Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L9190/2019/2
Licence Holder	Evolution Mining Limited
ACN	084 669 036
File Number	DER2019/000056
Premises	Kundana Gold Mine Mining tenements M16/72, M16/73, M16/87, M16/97, M16/157, M16/308, M16/309, M15/669, M15/993, M16/428, M24/924, L16/39, L16/105 and L16/106 As defined by the Premises maps attached to the Revised Licence
Date of Report	19 December 2024
Decision	Revised licence granted

Lauren Edmands

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A/SENIOR MANAGER, RESOURCE INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L9190/2019/2 is held by Evolution Mining Limited (Licence Holder) for the Kundana Gold Mine (the Premises), located 20 km west of Kalgoorlie-Boulder in 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 L9190/2019/2 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 17 September 2024, the Licence Holder submitted an application to the department to amend Licence L9190/2019/2 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The Licence Holder is seeking authorisation to use saline dewatering effluent for mineral ore processing and other mining purposes. Currently, mine dewater is pumped to the authorised discharge point at White Flag Lake, a regional salt lake. The Licence Holder proposes to re-route some of this water to the Mungari Processing plant, utilising existing pipelines and minor configuration changes.

This amendment is limited only to changes to Category 6 activities from the Existing Licence.

The Munagri Processing Plant is located at an adjacent premises called the Mungari Gold Project, which is held by Evolution Mining (Mungari) Pty Ltd, and operates under licence L7750/2001/10. A works approval was issued in August 2023 to expand the Mungari Processing Plant. This licence amendment will facilitate the water supply for the approved expansion.

The existing Pope John pipeline currently transfers water from Mungari Gold Project, across the premises boundary, to the Kundana Transfer Dam, located within Kundana Gold Mine premises. This pipeline will be utilised to transfer water back from the Kundana Transfer Dam to the Mungari Gold Project.

The existing White Flag Lake pipeline transfer pumps, currently supplying water from Kundana Transfer Dam to White Flag Lake, will be used for supply to the Mungari Gold Project via the Pope John Pipeline. Minor pipework modifications to connect the Pope John pipeline transfer pumps will be undertaken to facilitate the proposed amendment. Figure 1 shows the locations of minor changes to the pipelines.

As part of this assessment, the Delegated Officer has determined to convert the licence into the latest template version. This is administrative in nature.

Figure 1: Pipeline modifications between Pope John Pipeline to the White Flag Lake transfer pumps

The water will be dewatered from open pits and underground operations at Kunanda Gold Mine, then pumped via existing pipeline networks towards Pope John pit before being sent to the Kundana Transfer Dam.

At a target processing throughput of 4.2 million tonnes per annum, the expanded processing plant estimated water requirements will be 86 L/s (2,700,000 kL/year), redirecting approximately 1,800,000 kL from White Flag Lake per year. This estimate is highly variable due to numerous factors such as mill throughput, groundwater recharge, rainfall, evaporation, ore type etc.

Discharge Location	Current (kL/year)	Proposed Estimate (kL/year)	Difference (kL/year)
Mungari Mill	900,000	~2,700,000	+1,800,000
White Flag Lake	2,800,000	~1,000,000	-1,800,000

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 operation which have been considered in this Amendment Report are detailed in Table 3 below. Table 3 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 3: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Hypersaline water	Storage of mine dewater in Kundana Transfer Mine	Direct path via seepage through base of transfer dam	The dam is lined with a high-density polyethylene (HDPE) liner.
	Storage of mine dewater in Kundana Transfer Mine	Overtopping of transfer dam	No proposed controls. No existing conditions.
	Mine dewater from various pits across the site	Pipeline leak or rupture	Existing pipeline controls are: • All pipelines containing mine dewatering are either equipped with automatic cut-outs in the event of a pipe failure or provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections. • Flow meters on dewatering lines. • HDPE pipelines meet required standards. • In the event of a spill, the Spill Management procedure will be followed. • Minimum daily inspections of pipeline integrity. • Operations managed in accordance with Saline Water Management Procedure.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), 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.

There are no human receptors within 15km of the premises, therefore it is unlikely that human receptors will be impacted by the proposal. Human receptors are therefore not discussed further.

Table 4 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 4: Sensitive environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Native vegetation consisting of: • Mixed Eucalyptus Woodlands over sclerophyll shrublands • Chenopod shrublands; and • Acacia open shrublands No TECs or PECs have been recorded in the area	Within the vicinity of the premises.
Potential significant fauna species: • Grey Falcon (threatened) • Malllefowl (threatened) • Peregrine Falcon	Within the vicinity of the premises.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) 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 5.

The Revised Licence L9190/2019/2 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. dewatering activities.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5. Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation								
Dewatering: mine dewater transported via pipeline back to the Kundana Transfer Dam prior to use in the Mungari Mill	Hypersaline mine dewater	**Pathway:** Direct discharge to land from rupture/spill of dewatering pipeline. **Impact:** Adverse impact to soils and native vegetation from waterlogging with hypersaline water	Surrounding native vegetation including fauna habitats	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Existing conditions: 1.3.4 – Pipeline inspections 1.3.9 – Infrastructure requirements	The existing pipeline network is already managed through Licence Holder controls. The slight configuration change, and re-routing of water does not change the risk rating.
		Pathway: Direct discharge to land from overtopping of the transfer dam. **Impact:** Adverse impact to soils and native vegetation from waterlogging with hypersaline water	Surrounding native vegetation including fauna habitats	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	N	Condition 1.3.4 Condition 1.3.9	The licence did not include the Kundana Transfer Dam in the Infrastructure Requirements and inspections, so conditions have been added to the licence to ensure minimum freeboard is maintained to avoid overtopping.
		Pathway: Direct discharge to land and groundwater from seepage through base of transfer dam. **Impact:** Adverse impact to soils and native vegetation from waterlogging with hypersaline water	Surrounding native vegetation including fauna habitats	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	N/A	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).

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

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 16 December 2024	The Licence Holder requested confirmation that the licence amendment will allow Evolution to use saline dewatering effluent from Kundana Transfer Dam to the processing circuit and requested whether the processing plant should be listed in the condition as an emission point.	As the processing plant is not within this prescribed premises, it can't be listed in the condition as an emission point. The amendment has risk assessed the configuration change to the pipework. L7750/2001/10 is where the processing plant is located, and that licence includes conditions permitting saline dewater to be used in the processing plant.

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 7 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 7: Summary of licence amendments

Condition no.	Proposed amendments
1.3.4	Adding Kundana Transfer Dam to table 1.3.1: Inspection of infrastructure to inspect for freeboard and visual integrity
1.3.9	Addition of Kundana Transfer Dam to Table 1.3.6: Infrastructure Requirements to ensure freeboard is kept at a minimum 300 mm.

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. Evolution Mining Mungari, 2024, *Re: L9190/2019/2 Licence Amendment,* Kalgoorlie, Western Australia.