



Amendment Notice 2

Licence Number	L9099/2017/1
Licence Holder	Kundana Gold Pty Ltd
ACN	099 643 252
File Number:	DER2017/001616
Premises	M16/548 Carbine/Paradigm Project Area Mount Burges Shire of Coolgardie
Date of Amendment	28 March 2019

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Timothy Gentle

Manager- Resource Industries

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

Definitions and interpretation

Definitions

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

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
Amendment Notice	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 <i>Environmental Protection Act 1986</i> Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au
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
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
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
kL	kilolitres
Licence Holder	Kundana Gold Pty Ltd

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.
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i>
Risk Event	as described in <i>Guidance Statement: Risk Assessment</i>
mg/L	milligrams per litre

Amendment Notice

This 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. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment for Category 6.

The following guidance statements have informed the decision made on this amendment

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016).*

Amendment description

On 8 October 2018 Kundana submitted an application to discharge mine dewater into the nearby Phantom pit to provide additional water storage for current and future operations. To enable this the following activities are proposed:

- Install a T-piece with isolation valves at the Carbine pit end of the existing dewatering pipeline; and
- Install/ join pipework from the T-piece to Phantom pit
- Amend the annual period and subsequent reporting deadlines of L9099/2017/1 to provide consistency between the operating Licences for Northern Star's Kalgoorlie Operations. Kundana Gold is a wholly owned subsidiary of Northern Star. The proposed new Annual Period and reporting deadlines are as follows:
 - 1) Annual period: Inclusive period from 1 January to 31 December in a calendar year; (currently 1 December to 30 November)
 - 2) Reporting deadlines: within 90 calendar days after the end of the annual period.

Table 2 below outlines the proposed changes to the Licence.

Table 2: Proposed design changes

Category	Current design capacity	Description of proposed amendment
6	1,500,000 kL	Approximately 1800m of 250mm HDPE welded pipeline will be installed to join Phantom pit to the existing dewatering pipeline at the Carbine pit end. The Phantom leg of the pipeline will be connected to the existing pipeline using a T-piece. Isolation valves will be fitted to allow flow to be diverted to either pit. A flow meter will be installed at the Phantom discharge end and the existing leak detection system will be extended to incorporate the pipeline. Earthen v- drain bunding will be cut with a grader along the pipeline route.

Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 3.

Table 3: Relevant approvals

Legislation	Number	Approval
<i>Rights in Water and Irrigation Act 1914 (RIWI Act)</i>	GWL 104053(8)	Abstraction of up to 1,500,000 kL of groundwater for 'dewatering for mining purposes' and dust suppression from the Paradigm pit.
	CAW 200981(1)	Licence to Construct or Alter Well, 26/02/2018
<i>Mining Act 1978</i>	NOI 1658, Reg ID 15060	Carbine Project (1994)
	NOI 3777, Reg ID 17164	Paradigm Open Cut Project (2001)
	NOI 4354, Reg ID 17741	Paradigm Underground Project (2003)
	Mining Proposal Reg ID 73908	Approved 14/5/2018 to undertake minor clearing and establish the dewatering bores, associated pumping infrastructure and spur lines.

Amendment history

Table 4 provides the amendment history for L9099/2017/1.

Table 4: Licence amendments

Instrument	Issued	Amendment
L9099/2017/1	20/12/2017	New Licence for dewatering Paradigm Pit discharging in Carbine pit
L9099/2017/1	29/6/2018	Amendment Notice 1 for additional discharge pipeline (no new discharge point)
L9099/2017/1	This amendment notice	Amendment Notice 2 for discharging mine dewater into the nearby Phantom pit to provide additional water storage for current and future operations

Location and receptors

The premises is located within the Shire of Coolgardie, and is 60km northwest of the City of Kalgoorlie-Boulder and 17km southeast of Ora Banda. Table 5 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Environmental receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Department of Biodiversity Conservation and Attractions Lands and Waters- Rowles Lagoon Conservation Park and Clear and Muddy Waters Nature Reserve (conservation of Flora and Fauna)	8km northwest of the pits and dewatering pipelines

Surface water

There is no significant drainage system within or near the project area. The project area consists of gently undulating plain.

Groundwater

Groundwater is saline to hypersaline with Total Dissolved Solids concentrations up to 90,000 milligrams per litre (mg/L). Groundwater is approximately 40m below ground level (mbgl) (from the application).

Samples from the Paradigm pit lake in May and September 2017 recorded average TDS of 82,050 mg/L and average pH of 7.37 (from the application).

Risk assessment

Tables 6 and 7 below describes 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 6: Risk assessment for proposed amendment during construction

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Category 6: Dewatering- additional pipeline	Dust: associated with construction activities of the new pipeline	Nearby residents: The Carbine/Paradigm project is isolated with the closest community being Ora Banda located 17km northwest of the project	Air: Particulate matter (fugitive dust)	Amenity impacts	N/A	N/A	N/A	The Delegated Officer considers there is no credible risk due to the distance to the nearest sensitive receptor.
	Noise: associated with construction activities of the new pipeline		Air: noise generated by the operation of equipment during construction	Amenity impacts	N/A	N/A	N/A	The Delegated Officer considers there is no credible risk due to the distance to the nearest sensitive receptor.

Table 7: Risk assessment for proposed amendment during operation

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning	
Source/Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts					
Category 6: Dewatering-additional pipeline	Discharge to Phantom pit	Dewater sourced from groundwater bores combined with dewater sourced from Carbine pit.	The dewater is of similar salinity to the groundwater (saline to hypersaline).	Movement of pit lake water through Phantom pit to groundwater.	Contamination of groundwater.	N/A	N/A.	N/A	Groundwater is hypersaline and of no beneficial use apart from dust suppression purposes. Risk remains the same and no regulatory controls required.
		Mounding of hypersaline groundwater at Phantom pit.	Surrounding native vegetation.	Lateral movement of pit lake water through Phantom pit walls.	Contamination of soil. Decline/death of vegetation via hypersaline water uptake from roots.	Minor Low level on site impact.	Unlikely The risk event will probably not occur.	Medium	Risk remains the same. <u>Applicant and Regulatory controls</u> <ul style="list-style-type: none"> Condition 2 requires water level maintained at least 6m below crest level.
		Overtopping of Phantom pit with hypersaline water.	Native vegetation adjacent to the pit.	Direct discharge to land.	Contaminated soil. Decline/death of vegetation due to inundation.	Minor Low level on site impact.	Unlikely The risk event will probably no occur.	Medium	<ul style="list-style-type: none"> Condition 3 requires monitoring of volume, freeboard and water quality (pH and Total Dissolved Solids).
	New dewatering pipeline	Rupture of pipeline-hypersaline discharge.	Native vegetation adjacent to the pipeline.	Direct discharge to land.	Contaminated soil. Decline/death of vegetation due to	Moderate Onsite impacts: mid-level	Possible The risk event could occur at some time	Medium	<u>Applicant controls</u> <ul style="list-style-type: none"> Welded 250mm HDPE contained within an earthen bunded

					inundation.	<p>Offsite impacts local scale: low level</p> <p>Offsite impacts wider scale: minimal</p>			<p>v-drain</p> <ul style="list-style-type: none"> • Isolation valves • Existing leak detection system will be expanded to incorporate new pipeline. • New pipeline and associated infrastructure will be accommodated into the existing visual inspection regime. <p><u>Regulatory controls</u> Risk remains the same. The Applicant's controls are conditioned in the existing Licence. Additional requirement added for daily visual inspections of pipeline whenever active pumping (dewatering) is taking place consistent with requirements for other similar operations.</p>
--	--	--	--	--	-------------	---	--	--	---

Decision

As outlined in Table 6 the risks of dewatering with the additional dewater spur line remains the same. Licence Holder's controls for the additional dewater lines are conditioned on the existing Licence. The Delegated Officer has determined that:

- Condition 2 Table 3: Infrastructure and equipment controls is amended to clarify the location and source of dewatering pipelines.
- Schedule 1: Maps Site plan map is amended to include the additional line.
- The annual reporting period is amended from 1 December to 30 November to 1 January to 31 December; and
- The reporting deadline is amended to within 90 days after the end of the annual reporting period.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 27 February 2019. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. Table 1 Definitions. In this Licence, the terms in Table 1 have the meanings defined. The definition of Annual Period is amended by deletion of the text shown in strikethrough below and the insertion of the bold text shown in underline below:

Annual period: ~~means a 12 month period commencing from 1 December until 30 November~~ **means a 12 month period commencing from 1 January to 31 December.**

2. Condition 2 is amended by the insertion of the red text in underline below:

2.1 The Licence Holder must ensure that the infrastructure and equipment specified in Column 1 of Table 3 is maintained in good working order and operated in accordance with the requirements specified in Column 2 of Table 3.

Column 1	Column 2
Site infrastructure and equipment	Operational requirements
Carbine Pit	A minimum vertical freeboard of 6 metres must be maintained below the lowest crest level at all times.
<u>Phantom Pit</u>	Must be inspected monthly (whilst operating) for freeboard capacity. A written log is required to be maintained for each inspection, <u>with each inspection record signed by the person who carried out the inspection.</u>

Column 1	Column 2
Site infrastructure and equipment	Operational requirements
HDPE <u>Dewater</u> pipeline	<p><u>HDPE</u></p> <p>Contained within an earthen bunded v-drain with three scour pits located at low points to act as a collection sump for spills.</p> <p>Flow meter installed at the dewater discharge point.</p> <p>Equipped with leak detection <u>and isolation valves</u> between two flow meters located at each end of the pipeline.</p> <p>Leak detection with auto shutdown.</p> <p><u>Daily</u> visual inspection of pipelines and pumping infrastructure <u>whenever active pumping (dewatering) is taking place. A written log of all inspections is required to be maintained with each inspection record signed by the person who carried out the inspection.</u></p> <p><u>Located as depicted in Schedule 1: Site plan map.</u></p>

3. Condition 6 of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

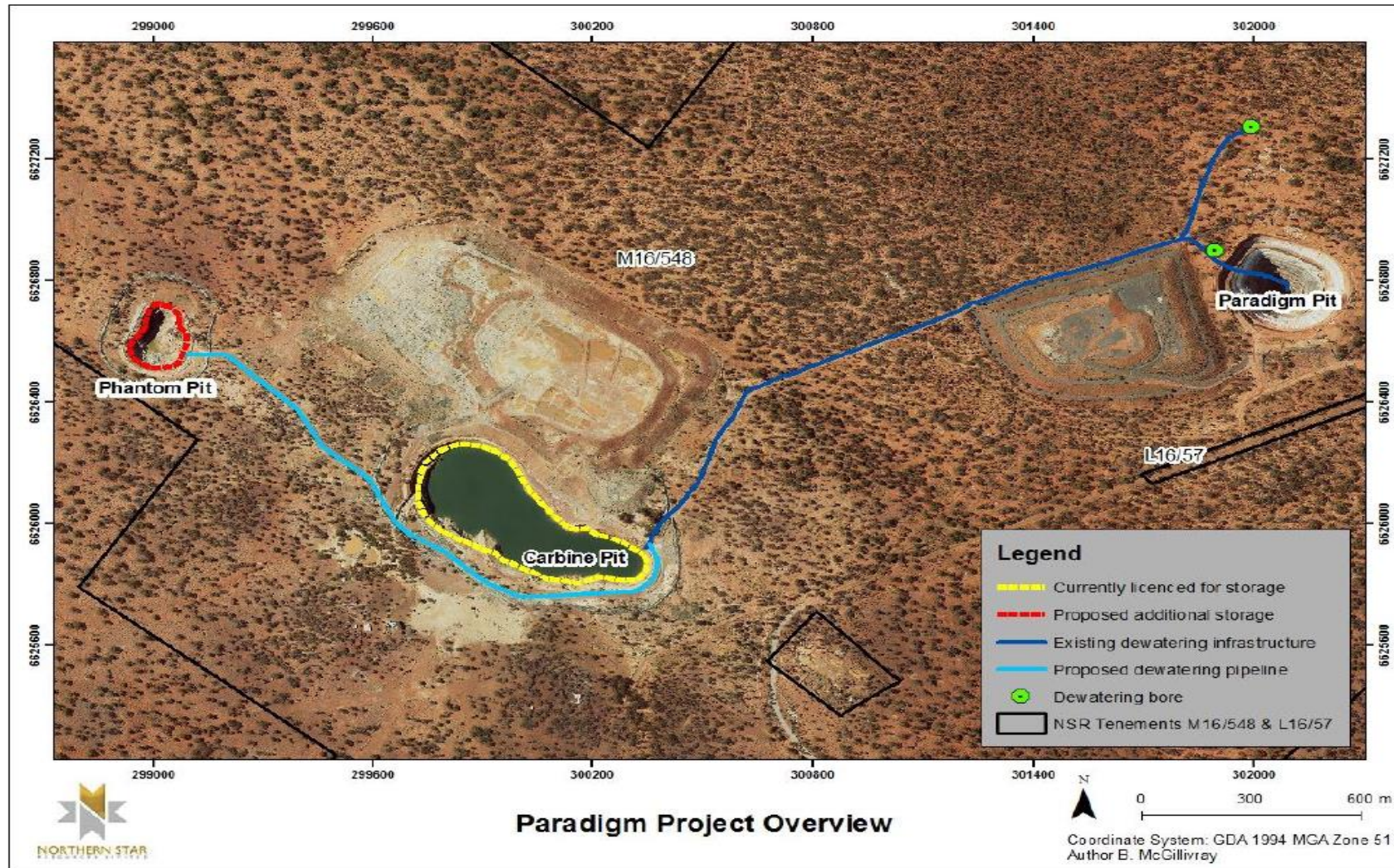
3.1 The Licence Holder must submit to the CEO, no later than ~~31 January~~, 31 March a Compliance Report indicating the extent to which the Licence Holder has complied with the conditions in this Licence for the preceding Annual Period.

4. Condition 7 of the Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

4.1 The Licence Holder must submit to the CEO, no later than ~~31 January~~ 31 March, a Monitoring Report detailing the results to monitoring undertaken in accordance with Condition 3 in this Licence for the preceding Annual Period. The report shall include a comparison of results against previous results.

5. The Licence is amended by the deletion of the Site plan map and the insertion of the Site Plan map shown below:

Schedule 1: Site plan map



Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L9099/2017/1- Carbine/Paradigm Project Area	L9099/2017/1	Accessed at www.dwer.wa.gov.au
2	Application Form dated 8/10/18 and supporting document <i>Kundana Gold Pty Ltd Licence Amendment Supporting Document- Paradigm Dewatering to Phantom Pit Carbine/Paradigm Project Area</i>	Application	DWER records (A1726821)
3	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.		Accessed at www.dwer.wa.gov.au
4	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.		
5	DER, February 2017. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.		
6	DER, February 2017. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.		
7	DER, November 2016. <i>Guidance Statement; Environmental Siting</i> . Department of Environment Regulation, Perth.		

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Notice on 27 February 2019 for review and comment. The Licence Holder responded on 1 March 2019. The following comments were received on the draft Amendment Notice.

Condition	Summary of Licence Holder comment	DWER response
2	Inspections should be changed back to weekly as per existing Licence conditions. NSR feels that weekly inspections are adequate and appropriate to manage what we deem to be a minor/moderate risk given the controls in place- pipelines laid within an earthen bunded v-drain and existing leak detection installed. Should active mining operations including increased dewatering commence at the Paradigm-Carbine Project area daily visual inspections would be warranted, however the Project as it stands is only maintaining a small pit water level with a steady volume.	The condition has been amended to require daily inspections whenever active pumping (dewatering) is taking place.