



Application for Licence Amendment

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

Licence Number	L9402/2023/1
Licence Holder	Carnegie Gold Pty Ltd
ACN	117 116 097
File Number	DER2023/000375
Premises	Riverina Gold Operations Within Mining Tenement M30/256 As defined by the premises map within Schedule 1 in Licence L9402/2023/1.
Date of Report	29 October 2024
Decision	Revised licence granted

**SENIOR ENVIRONMENTAL OFFICER, INDUSTRY REGULATION
STATEWIDE DELIVERY**

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

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1. Decision summary

Licence L9402/2023/1 is held by Carnegie Gold Pty Ltd (Licence Holder) for the Riverina Gold Operations (the Premises), located within Mining Tenement M30/256.

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 L9402/2023/1 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 Amendment summary

On 8 July 2024, the Licence Holder submitted an application to the department to amend Licence L9402/2023/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Construction of an additional mine dewater high density polyethylene (HDPE) pipeline within the existing pipeline corridor leading from Riverina South Pit to Lady Gladys Pit;
- An increase of dewatering capacity from 500,000 tonnes per annual period to 1,900,000 tonnes per annual period;
- Extension of the prescribed premises boundary;
- Reduction in operational freeboard within Lady Gladys from 10 m to 5 m; and
- Reduction in operational inspection frequency (e.g., dewatering pipeline, catch sump, Lady Gladys Pit).

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

Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed throughput capacity changes

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
6 (Mine dewatering)	500,000 tonnes per annual period	1,900,000 tonnes per annual period	Increase annual amount of mine dewater discharged to the environment (Lady Gladys Pit).

2.2.1 Increase in annual dewater discharge

The Licence Holder has identified that there is a need to increase the maximum dewatering capacity within the Premises for the intent to continue to mine ore. The Licence Holder has observed that as underground mining operations proceeded to deeper levels there has been an increase of groundwater inflows.

To extract the groundwater at a sufficient rate to match and exceed groundwater inflows the Licence Holder has requested to increase the amount of mine dewater extracted and discharged

into the environment from 500,000 to 1,900,000 tonnes per annual period. While the Licence Holder estimated the actual throughput of mine dewater discharge to Lady Gladys to be 1,000,000 tonnes per annum, a maximum discharge rate of 1,900,000 tonnes per annum was requested as contingency in the event of increased groundwater inflows into the underground mine area.

There is currently a single 160 mm HDPE pipeline located within a 15.5 km bunded road corridor which transfers mine dewater abstracted from the Riverina underground mine and discharges at the Lady Gladys Pit (Figure 1). The existing pipeline has a maximum groundwater extraction rate of 20 L/s. The Licence Holder has requested to construct an additional 15.5 km 280 mm HDPE pipeline to increase the cumulative maximum pumping rate from 20 L/s to 60 L/s via utilising the existing and proposed additional pipeline. The additional pipeline will be constructed within the pre-existing pipeline corridor and will be operated with a 75-kilowatt (kW) electric pump situated within the existing Riverina pumping infrastructure east of the pit crest.

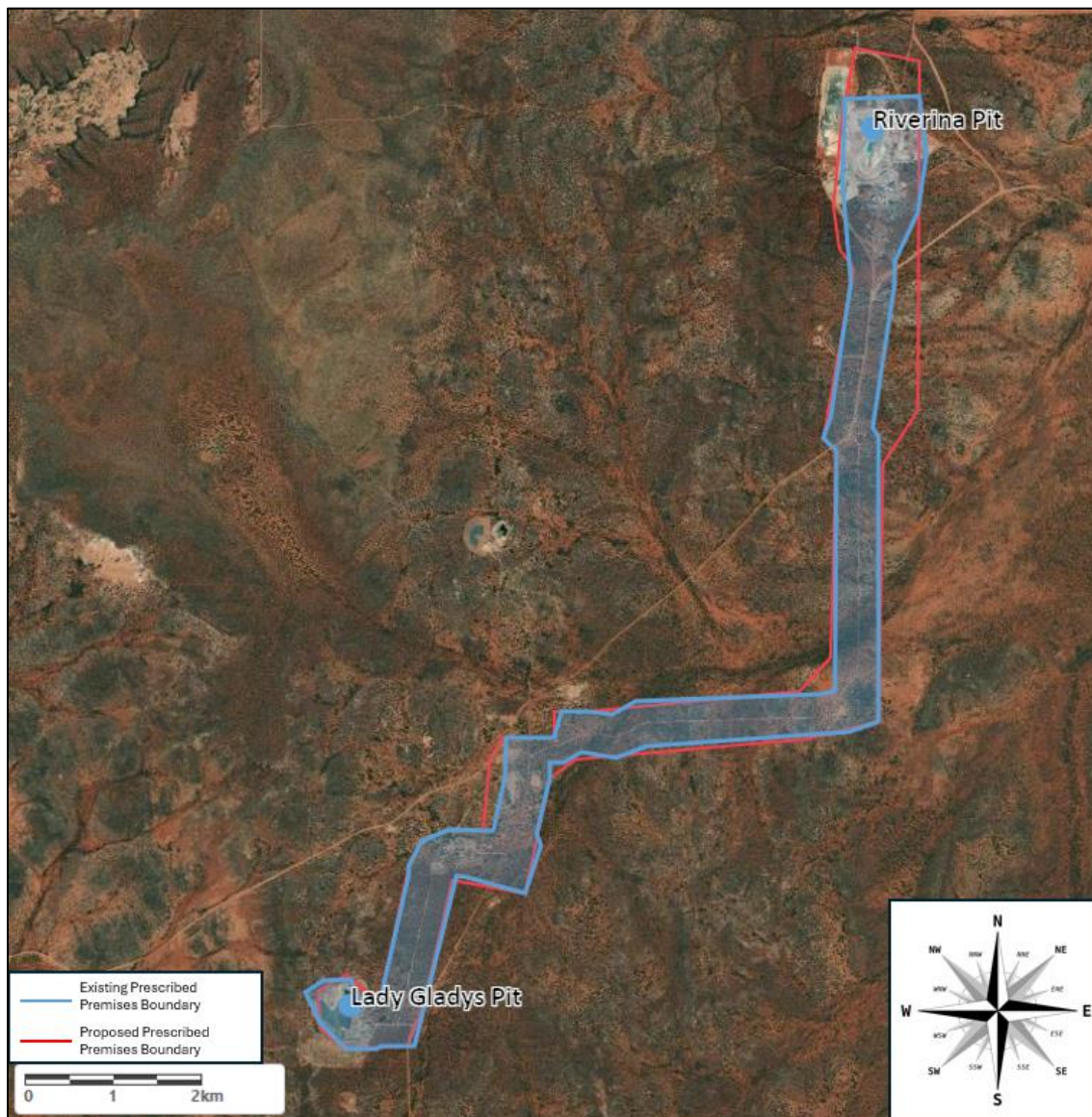


Figure 1: Proposed and existing prescribed premises boundary

Overall operation of the Premises will remain unchanged and mine dewater will continue to be transferred to an existing in-pit storage (Riverina Pit South) for settling before being transferred to a surface storage tank and standpipe prior for use as dust suppression or mining processes. Only excess mine dewater is then transported via the dewatering pipeline and discharged at the

Lady Gladys Pit.

The Licence Holder currently holds a groundwater abstraction licence under the *Rights in Water and Irrigation Act 1914* [GWL 180490(3)] and will amend the licence to increase the annual groundwater entitlement from 895,000 kL to 1,900,000 kL to meet operational dewatering needs.

Groundwater quality

In accordance with existing licence L9402/2022/1, the Licence Holder conducts annual water monitoring and sampling at the Lady Gladys Pit. When compared to water quality of Lady Gladys Pit prior to the commencement of mine dewatering discharge (OBM 2023), most of the parameters measured in December 2023 exhibited an increase in concentration. In particular, four parameters exhibited an increase of over five times the initial concentrations (i.e., arsenic, caesium, nickel, calcium) (Table 2).

Table 2: Lady Gladys groundwater quality change from baseline.

Analyte	Units	Lady Gladys baseline (28/09/2022)	Lady Gladys (19/12/2023)	¹ Multiplication difference between baseline and last sample
pH	-	8.6	7.9	-0.92
TDS	mg/L	7,400	13,000	1.64
EC	µS/cm	11,000	18,000	1.76
Arsenic	mg/L	<0.001	0.029	29
Barium	mg/L	0.029	0.14	4.8
Boron	mg/L	3.3	1.5	-0.45
Caesium	mg/L	<0.0001	0.034	340
Cobalt	mg/L	<0.001	<0.001	-
Copper	mg/L	0.0018	0.002	1.11
Iron	mg/L	<0.01	<0.01	-
Lead	mg/L	<0.001	<0.001	-
Lithium	mg/L	0.059	0.28	4.75
Manganese	mg/L	0.0031	0.0049	1.58
Nickel	mg/L	0.0034	0.085	25
Zinc	mg/L	0.0029	0.0079	2.72
Calcium	mg/L	110	710	6.45
Magnesium	mg/L	190	420	2.21
Potassium	mg/L	23	28	1.22

Analyte	Units	Lady Gladys baseline (28/09/2022)	Lady Gladys (19/12/2023)	¹ Multiplication difference between baseline and last sample
Sodium	mg/L	2,300	2,300	0
Hardness	mg/L	1,100	3,500	3.18

Note 1: Where results are below LOR the LOR is used in the calculation.

Note 2: *Italicised* text result indicates below LOR.

In addition, quarterly water monitoring conducted at the Riverina South staging tank indicated increasing concentration of parameters measured (Table 3; Figure 2), including the four parameters that have exhibited increased concentrations at the Lady Gladys Pit. Furthermore, the salinity of the mine dewater appears to be increasing over time, based on total dissolved solid (TDS) levels (Table 4; Figure 3). The department understands that this trend is due to the increasing depth of dewatering activities at the Riverina underground mine, where the salinity of natural groundwater is increasing. The highest recorded TDS for mine dewater at the Riverina underground mine was 140,000 mg/L (OBM 2024a). Based on existing monitoring information, the discharge of mine dewater from the Riverina underground mine may be contributing to elevated salinity as well as metal and metalloid loading at Lake Gladys Pit, though further monitoring is required to identify clearer trends.

Table 3: Riverina South staging tank water quality

Analyte	Units	Date sampled			
		8/11/2023	4/03/2024	15/05/2024	30/06/2024
Arsenic	mg/L	0.04	0.04	0.09	0.1
Barium	mg/L	0.09	0.32	0.35	0.34
Caesium	mg/L	0.04	0.13	0.18	0.16
Calcium	mg/L	630	2600	3500	3000
Lithium	mg/L	0.26	0.53	0.66	0.59
Manganese	mg/L	0.11	0.36	0.60	0.66
Nickel	mg/L	0.06	0.14	0.25	0.37

Table 4: Field parameters recorded at Riverina South staging tank

Riverina South staging tank								
Date sampled	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024
pH	7.02	7.04	7.07	6.67	7.33	6.9	6.6	6.8
TDS (mg/L)	9,600	28,149	37,190	33,120	27,820	34,838	45,870	46,830
EC (µS/cm)	13,000	28,630	35,450	33,230	28,210	33,362	43,870	46,285

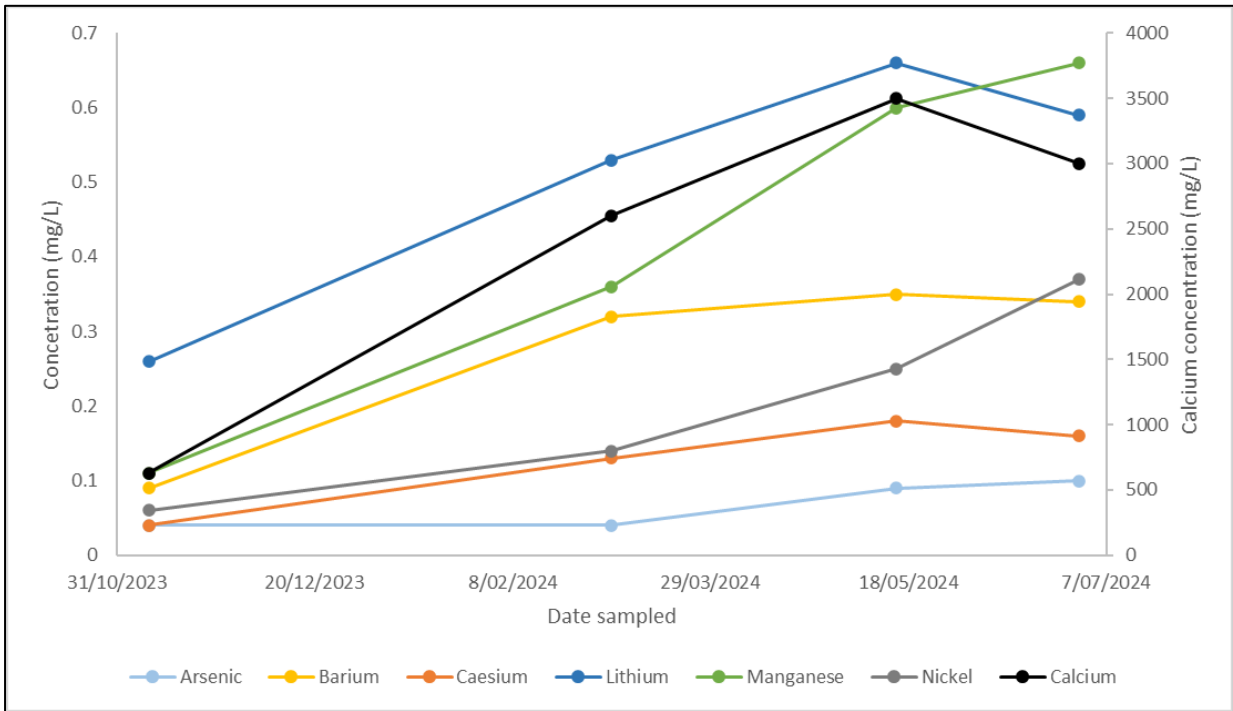


Figure 2: Riverina South staging tank water quality

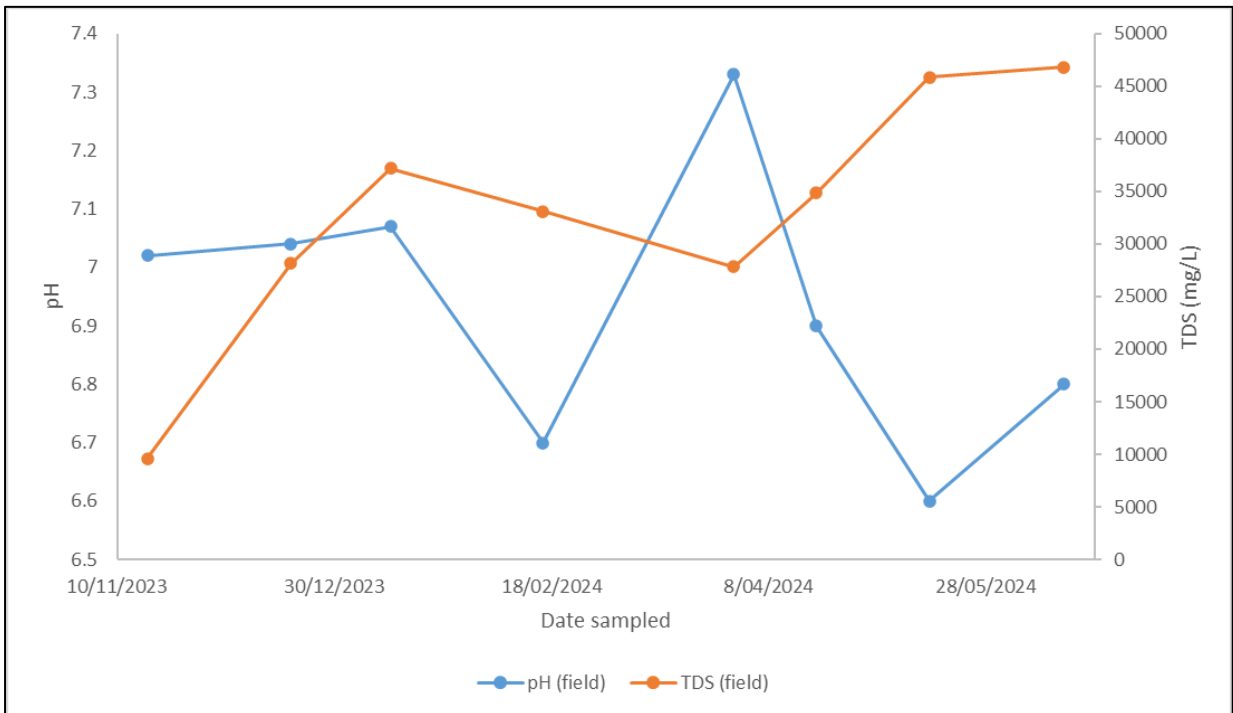


Figure 3: Field pH and TDS concentrations of mine dewater from the Riverina South staging tank

Water balance

To support the proposed increase in mine discharge volumes, the Licence Holder submitted an updated water balance for the Lady Gladys Pit. The department has summarised and compared the water balance information in Table 5. The updated annual water balance increases the current dewatering extraction rate of 157,680 kL (20 L/s) to 1,892,160 kL, based on the additional pipeline increasing the extraction rate by 40 L/s to a total extraction rate of 60 L/s.

The Licence Holder has noted that the life of mine (LOM) for the Premises is approximately five years. It is indicated that under the proposed extraction and discharge rate Lady Gladys has capacity to store mine dewater for 2.7 years at expected mine dewater discharge rate (1,000,000 tonnes per annum) or 1.4 years of discharge operating at maximum capacity (1,900,000 tonnes per annum), when not accounting for pathways for water loss (e.g., evaporation, catchment runoff, seepage, etc.). To manage the storage of mine dewater at Lady Gladys Pit, the Licence Holder will review their mine water balance biannually and develop further contingencies for discharge options annually.

For the risk assessment in section 3.2, the maximum discharge rate to Lady Gladys is used as a conservative measure for the purpose of the assessment regarding the change in operations. The discharge of additional mine dewater and the associated risk of overtopping is discussed in section 3.2 and 3.3 of this amendment report.

Table 5: Riverina Underground Operations Water Balance

Factor	Description	Volume for Discharge (kL/Year) <i>Licence Application 2023</i>	Volume for Discharge (kL/Year) <i>Licence Amendment 2024</i>	Comments/Assumptions/Source
INPUTS	Water stored in underground voids	50,000	-	Volume uncertainty due to inability to access underground voids.
	Inflow based on Year 1 dewatering – 5.0 L/s	157,680	-	Considered typical life of mine annual abstraction value.
	Inflow based on Year 2 dewatering – 60.0 L/s	-	1,892,160	Based on cumulative pipeline pumping capacity of 60 L/s.
	Pit catchment 117,000 m ²	10,000	10,000	Based on incident rainfall of 6.4 mm limited inflow.
	SUB TOTAL INPUTS	217,680	1,902,160	
LOSS	Evaporation: S-Pit Pond – 80 m x 50 m	7,520	9,024	Evaporation parameters – Annual 3,208 mm, based on in-pit area 5,000 m ² .
	Evaporation: MWD – 25 m x 25 m – 1,800 kL	1,175	-	Dam area – 625 m ² .
	SUB TOTAL LOSS	8,695	9,024	
USAGE	Dust suppression (mine and ROM) – Tanker	33,000	57,325	25 kL Mine Tanker – 6 trips/day – 220 days.
	Dust suppression (RIV H/R to DHurts – Tanker	55,000	79,325	50 kL Road Tankers, 65 km round trip – 5 trips/day – 220 days.
	Mining use	10,950	10,950	Wash Down underground workings, equipment wash down.
	Air strip conditioning 8 ha short term 24d/year	2,400	2,400	25 kL Mine Tanker – Construction/maintenance conditioning.
	MINE USAGE	101,350	150,000	
TOTAL WATER VOLUME	Annual surplus mine dewater to be discharged at Lady Gladys – 5 L/s	107,635 kL	-	Includes stored void water removed within 12 months.
	Annual surplus mine dewater to be discharged at Lady Gladys – 10 L/s	265,315 kL	-	Includes stored void water removed within 12 months.
	Annual surplus mine dewater to be discharged at Lady Gladys – 60 L/s	-	1,743,136 kL	---
	Lady Gladys current stored water pit volume	147,800 kL	569,940 kL	21 October 2024 survey pickup.
	Lady Gladys Pit – storage capacity 10 m freeboard	2,738,000 kL	2,168,060 kL	21 October 2024 survey pickup.
	Lady Gladys Pit – storage capacity 5 m freeboard	-	2,982,062 kL	Total storage capacity to 5 m freeboard.

2.2.2 Amendment to inspection frequency and freeboard

Existing licence L9402/2023/1 requires the Licence Holder to undertake visual inspection for key dewatering and containment infrastructure. The Licence Holder has proposed a reduction in inspection frequency for some items of infrastructure. Justification for the reduction of the dewatering pipelines inspection requirement is due to the operation of telemetry monitoring on both pipelines. Furthermore, the Licence Holder has proposed to decrease the freeboard height requirement at Lady Gladys pit from 10 m to 5 m. These proposed amendments to the existing licence conditions are discussed in section 3.3.

2.2.3 Amendment to prescribed premises boundary

The Licence Holder has requested an amendment to the prescribed premises boundary as presented in Figure 1. The change in the premises boundary is a result to shift the pipeline corridor slightly out to the proposed Credo conservation park cadastral boundary and also to align with the existing clearing permit CPS 8854/2. The department has reviewed the amendment and does not consider this to materially alter potential risks to sensitive receptors. Therefore, the amendment has been granted and is not assessed further in the risk assessment.

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 2020b).

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 6 below. Table 6 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 6: Licence Holder controls

Emission	Sources	Potential pathways	Current and proposed controls
Dust	Construction of the additional dewatering pipeline.	Air/windborne pathway emitting emissions to receptors.	Proposed controls: <ul style="list-style-type: none"> Establish vehicle speeds to fit environmental and road conditions on Pipeline Inspection Track as required.
Hydrocarbons	Spills from trucks during construction.	Release of hydrocarbons into the environment via spill or leak.	Proposed controls: <ul style="list-style-type: none"> Appropriately designed and maintained service truck for infrastructure; Hydrocarbon management and spill procedure included as part of employee induction; Use of the Hydrocarbon Spill Clean-Up Procedure involving the use of spill

Emission	Sources	Potential pathways	Current and proposed controls
			<p>clean-up kits and contaminated soil recovery and disposal to a bioremediation pad; and</p> <ul style="list-style-type: none"> Hydrocarbon spill kits available.
<p>Mine dewater – Saline (TDS up to 140,000 mg/L)</p>	<p>Transfer of mine dewater from Riverina Pit to Lady Gladys Pit for discharge.</p>	<p>Release of saline water into the environment via pipeline/infrastructure breach.</p>	<p>Existing licence conditions:</p> <ul style="list-style-type: none"> Eight staged catch sumps (10 m x 10 m) located along the pipeline route maintained with adequate storage capacity to contain mine dewater from pipeline failure until automatic pressure shutoff device is activated; Shutoff valve located on standpipes; V notch drains in bunded corridor or buried in a trench; Inspection of pipeline, standpipe and associated tanks; and Automatic pressure shutoff device fitted to end of pipe staging tanks. <p>Proposed controls:</p> <ul style="list-style-type: none"> New pipeline to have telemetry system installed; Breather valves installed along pipeline; Continued pipeline maintenance, including daily inspection of pipelines and monthly inspection of catch sumps; Water pressure to not exceed the design criteria for the pipeline sections; and Implementation of Dewatering Pipeline Management Procedure.
		<p>Mine dewater discharged to land from overtopping of pits or staging tanks into the environment.</p>	<p>Existing licence conditions:</p> <ul style="list-style-type: none"> Staging tanks have a maintained pipeline leading back to the pit to prevent the staging tanks from overflowing; Maintenance of freeboard of 10 m at Lady Gladys Pit; Daily inspection of Lady Gladys Pit; Water flow volume monitoring at tank/pit discharge locations; and Annual pit level survey. <p>Proposed controls:</p> <ul style="list-style-type: none"> Develop a trigger action response plan

Emission	Sources	Potential pathways	Current and proposed controls
			<p>(TARP) if the water level rises to 10 m below pit crest. The TARP will involve discharge to a drainage line.</p> <ul style="list-style-type: none"> • Monthly water volume and pit level monitoring; • Proposed amendment to freeboard of 5 m, with monthly freeboard inspection; and • Freeboard of 300 mm on staging tanks; and • Six-monthly reviews of site water balance
		Mine dewater seepage through the base and walls of pits to soil and groundwater.	<p>Existing licence conditions:</p> <ul style="list-style-type: none"> • Pit water and dewater discharge monitoring requirements; and • Monitoring of mine dewatering volumes.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020b), 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 7 below provides a summary of potential environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020a)).

Table 7: Environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Native vegetation	Vegetation is nearby (<10 m) and/or adjacent to the pit and dewatering pipeline corridor.
Native fauna	<p>Native fauna may be present within the proposed dewatering discharge area.</p> <p>Native fauna is assumed to be only exposed to the mine dewatering water if spills/leaks occur during the operation or they access Lady Gladys Pit as a source of drinking water.</p>
Groundwater	<p>Information sourced from Water Information Reporting identified searchable bores within a 20 km vicinity of Lady Gladys Pit drill depth was noted to be between 22.86 to 48.16 mbgl. Water quality within Lady Gladys Pit is summarised in Table 2.</p> <p>Since commencement of mine dewatering discharge, water pH within the pit lake has decreased from 8.6 pH units to 7.9 pH units, with TDS increasing from 7,400 mg/L to 13,000 mg/L. Water quality is discussed further in section 2.2.1.</p>

Environmental receptors	Distance from prescribed activity
Ephemeral creek lines	Two minor drainage lines are present at the northern portion of the pipeline approximately 1.2 km north of Riverina Pit and 0.3 km south of Riverina Pit. The pipeline route between Riverina underground mine and Lady Gladys Pit also crosses seven minor ephemeral creek lines.
Credo pastoral lease area	<p>It is understood that the former Credo pastoral lease is proposed to be added to the formal conservation resource system. The former Credo pastoral lease has been identified to contain 20 vegetation types, of which 15 are inadequately represented or unrepresented in the conservation reserve system.</p> <p>Portions of the Credo pastoral lease area boundary crosses into a small portion of the pipeline corridor and the extent overlaps the prescribed premises.</p>

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020b) 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 8.

The Revised Licence L9402/2023/1 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 8. 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	Comments and/or justification for additional regulatory controls	
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls					
Construction									
Operation of mobile machinery and placement of an additional HDPE pipeline.	Dust	Potential Pathway: <ul style="list-style-type: none"> Dust transported offsite via air / windborne pathways. Potential Impacts: <ul style="list-style-type: none"> Reduction of the Premises amenity; and/or Reduction in receptors health values. 	<ul style="list-style-type: none"> Native vegetation; Credo pastoral lease area; and Ephemeral creeks. 	Refer to Section 3.1.1	C = Slight L = Unlikely Low Risk	Y	N/A	N/A	
	Hydrocarbons	Potential Pathway: <ul style="list-style-type: none"> Hydrocarbon spills/leaks from the machinery to direct contact with soil followed by lateral or vertical movement. Potential Impact: <ul style="list-style-type: none"> Reduction of receptor value and/or potentially contamination. 							Y
Operation									
Transfer of additional (~40 L/s) mine dewater from/to Riverina Pit, Riverina South Pit Storage, Lady Gladys Pit and staging tanks through an additional HDPE pipeline.	Mine dewater – Saline (TDS <140,000 mg/L)	Potential Pathway: <ul style="list-style-type: none"> Seepage of mine dewater through the base and walls of pits to soil and groundwater. Potential Impacts: <ul style="list-style-type: none"> Groundwater mounding; Reduced quality or contamination of groundwater; and Impacts to native vegetation health. 	<ul style="list-style-type: none"> Native vegetation; and Credo pastoral lease area. 	Refer to Section 3.1.1	C = Moderate L = Unlikely Medium Risk	Y	Amended condition 9: Mine dewater and Lake Gladys Pit water monitoring requirements.	N/A	
		<ul style="list-style-type: none"> Groundwater mounding; Reduced quality or contamination of groundwater; and Impacts to native vegetation health. 	<ul style="list-style-type: none"> Groundwater. 		C = Minor L = Possible Medium Risk	Y			
		Potential Pathway: <ul style="list-style-type: none"> Mine dewater discharged to land from rupture/leak/spill of dewatering pipeline or staging tanks. Potential Impact: <ul style="list-style-type: none"> Reduced quality or contamination of surface water (ephemeral creek line) and groundwater; Impacts to ecological health; and Soil solidity, areas impacted by hypersaline or contaminated water may become dispersive, causing increased erosion/sedimentation. 	<ul style="list-style-type: none"> Ephemeral creeks; Native vegetation; and Credo pastoral lease area. 		C = Minor L = Possible Medium Risk	Y			Existing condition 1: Leak detection and spill control
		Potential pathway <ul style="list-style-type: none"> Mine dewater discharged to land from overtopping of pits or staging tanks. Potential impacts: <ul style="list-style-type: none"> Soil solidity, impacted areas may become dispersive, causing increased erosion/sedimentation; and 	<ul style="list-style-type: none"> Groundwater; and Native fauna. 		C = Minor L = Rare Low Risk	Y			Existing condition 2: Pipeline controls Amended condition 3: Inspection requirements.
		<ul style="list-style-type: none"> Native vegetation; and Ephemeral creek lines. 	<ul style="list-style-type: none"> Native vegetation; and Ephemeral creek lines. 		C = Minor L = Unlikely Medium Risk	Y	Existing condition 1: Staging tank overflow controls. Existing condition 3: Inspection requirements.	Details of the amended inspection frequency and the department's decision are presented in section 3.3.	
		<ul style="list-style-type: none"> Native fauna. 	<ul style="list-style-type: none"> Native fauna. 		C = Minor L = Rare	Y	Amended condition 4: Pit freeboard requirement. New condition 5: TARP		

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Comments and/or justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
		<ul style="list-style-type: none"> Impacts to ecological health. 			Low Risk		requirement and submission. Amended condition 13: AER requirements.	
Mine dewater used for dust suppression	Mine dewater – Saline (TDS <140,000 mg/L)	<p>Potential Pathway:</p> <ul style="list-style-type: none"> Mine dewater used to control dust emissions from the property <p>Potential Impact:</p> <ul style="list-style-type: none"> Impacts to ecological health; and Soil solidity, areas impacted by hypersaline or contaminated water may become dispersive, causing increased erosion/sedimentation. 	<ul style="list-style-type: none"> Native vegetation; Ephemeral creek; and Credo pastoral lease area. 	Refer to Section 3.1.1	C = Minor L = Possible Medium Risk	Y	Existing condition 7: Dewatering effluent controls.	N/A

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

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

3.3 Decision on proposed amendments to existing licence conditions

In considering the Licence Holder’s request to increase mine dewater discharge into the Lady Gladys Pit from 500,000 tonnes per annual period to 1,900,000 tonnes per annual period, the department has assessed the potential risk of the overtopping of the Lady Gladys Pit as well as pipeline failure, resulting in a release of saline mine dewater into the surrounding environment. In the assessment, the department has considered relevant controls in existing licence L9402/2023/1, as well as those proposed by the Licence Holder through this amendment (including proposed modifications to existing conditions in the licence).

3.3.1 Lady Gladys freeboard change

The Licence Holder has proposed to decrease the freeboard height requirement at Lady Gladys from 10 m to 5 m. Since the commencement of discharge in 2023, the water level within Lady Gladys Pit has increased by approximately ~7 m, with over 40 m in freeboard at the time of the assessment (Figure 4).

In considering this, the department has considered the proposed reduction in freeboard level and has amended the freeboard to 5 m. However, the rate of rise for water level within the pit was also noted, as well as the significant increase in discharge throughput proposed under this amendment, which may present an increased risk of overtopping. Specifically, under the maximum discharge rates (i.e., 1,900,000 tonnes per annum), Lady Gladys Pit would only have sufficient capacity for approximately 2.7 years, which is less than the current LOM of five years.

Consequently, the department has also included an additional condition to require the Licence Holder to submit a TARP if water levels within Lady Gladys reaches 10 m below the pit crest (new condition 5), noting that the Licence Holder had previously committed to implementing a TARP should pit water level reach 15 m below pit crest. Furthermore, condition 13 of the amended licence has been updated to require the submission of an annual water balance for Lady Gladys Pit.

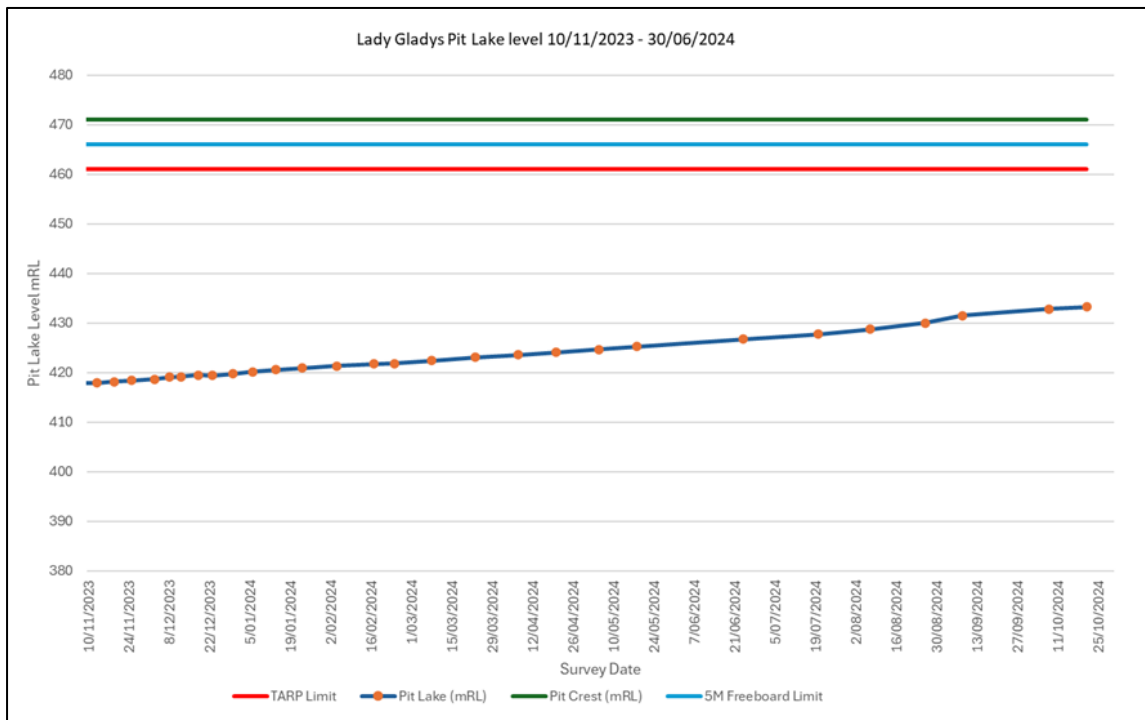


Figure 4: Lady Gladys Pit level (sourced from OBM 2024b)

3.3.2 Inspection frequencies

Table 9 provides the required inspection frequencies required under condition 3 of the existing licence, the frequencies proposed by the Licence Holders under this amendment and the department's decision and comments on the proposed amendments to inspection frequency.

Table 9: Changes to controls for infrastructure

Infrastructure	Current inspection frequency	Licence Holders proposed inspection frequency	Departments decision on inspection frequency	Comments
Dewater pipelines	Twice daily inspection (at least nine hours between each inspection)	Daily	Daily	<p>The department has amended the licence to reduce the frequency of pipeline inspections as:</p> <ul style="list-style-type: none"> • Mine dewater pipelines have/will have a telemetry system; • Mine dewater pipelines are located within V-notch drains in bunded corridors; and • Automative pressure shutoff device is fitted to end of pipes staging tanks. <p>However, the department notes that the Licence Holder must ensure that catch pits located along the pipeline corridor has enough holding capacity to hold mine dewatering spills/leaks in between pipeline inspections, in accordance with conditions 1 and 2.</p>
Catch sumps	Twice daily (at least nine hours between each inspection)	Monthly	Daily	<p>The department has amended the inspection requirement for catch sumps from twice daily to daily. The department considers monthly inspections of catch sumps to be too infrequent to identify and rectify any mine dewater accumulation in the catch sumps. Furthermore, the proposed increase in mine dewatering throughput increases the consequence of impacts to sensitive receptors should this risk event occur.</p> <p>The catch sumps are located along the dewater pipeline corridor and is unlikely to present significant additional burden on the part of the Licence Holder in complying with the licence conditions.</p>
Lady Gladys Pit freeboard	Daily	Monthly	Weekly	<p>The department notes the rising trend in pit lake elevation (~7 m), based on the previous year of monitoring (Figure 4). In considering the increase in throughput for the discharge of mine dewater into the Lady Gladys Pit, pit lake elevation may continue to rise.</p> <p>The department has amended the inspection requirement for the freeboard inspection requirement for Lady Gladys Pit from daily to weekly, as the department considers monthly inspections of the freeboard to be too infrequent especially when water levels are close to the freeboard and the TARP level where immediate action is required.</p>

Infrastructure	Current inspection frequency	Licence Holders proposed inspection frequency	Departments decision on inspection frequency	Comments
				Additionally, Lady Gladys Pit is located at the end of the pipeline corridor and is unlikely to present significant additional burden on the part of the Licence Holder in complying with the licence conditions.

4. Consultation

Table 10 provides a summary of the consultation undertaken by the department.

Table 10: Consultation

Consultation method	Comments received	Department's response
Local Government Authority advised of proposal on 26 August 2024	The Shire of Menzies replied on 2 September 2024, mentioned that no issues were identified and were supportive of this application.	Noted.
Licence Holder was provided with draft amendment on 14 October 2024	Licence Holder had no comments on the proposed amendment but requested the registered business address be updated.	The department has updated the amended licence accordingly.

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 11 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 11: Summary of licence amendments

Condition no.	Proposed amendments
---	Condition numbers have been changed throughout, unless otherwise noted in Table 11.
Front page	Amended assessed production capacity from 500,000 to 1,900,000 tonnes per annual period for Category 6. Added date of amendment and updated registered business address.
Licence history	Added summary to changes under this licence amendment.

Condition no.	Proposed amendments
Condition 3	Amended inspection of pipeline and catch sumps from twice daily to daily; and Daily inspections of Lady Gladys Pit from daily to weekly.
Condition 4	Amended freeboard requirement at Lady Gladys Pit from 10 m to 5 m.
(new) Condition 5	Added requirement for submission of a trigger action response plan if Lady Gladys water level reaches 10 m below the embankment.
Condition 13	Added requirement for Licence Holder to submit and water balance for Lady Gladys Pit within the Annual Environmental Report.
(new) Condition 16	Added construction requirements for the new proposed dewatering pipeline.
(new) Condition 17	Added condition for submission of Environmental Compliance Report.
(new) Condition 18	Added condition for requirements of the Environmental Compliance Report.
Definitions	Defined 'TARP'.
Schedule 1, Figure 1	Updated figure with amended prescribed premises boundary.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020b, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Ora Banda Mining (OBM) (2023) Riverina Gold Operations, Prescribed Premise Licence Application, Category 6 – Mine Dewatering, Riverina – Lady Gladys Pit, M30/256. Document No: OBM-RGO-PPLA-0523. Issue A Revision 1.0.
5. OBM 2024a Riverina Gold Operations, Prescribed Premises Licence Application, Category 6 – Mine Dewatering, Riverina - Lady Gladys Pit, M30/256. Document No: OBM-RGO-PPLA-0724
6. OBM 2024b, Riverina, Annual Environmental Report, Riverina Gold Operations, 10 November 2023 – 30 June 2024