence Holder's controls.</p> <p>The risk rating for this event is therefore determined to be low.</p>	

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)



## 6. Consultation

**Table 7: Summary of consultation**

Method	Comments received	DWER response
Applicant referred draft documents 27/02/2020	<p>Condition 1.3.2 Table 1.3.1 Has Bannockburn Mine Water Dam twice.</p> <p>Could the attached BB_Project Infrastructure map replace Figure 3</p> <p>Could the attached TBO_Landfill map replace Figure 7</p> <p>Also, we have changed the dimensions of the proposed Thunderbox mine water dam 2 to 60m x 80m. Same area and all the same controls etc. will remain in place.</p>	Administrative changes requested have been made to the final document.

## 7. Conclusion

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

### 7.1. Summary of amendments

Table 8 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 8: Changes made to licence conditions as a result of this amendment**

Condition No.	Proposed amendments
-	<p>Administrative changes</p> <ul style="list-style-type: none"> <li>- Definitions have been updated</li> <li>- The term Licensee has been replaced with Licence Holder throughout the licence document</li> <li>- Reference to DER has been replaced with DWER</li> </ul>
1.3.2	TSF cells 1, 2 and 3 at the Bannockburn Operations have been added to condition 1.3.2 as containment infrastructure. This TSF has not been in use since the late 90's and is currently decommissioned.
1.3.2	Mine dewatering dam 2 – thunderbox and Mine dewatering dam – Otto Bore were added to condition 1.3.2 as containment infrastructure. Naming of some infrastructure updated for clarity.
1.3.5	Condition updated to clarify that inspections for freeboard are required on all containment infrastructure.

1.3.11	Condition updated to include the construction of both dams. All other infrastructure removed from table as construction has been complete and compliance documentation submitted and approved.
1.3.16	<p><i>'1.3.16 Within 3 months of the issued of this amendment, the Licensee must submit a plan to the CEO to reduce the soluble arsenic concentrations in the tailings supernatant to 0.1mg/L, the ANZECC (2000) livestock drinking water trigger value; or propose an alternative trigger value, with justification as to the alternative value's acceptability'</i></p> <p>Condition has been deleted as the plan required by this condition has been submitted and therefore requirements have been met. However negotiations are still ongoing regarding the appropriate trigger value to use for arsenic within the tailings supernatant.</p>
Schedule 1	Maps updated.
Schedule 2	Has been added. Categories and their thresholds moved from front page of licence to Schedule 2.
Schedule 3	Schedule 3 has been added.

**Tim Gentle**  
**Manager – Resource Industries**

*An officer delegated by the CEO under section 20 of the EP Act*

## Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence amendment application, including supplementary information, 25/11/2019.	Application	DWER records (DWERDT227647)
2	Additional information received via email on 23/01/2020, Tim Pavlos.		DWER records (A1863260)
3	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>
4	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.		
5	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.		
6	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.		