



Application for Licence Amendment

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

Licence Number	L9155/2018/1
Licence Holder	Avoca Mining Pty Ltd
ACN	108 547 217
File Number	DER2018/001153
Premises	Higginsville Gold Project HIGGINSVILLE, WA, 6443 Mining Tenements M15/351, M15/289, M15/225, M15/642, M15/348, M15/31, M15/786, M15/506, M15/507, M15/620, M15/629, M15/639, M15/640, M15/580, M15/581, M15/597, L15/225, L15/288, L15/302, G15/19, G15/23, M15/528, M15/231, M15/748, M15/512, M15/352, M15/610, M15/375, M15/338, M15/1790, M15/1814, L15/282, L15/347, G15/26, G15/27, G15/29, L15/382, L15/389, M15/325, M15/681, M15/817 and L15/298.
Date of Report	22 September 2023
Decision	Revised licence granted

**A/Manager, Resource Industries
REGULATORY SERVICES**

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

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Figure 1: Layout of Pioneer open pit operation

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1. Decision summary

Licence L9155/2018/1 is held by Avoca Mining Pty Ltd (Licence Holder) for the Higginsville Gold Project (the premises), located on mining tenements M15/351, M15/289, M15/225, M15/642, M15/348, M15/31, M15/786, M15/506, M15/507, M15/620, M15/629, M15/639, M15/640, M15/580, M15/581, M15/597, L15/225, L15/288, L15/302, G15/19, G15/23, M15/528, M15/231, M15/748, M15/512, M15/352, M15/610, M15/375, M15/338, M15/1790, M15/1814, L15/282, L15/347, G15/26, G15/27, G15/29, L15/382, L15/389, M15/325, M15/681, M15/817 and L15/298 within the Eastern Goldfields region.

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 L9155/2018/1 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 Premises description

Higginsville Gold Operations is located 125 kms south of Kalgoorlie, within the Eastern Goldfields region. The site includes multiple open pit and underground mining operations, with all ore processed at the Higginsville processing plant. Ore processing involves standard crush, grind, gravity and carbon-in-leach (CIL) circuits with a throughput of approximately 1.5 million tonnes per annum (Mtpa).

The site has a paddock-style tailings storage facility (TSF) and three in-pit TSFs (Aphrodite, Fairplay East and Vine in-pit TSFs). Hypersaline mine dewater from underground mining is pumped to the processing plant for use, or discharged to disused open pits or to adjacent salt lakes. The site is also licensed for sewage and landfill facilities.

2.3 Application summary

On 9 February 2023, the licence holder submitted an application to the department to amend Licence L9155/2018/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). This amendment will cover multiple aspects of the operation, as outlined below. This amendment does not require an increase in the throughput of any of the categories on the licence as the rate of processing is not being increased. A minimal amount of clearing will be required for these projects, which will be managed under existing clearing permit CPS 8152/3 and through Department of Mines, Industry Regulation and Safety (DMIRS) approvals under the *Mining Act 1978*.

2.3.1 Pioneer Open Pit

The licence holder is seeking to create a new open pit mine within the premises boundary, the Pioneer open pit (refer to Figure 1). The applicant is requesting to construct new dewatering infrastructure for this pit, including pipelines, earthen bunding, and an 80m by 80m, HDPE-lined turkey's nest to contain the mine water. The turkey's nest will be located adjacent to the new pit. Excess mine water will be transferred about 10kms north to the Aphrodite East pit (an existing dewatering discharge point authorised on the licence), which is then used as a source of water for the processing plant.

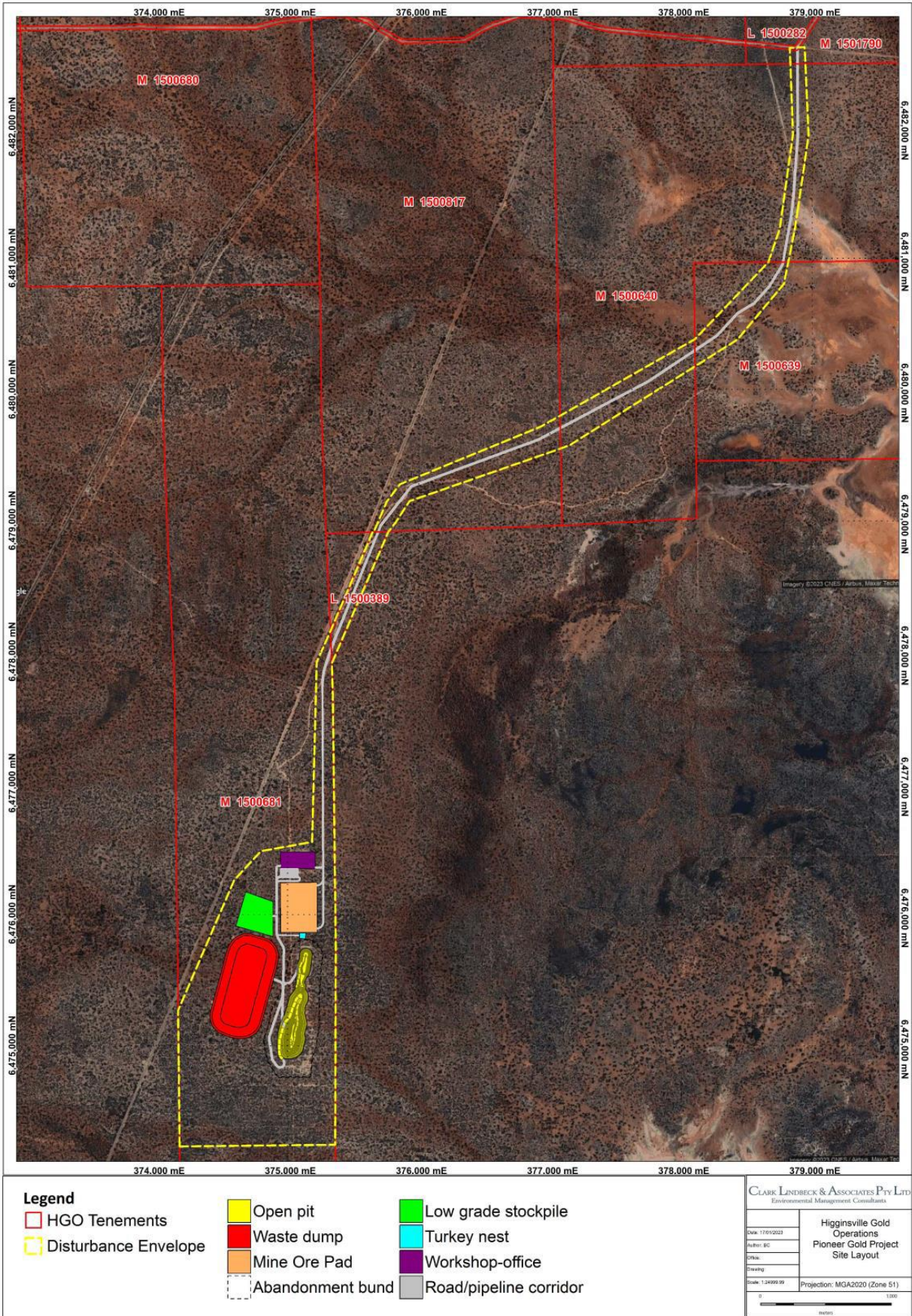


Figure 1: Layout of Pioneer open pit operation

Under the licence the water from Aphrodite East pit is not permitted to be discharged to surface water but may be transferred to Poseidon North pit or used in the processing plant. Water from the Poseidon North pit is not permitted to be discharged to surface water or any other groundwater discharge point and may only be transferred to the processing plant via HDPE-lined process water ponds.

Recent sampling of the Aphrodite East pit lake shows that it has a pH between 6 and 8, and a salinity of around 200,000mg/L total dissolved solids (TDS). Ambient monitoring around the pit is variable, with TDS recorded between 35,000 and 57,000mg/L, and the pH ranging between 3 and 7. This data suggests that this location is currently acting as a groundwater sink.

In comparison, the groundwater samples from the Pioneer open pit area have returned TDS measurements of around 42,000mg/L (comparable to the groundwater around the Aphrodite East pit) with a pH of about 3.5 (acidic).

2.3.2 Chalice Borefield

The licence holder also plans to recommission four production bores from the Chalice borefield to the south of the Chalice open pit (refer to Figure 2). The bores will be constructed/recommissioned in accordance with CAW207251(1) – Licence to Construct or Alter a Well, which has already been granted under the *Rights in Water and Irrigation Act, 1914* (RIWI Act).

The amendment to the premises licence will concern the construction of an 80m by 80m, HDPE-lined turkey’s nest adjacent to the pit, the construction of the pipeline and earthen bunding from the borefield to the turkey’s nest, and the discharge of borefield water to the turkey’s nest or the Aphrodite East pit.

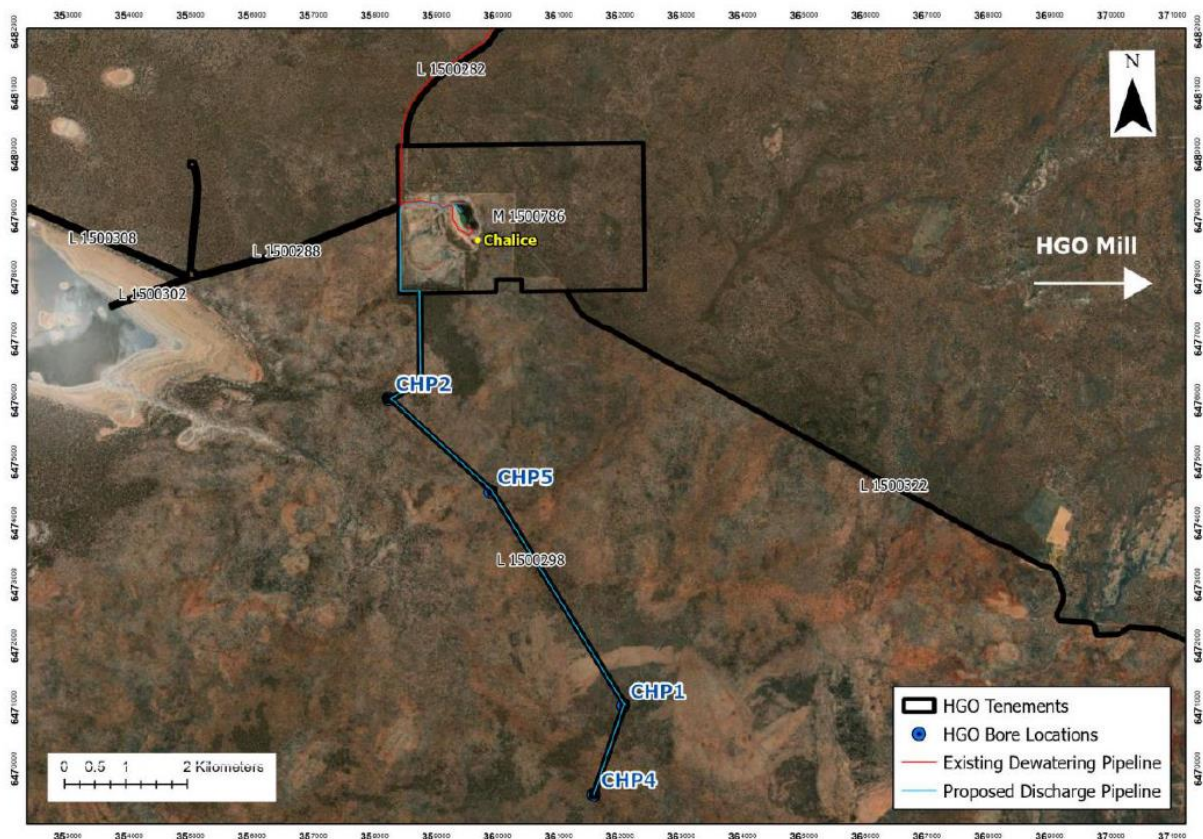


Figure 2: Layout of Chalice borefield and pit

Chalice pit is not currently being mined and the dewatering of this pit provides one of the primary sources of water for the processing plant either directly, or through the interim transfer

of water to the Aphrodite East pit. Water is currently being drawn from this location in excess of the natural inflows of groundwater to this location, so the licence holder intends to use water from the Chalice borefield to supplement its water supply to the processing plant.

Samples taken from the Chalice borefield show that the salinity ranges between 46,000 and 136,000mg/L TDS, and the pH is between 3 and 4 (acidic). This is materially different from the water that is currently being drawn from the Chalice open pit. The pH of the water in the Chalice pit is neutral at 6 to 8, and has a salinity of about 200,000mg/L. Under the current licence, water from the Chalice open pit is authorised to be discharged to Aphrodite East pit, Poseidon North pit or discharged to the salt lake, Chalice West Lake.

As the licence holder does not currently have studies showing how the chemistry of the borefield water could impact potential surface water bodies (such as Chalice West Lake), they intend to only deposit this water in the HDPE-lined turkey's nest adjacent to Chalice pit or to the Aphrodite East pit (which does not discharge to any surface water bodies), before being transferred to the processing plant.

As this is an activity that is directly associated with category 5 (the processing of ore), it will be included on the amended licence, which will require the addition of tenement L15/298 to the premises. The licence holder has submitted proof of occupier status for this tenement.

2.3.3 Other Amendments

The licence holder is also seeking to have water from the vehicle washdown bay included as a source of water that is permitted to be discharged to the Poseidon North pit. The washdown bay utilises potable water and the waste stream passes through an oil/water separator before discharge. The volume of water passing through the washdown bay is estimated to be between 3,000 and 4,000kL per year, while Poseidon North pit typically accepts over 60,000kL per year from dewatering sources.

During the assessment of this application, it became evident that a dewatering discharge point that the licence holder has been using for some time, the Fairplay North pit, is not listed on the licence. Inconsistencies around the sources of water being discharged to the listed discharge points were also noted. It is unclear whether these were administrative oversights, or if these activities have not previously been risk assessed. The Delegated Officer has decided to review and risk assess the discharge of mine dewater from the underground mines to the Fairplay North pit during this amendment process as sufficient information has been provided in this application, and will amend the licence accordingly.

The Fairplay North pit has a pit lake with a pH of 6 to 8, and the salinity has been measured between 44,000 and 111,000mg/L TDS. Water from the Fairplay North pit is used as a source of water for the processing plant and is not permitted to be discharged to surface water locations or other groundwater discharge locations. The Fairplay North pit receives water from the nearby underground mines, which have a pH between 7 and 8, and TDS ranging from 40,000 to 70,000mg/L.

The licence holder also indicated that mine dewater from the Aquarius underground mine is currently being discharged to the Vine In-pit TSF. It is recognised that changes to decant water chemistry can potentially liberate alternative metalloid compounds and more reactive cyanide species to the environment, which can increase potential environmental risks. These risks will require a more in-depth assessment than can be provided based on the available information. If the licence holder requires the addition of this discharge point then a separate amendment, with more detailed water chemistry analyses, will need to be applied for.

As part of this amendment process, the format of the licence has also been updated and clerical mistakes have been corrected. Conditions have been renumbered and were clarified where the existing wording was ambiguous.

2.3.4 Chalice West Lake existing discharge point

The licence holder had initially applied to discharge water from the Chalice borefield to Chalice pit, before it would be transferred for use in the processing plant. Since 2010, the licence holder has had the option of discharging mine dewater from the Chalice pit to the adjacent salt lake, Chalice West Lake. The licence holder has not utilized this option since 2014, however, the existing licence retains this discharge point as an option.

The Delegated Officer has determined that there was not enough information provided to establish if adding the Chalice borefield water to the Chalice pit would have a material impact on the flora and fauna that are dependent on the salt lake, should this discharge point be utilized again. The licence holder has opted not to undertake further investigations but will instead ensure that the Chalice borefield water will only be deposited in the HPDE-lined turkey's nest adjacent to the Chalice pit, or to the Aphrodite East pit (which does not discharge to any surface water bodies) before being transferred to the processing plant.

A review of the monitoring conditions on the licence for the Chalice West Lake discharge point identified that although there was sufficient ambient monitoring of the salt lake, monitoring of the water quality and volume of water being discharged to the salt lake had not been included on the licence. A full reassessment of the monitoring conditions was not conducted. Standard monitoring conditions were on the licence for a similar discharge point on Lake Cowan and have now been applied to the Chalice West Lake discharge point. Furthermore, a condition relating to the monitoring of aquatic biota also had reference to specific monitoring bores on Lake Cowan removed, so that it is clear that this monitoring applies at any salt lake where aquatic biota is required to be monitored. The licence holder has routinely monitored these parameters at Chalice West Lake in the past, but the Delegated Officer has determined that they will be conditioned on the licence as they demonstrate a key measure of environmental performance. This monitoring will only be required if discharge to the salt lake occurs.

The licence holder has also informed the Delegated Officer that discharge to Lake Cowan is no longer occurring and will no longer be required and can be removed from the licence.

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 infrastructure construction and operation which have been considered in this amendment report are detailed in Table 1 below.

Table 1 also details the existing control measures on the licence that will apply to these activities, as well as control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed and existing licence controls

Emission	Sources	Potential pathways	Existing controls on the licence and proposed controls
Dust	Construction of earthen bunds and turkey's nests	Air/windborne pathway	No sensitive receptors (this will not be considered further in this assessment)
Noise	Construction of earthen bunds and turkey's nests	Air/windborne pathway	No sensitive receptors (this will not be considered further in this assessment)
Hypersaline/acidic mine dewater	Pioneer open pit mine dewatering to turkey's nest and/or Aphrodite East pit	Seepage to soil and groundwater Pipeline rupture impacting soil and vegetation Overtopping of pit Overtopping of turkey's nest	HDPE lining of turkey's nest (proposed) 0.5m freeboard of the turkey's nest to be maintained with daily inspections (proposed) Pipeline bunding to provide secondary containment sufficient to contain any spill for a period equal to the time between routine inspections (condition 1.2.1) Daily pipeline inspections (condition 1.2.5) Monthly in-pit water level monitoring for Aphrodite East pit – limit of 4m below crest level (condition 3.3.1) Monthly and quarterly water quality monitoring of Aphrodite East pit (Condition 3.3.1)
Hypersaline mine dewater	Mine dewatering from Two Boys underground mine and Aquarius underground mine to Fairplay North pit	Seepage to soil and groundwater Overtopping of pit Pipeline rupture	Pipeline bunding to provide secondary containment sufficient to contain any spill for a period equal to the time between routine inspections (condition 1.2.1) Daily pipeline inspections (condition 1.2.5)
Hypersaline/acidic borefield water	Chalice borefield water discharge to Chalice pit and/or Chalice turkey's nest	Seepage to soil and groundwater Direct discharge to salt lake Pipeline rupture Spills impacting soil and vegetation Overtopping of pit	HDPE lining of turkey's nest (proposed) 0.5m freeboard of the turkey's nest to be maintained with daily inspections (proposed) Pipeline bunding to provide secondary containment sufficient to contain any spill for a period equal to the time between routine inspections (condition 1.2.1) Daily pipeline inspections (condition 1.2.5) Monthly in-pit water level monitoring – limit of 4m below crest level (proposed) Daily pipeline inspections (proposed) Monthly monitoring of volume of water extracted from Chalice borefield (proposed)

Emission	Sources	Potential pathways	Existing controls on the licence and proposed controls
Hydrocarbon contaminated wastewater	Washdown bay water discharge to Poseidon North pit	Direct discharge to groundwater	Washdown bay water passes through an oil/water separator

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. Table 2 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 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
No residential receptors within 25kms	
Environmental receptors	Distance from prescribed activity
Chalice West Lake (salt lake that is currently approved for mine dewater discharge from Chalice pit) Specific receptors include macroinvertebrate populations in the lake and surrounding vegetation.	Part of the premises – current discharge point from Chalice pit. 4.5kms west of Chalice pit.
Lake Cowan (salt lake that is currently approved for mine dewater discharge)	Part of the premises (but not directly impacted by this proposal), 4km east of proposed Pioneer open pit.
<i>Eremophila acutifolia</i> (Priority 3 flora)	Found widely across site.
Underlying groundwater (hypersaline, with the only beneficial use as a source of industrial water, no other nearby groundwater users)	About 20 meters below ground level (mbgl)

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 incomplete 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 3.

The revised licence L9155/2018/1 that accompanies this amendment report authorises emissions associated with the operation of the premises i.e., category 5 and 6 activities.

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 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								
Operation of dewatering and borefield pipelines	Rupture of pipeline causing hypersaline discharge	Direct discharge	Vegetation and priority flora	Refer to Section 3.1.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1, 5 and 8	Licence contains conditions for pipeline bunding or leak detection and inspections. New condition has been added to require pipelines to be constructed within secondary containment or with leak detection.
Discharge of hypersaline water to turkey's nests at Chalice and Pioneer open pits.	Seepage to groundwater	Mounding of groundwater impacting vegetation Change in groundwater chemistry	Vegetation and priority flora Groundwater	Refer to Section 3.1.1	C = Minor L = Rare Low Risk	Y	Condition 8	Turkey's nests to be lined with HDPE
	Overtopping turkey's nest	Direct discharge	Vegetation and priority flora	Refer to Section 3.1.1	C = Minor L = Unlikely Medium Risk	Y	Condition 2 and 5	Requirement to maintain a 0.5m freeboard and conduct inspections.
Discharge of hypersaline water to Aphrodite East pit	Seepage through the pit walls to groundwater	Mounding of groundwater impacting vegetation Change in groundwater chemistry	Vegetation and priority flora Groundwater	Refer to Section 3.1.1	C = Minor L = Unlikely Medium Risk	Y	Condition 19	Requirement for 4m freeboard within pit, monitored monthly.
	Overtopping pit	Direct discharge	Vegetation and priority flora	Refer to Section 3.1.1	C = Minor L = Unlikely	Y	Condition 19	Requirement for 4m freeboard within pit, monitored monthly.

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Risk Event					Risk rating ¹	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	C = consequence L = likelihood			
					Medium Risk			
Discharge of hypersaline water to Fairplay North pit	Seepage through the pit walls to groundwater	Mounding of groundwater impacting vegetation Change in groundwater chemistry	Vegetation and priority flora Groundwater	Refer to Section 3.1.1	C = Minor L = Unlikely Medium Risk	Y	Condition 19	Requirement for 4m freeboard within pit, monitored monthly.
	Overtopping pit	Direct discharge	Vegetation and priority flora	Refer to Section 3.1.1	C = Minor L = Unlikely Medium Risk	Y	Condition 19	Requirement for 4m freeboard within pit, monitored monthly.
Discharge of treated water from the washdown bay oil/water separator to the Poseidon North pit	Hydrocarbon contaminated wastewater	Direct discharge	Groundwater	Refer to Section 3.1.1	C = Minor L = Possible Medium Risk	N	<u>Condition 12 and 19</u>	To ensure that wastewater from the washdown bay oil/water separator has been treated to an acceptable level the Delegated Officer has applied a 15mg/L Total Recoverable Hydrocarbon (TRH) limit to the wastewater stream from the washdown bay, in accordance with the value recommended in <i>Water Quality Protection Note 68</i> . Monitoring and reporting requirements were added to the licence to verify that a sufficient level of environmental protection is achieved.

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

Table 4: Consultation

Consultation method	Comments received	Department response
Local Government Authorities (Shire of Dundas and Shire of Coolgardie) advised of proposal 05/05/2023.	No comments received.	N/A.
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal 05/05/2023.	No comments received.	N/A.
Licence Holder provided with draft amendment on 25/07/23	Refer to Appendix 1	Refer to Appendix 1
Licence Holder provided with a second version of the draft amendment on 11/09/23	Comments received on 19/9/23 - We have reviewed the draft licence and are happy with the proposed amendments. Karora (Avoca Mining) wish to waive the remainder of the consultation period.	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 5 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

Previous Condition no.	Revised Condition no.	Proposed amendments
Cover page	N/A	Addition of mining tenement L15/298 to the premises boundary description
Introduction	N/A	Removed introduction and replaced it with "Licence History" and "Interpretation" to bring it into line with current formatting. Premises details and decision history included in the Decision Report, in line with current standards.
1.1.1 – 1.1.5	N/A	Deleted. Removed "Interpretation" section conditions and replaced with updated "Interpretation" section in accordance with the current standards.

		Definitions have been moved to a table at the end of the licence, in line with current standards.
1.2	N/A	Section renamed to “Infrastructure and Equipment” to bring it in line with current formatting.
1.2.1	1	Removed “construct” as all new construction should be captured in specific construction tables.
1.2.2, Table 1.2.2	2, Table 1	Removed “critical” to capture all containment infrastructure on the premises. Removed Poseidon North Pit (G2) from table as this is a discharge point and not containment infrastructure. Removed reference to discharge point (G1) as this point does not refer to the in-pit TSF Added Pioneer turkey’s nest to contain mine dewater from Pioneer open pit. Added Chalice turkey’s nest to contain water from the Chalice borefield. Added operational freeboard requirements for process water ponds and turkey’s nests. Added column to clarify which locations were permitted to contain which mine waste streams. Updated numbering and figures as required.
1.2.3, Table 1.2.3	3, Table 2	Removed TSF stages that have been constructed and the department has received a construction compliance document for.
1.2.5, Table 1.2.5	5, Table 3	Clarified that visual inspections for freeboard capacity applies to all containment infrastructure in Table 2 Changed “Dewatering pipelines” to “Pipelines containing saline water” to capture dewatering, raw water and borefield pipelines.
1.2.6	6	Removed reference to bores in the table that is no longer applicable.
N/A	8, Table 5	Condition added, outlining the infrastructure that is permitted for construction as part of this amendment, and the construction requirements that must be met for each item of infrastructure.
2.2.1, Table 2.2.1	10, Table 6	Removed authorization for dewatering emissions Lake Cowan and clarified that only mine dewater from Chalice pit is permitted to be discharged to Chalice West Lake.
2.3.1, Table 2.3.1	11, Table 7	Clarified G1 is Aphrodite East Pit. Added G3 Fairplay North Pit Updated emissions sources for all locations.
2.3.2, Table 2.3.2	12, Table 8	Added 15mg/L limit to water from the washdown bay discharged to G2.
3.2.1, Table 3.2.1	17, Table 11	Clarified that CMB6 refers to a monitoring bore. Removed ambient monitoring requirements associated with the Lake Cowan discharge point as the Licence Holder has advised that discharge to this lake is no longer occurring or required. Added monitoring requirements to the discharge to Chalice West Lake discharge, as this was not adequately covered.
3.2.2	18	Removed reference to Lake Cowan monitoring bores, so that this condition refers to any aquatic biota monitoring, for consistency.

3.3, Table 3.3.1	19, Table 12	<p>Clarified that these are emission to land and groundwater.</p> <p>Added discharge locations G3 to the existing monitoring routine.</p> <p>Added requirement to monitor the oil/water separator discharge on a quarterly basis, with a 15mg/L TRH limit.</p>
3.4.1, Table 3.4.1	20, Table 13	<p>Added Fairplay North Pit process monitoring requirements. Amended wording to capture any water discharge (including mine dewater, borefield water or other raw water) to each location.</p> <p>Removed requirements for Lake Cowan discharge monitoring.</p> <p>Added requirement to monitor volumes of water being discharged to Chalice West Lake, as this was missing.</p>
3.5.1, Table 3.5.1	21, Table 14	Removed monitoring bore FPEMB1 and replaced it with FPEMB5
4.1.1 (c)	22	Removed reference to condition that is no longer applicable
4.2.1, Table 4.2.1	25, Table 15	<p>Clarified that all parameters listed in Table 13 are required to be included in the annual environmental report.</p> <p>Removed Note 2</p>
4.2.3	27	<p>Moved condition 27 for clarity, as it should be paired with condition 28 which specifies the requirements of the document.</p> <p>Clarified that the compliance documents are required following each stage of TSF construction.</p>
4.2.4	28	<p>Clarified that this condition relates to the compliance documents in condition 27.</p> <p>Clarified that the requirements of conditions 3 and 6 need to be met in the compliance documents.</p>
4.2.5	29	Condition added. Standard condition requiring reporting on construction of new infrastructure.
4.2.6	30	Condition added. Standard condition specifying the requirements of the reports in condition 4.2.5.
4.3.2	N/A	Condition moved to "Reporting" section of the licence. Refer to 4.2.3.
4.3.3	N/A	Condition removed as it duplicated the requirements of condition 4.2.4.
N/A	Definitions	Definitions table added in line with current standards.

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. Department of Water (DoW) 2013, *Water quality protection note 68: Mechanical equipment wash down*, Perth, Western Australia.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Table 8 – pipeline construction requirements	Condition requires pipelines to be constructed within bunding, but the licence holder would like the option to bury sections of the pipeline.	Pipeline construction conditions are intended to ensure that the pipelines would meet the operational requirements of condition 1. The requirement for bunding has been changed to the wording of condition 1.
10, Table 6 – Chalice West Lake discharge	Authorisation to discharge Chalice open pit dewater to Chalice West Lake was removed, but the licence holder would like it reinstated. The licence holder will no longer seek authorisation to deposit Chalice borefield water to the Chalice open pit and will direct all borefield water to lined ponds or the processing plant either directly or via the Aphrodite East pit.	Authorisation to discharge borefield water to Chalice open pit has been removed, and authorisation to discharge Chalice open pit mine dewatering to Chalice West Lake has been reinstated. All reference to discharging water to Chalice open pit and any associated monitoring requirements has been removed from the licence amendment. The decision report has also been updated to reflect this change.
Table 11 – Monitoring of salt lakes	Chalice West Lake monitoring requirements were removed, however the licence holder would like to maintain the option to dewater Chalice open pit to this location. The licence holder also advised that mining of Baloo pit is complete and any conditions relating to the discharge to Lake Cowan can be removed as they are no longer required.	The existing Chalice West Lake monitoring requirements have been reinstated. A review of the monitoring requirements revealed that Chalice West Lake discharge water quality and volume were not captured on the licence, and have now been added. Conditions relating to the discharge of mine dewater to Lake Cowan have been removed.
-	Peregrine Falcon survey has been completed and no birds or nests found in the Chalice open pit. Please remove condition relating to Peregrine Falcon survey.	Condition removed as the survey has been completed.
Table 12 – pit water level monitoring	Measurement of standing water levels within the pits has been reworded to “metres below crest level”. The previous wording of “metres below ground level” is more appropriate for the site and will maintain the protection of the vegetation surrounding the pits.	Noted. Condition wording has been revised.
Figure 5 – Baloo pit	Please remove as it duplicates figure 4, and mining of this area is now complete.	This figure has been removed, and all figures in the licence have been updated to better reflect the current operation.

Condition	Summary of Licence Holder's comment	Department's response
Figures 9 and 10	FPEMB1 can no longer be safely accessed. Please replace with new monitoring bore FPEMB5. Updated figures provided.	FPEMB5 is an acceptable replacement for FPEMB1, and the licence has been updated to reflect this. Figures have been updated.
3, Table 2	Request to remove completed TSF stages	Reference to stages 1 and 2 of the TSF have been removed.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)				
Application type				
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L9155/2018/1	
		Relevant works approval number:		N/A
Date application received		9/02/2023		
Applicant and Premises details				
Applicant name/s (full legal name/s)		Avoca Mining Pty Ltd		
Premises name		Higginsville Gold Project		
Premises location		M15/351, M15/289, M15/225, M15/642, M15/348, M15/31, M15/786, M15/506, M15/507, M15/620, M15/629, M15/639, M15/640, M15/580, M15/581, M15/597, L15/225, L15/288, L15/302, G15/19, G15/23, M15/528, M15/231, M15/748, M15/512, M15/352, M15/610, M15/375, M15/338, M15/1790, M15/1814, L15/282, L15/347, G15/26, G15/27, G15/29, L15/382, L15/389, M15/325, M15/681 and M15/817. Also seeking to add L15/298 (Chalice borefield tenement)		
Local Government Authority		Shire of Coolgardie and Shire of Dundas		
Application documents				
HPCM file reference number:		DER2018/001153~8		
Key application documents (additional to application form):		Supporting Information: Chalice Pit Discharge and Pioneer Dewatering Appendix A Premises Maps Appendix B Tenement Summary Reports Appendix C Aquaterra Borefields Rest Report 2011 Appendix D Rockwater Groundwater Monitoring Review 2019 - 2022 HGO Appendix E Rockwater Chalice Borefield Condition and Pump Test 2022 Appendix F Aquaterra Hydrogeology and Hydrology Desk Study Chalice 2010 Appendix G GWL 160795(8) Appendix H HGO Groundwater Licence Operating Strategy Appendix I CAW207251 Avoca Mining Pty Ltd Appendix J HGO Environmental Stakeholder Register Appendix K Rockwater Pioneer Dewatering Assessment 2019 Appendix L Supporting Information to Amend NVCP 8152-2 Appendix M Dames and Moore Chalice Pit Groundwater Investigation 1996 Appendix N Actis Monitoring of Chalice West Lake 2022 Appendix O Ecotec Fauna Habitat Survey Chalice et al Prospects		

	Appendix P Jenny Borger Chalice Vegetation and Flora Report 2022 Appendix Q AHIS Search Results Appendix R Sensitive Receptors
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Scope of application/assessment

Summary of proposed activities or changes to existing operations.	<p>The applicant is requested a licence amendment for two projects:</p> <ul style="list-style-type: none"> • The recommissioning of the Chalice borefield and the construction of a lined turkey's nest adjacent to the Chalice open pit. Approval to discharge borewater into the Chalice turkey's nest, which will then be sent to the processing plant. • The creation of a new open pit mine within the premises boundary, named Pioneer open pit. This will include the construct new dewatering infrastructure including pipelines and a lined turkey's nest.
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Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity
Category 05: Processing or beneficiation of metallic or non-metallic ore	1,500,000 tonnes per year	No change proposed
Category 06: Mine dewatering	5,515,000 tonnes per year	No change proposed
Category 54: Sewage facility	No more than 200 cubic metres per day	No change proposed
Category 64: Class I or II putrescible landfill	20 tonnes or more per year	No change proposed

Legislative context and other approvals

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?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:

<p>Has the applicant demonstrated occupancy (proof of occupier status)?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input checked="" type="checkbox"/> Expiry: Various 2025 - 2040 Other evidence <input type="checkbox"/> Expiry:</p>
<p>Has the applicant obtained all relevant planning approvals?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/></p>	<p>Expiry date: If N/A explain why? Mining proposals approved by DMIRS.</p>
<p>Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>CPS No: CPS 8152/3 (provided with application) covers the Pioneer open pit area. Further approval for clearing to access the borefield will be sought through the mining proposal that will be lodged with DMIRS.</p>
<p>Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Application reference No: N/A Licence/permit No:</p>
<p>Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Application reference No: Licence/permit No: CAW 207251 to construct/alter 4 bores in the new borefield has been obtained. (Appendix I) GWL 160795(8) includes the permission to abstract water from the new borefield tenement (L15/298) and the new open pit tenement (M15/681).</p>
<p>Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Name: Goldfields Groundwater Area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Regional office:</p>

<p>Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p>
<p>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>)</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p><i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i> <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> <i>Biodiversity and Conservation Act 2018</i> <i>Mining Act 1978</i></p>
<p>Is the Premises within an Environmental Protection Policy (EPP) Area?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises subject to any EPP requirements?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Areas around the processing plant and the Chalice open pit have been classified as possibly contaminated in geocortex. Classification: Possibly contaminated – investigation required (PC–IR) Date of classification: 2008</p>