Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L7798/1993/6
Licence Holder	Silver Lake (Deflector) Pty Ltd
ACN	101 224 999
File Number	APP-0027628
Premises	Gullewa Gold-Copper Operations M59/49, L59/49, L59/64, M59/68, M59/132, M59/294, M59/356, M59/391, M59/392, M59/335, M59/442, L59/35, M59/507, M59/336, M59/522, L59/71, L59/158, L59/159 and L59/160 Morawa – Yalgoo Road
Date of Report	05 June 2025
Decision	Revised licence granted

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1. Decision summary

Licence L7798/1993/6 is held by Silver Lake (Deflector) Pty Ltd (Licence Holder) for the Gullewa Gold-Copper Operations (the Premises), located at M59/49, L59/49, L59/64, M59/68, M59/132, M59/294, M59/356, M59/391, M59/392, M59/335, M59/442, L59/35, M59/507, M59/336, M59/522, L59/71, L59/158, L59/159 and L59/160 Morawa – Yalgoo Road.

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 L7798/1993/6 has been granted.

The revised licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 25 February 2025, the Licence Holder submitted an application to the department to amend Licence L7798/1993/6 (L7798) under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act).

The Licence Holder proposes to incorporate the recently modified wastewater treatment plant (WWTP) at the Premises to Licence L7798.

An amendment to Works Approval W6407/2020/1 (W6407) was granted on 20 March 2024 to modify the wastewater treatment plant (WWTP) at the Premises by replacing an existing 30 m^3 /day containerised sewage treatment plant (STP) with a larger 50 m^3 /day STP. This addition, combined with the existing 60 m^3 / day STP, increases the overall capacity of the WWTP to treat up to 110 m^3 of wastewater per day.

With W6407 only authorising the construction and time limited operation (TLO) of a Category 85 sewage facility with a design capacity to treat up to 90 m^3 /day, W6407 was amended, replacing Category 85 with Category 54 to authorise more than 100 m^3 of sewage to be treated per day at the Premises. Licence L7798 for the Premises also requires amending by replacing Category 85 with Category 54 to allow the continual operation of the WWTP following the completion of TLO's under W6407.

This Licence amendment is therefore limited only to removing of Category 85 and adding Category 54 to the existing licence. No changes to the aspects of the existing licence relating to Categories 5, 6 and 64 have been requested by the Licence Holder.

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

Table 1: Proposed design or throughput capacity changes

Category	Current design / throughput capacity	Proposed design / throughput capacity	Description of proposed amendment
5 Processing or	877,000 tonnes per annual period	No change proposed	No change proposed

beneficiation of metallic or non-metallic ore			
6 Mine dewatering	1,540,000 tonnes per annual period	No change proposed	No change proposed
54 Sewage facility	N/A	110 cubic metres per day	The current WWTP at the Premises has been modified through W6407 by installing a 50 m^3 / day sewage treatment plant (STP), in addition to the existing 60 m^3 / day STP. Increasing the capacity of the WWTP to treat up to 110 m^3 of wastewater per day.
64 Class II landfill site	4,000 tonnes per annual period	No change proposed	No change proposed
85 Sewage facility	60 cubic metres per day	Removing from licence	Removing from 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 premises operation which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Treated sewage effluent	Wastewater treatment plant	Seepage to soils and groundwater	Sprinklers discharging treated sewage effluent to the sprayfield are located to avoid overlap and ponding of the treated wastewater on the surface of the sprayfield. Fencing of the WWTP area Bunding along fence lines Sprayfield size has been increased to 6 ha to meet the requirements of the increased throughput A minimum irrigation sprayfield size of 2.74 ha has been determined by the Licence Holder according to the Water Quality Protection Note 22 (WQPN22) (i.e. 120 kg/ha/year for P and discharge throughput volume of 75 m3 /day) for soil type D, with P nutrient loading being the limiting factor. Monthly water quality testing as per Department of Health requirements WWTP monitoring as per licence specifications The original, decommissioned WWTP remains on the premises (location shown in Schedule 1, Figure 7 of works approval W6407/2020/1) and can be made operational if the new WWTP fails, as stated in condition 5, Table 3 of the licence.

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 3 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 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Barnong Station Homestead Yalgoo townsite Barnong Airstrip	Yalgoo is located 45 km northeast of Deflector Accommodation Camp and wastewater treatment plant (the premises). Barnong Station homestead is located approximately 9.77 km away from the premises. It is unoccupied and is in a state of disrepair, therefore there are no sensitive human receptors at the site. The homestead is managed by the Department of Biodiversity, Conservation and Attractions (DBCA). DBCA advised DWER on the 28 July 2020 that there were no plans to repair the homestead for human occupation. **All human receptors screened out due to distance**
Environmental receptors	**Distance from prescribed activity**
Local surface water	There are two minor non perennial watercourses within 100 m and 400 m south and northeast of the irrigation sprayfield boundary. The Salt River is located approximately 3.28 kilometres east-southeast from the closest emission discharge point of the WWTP (measured from the south-eastern corner of the WWTP irrigation sprayfield boundary). Sheet flow from the surrounding catchment contributes to the Salt River during periods of heavy rainfall and it is the main drainage channel for the catchment. Due to the distance of the Salt River to the irrigation sprayfield, it has been screened out of this assessment.
Underlying Groundwater	Groundwater levels are approximately 20 m below ground level predominantly within the lower saprolite layer. The geology of the area is expected to consist of 2 m of cover/soil over a ferruginous hard cap of around 3 to 10 m. Below this, an upper saprolite area to around 25 to 30 m and a lower saprolite layer to 30 to 50 m. Saprock and fresh bedrock are located below these. Groundwater is likely to be located within the upper and lower saprolite area. Due to the geology of the area above groundwater being, approximately 10 m cover/soil over ferruginous hard cap, underlying groundwater has been screened out of this risk assessment. **The underlying groundwater has been screened out due to distance**
Flora/vegetation	Flora on the premises and surrounds consists of Acacia shrubland vegetation. Gullewa vegetation complexes (banded ironstone formation) exist approximately 7 km northeast of the sprayfield (measured from the eastern edge of the sprayfield to the western border of the vegetation complex). This complex has been screened out due to distance from the irrigation sprayfield.

	No threatened or priority listed flora of conservation significance have been found on the premises or in the surrounding area.

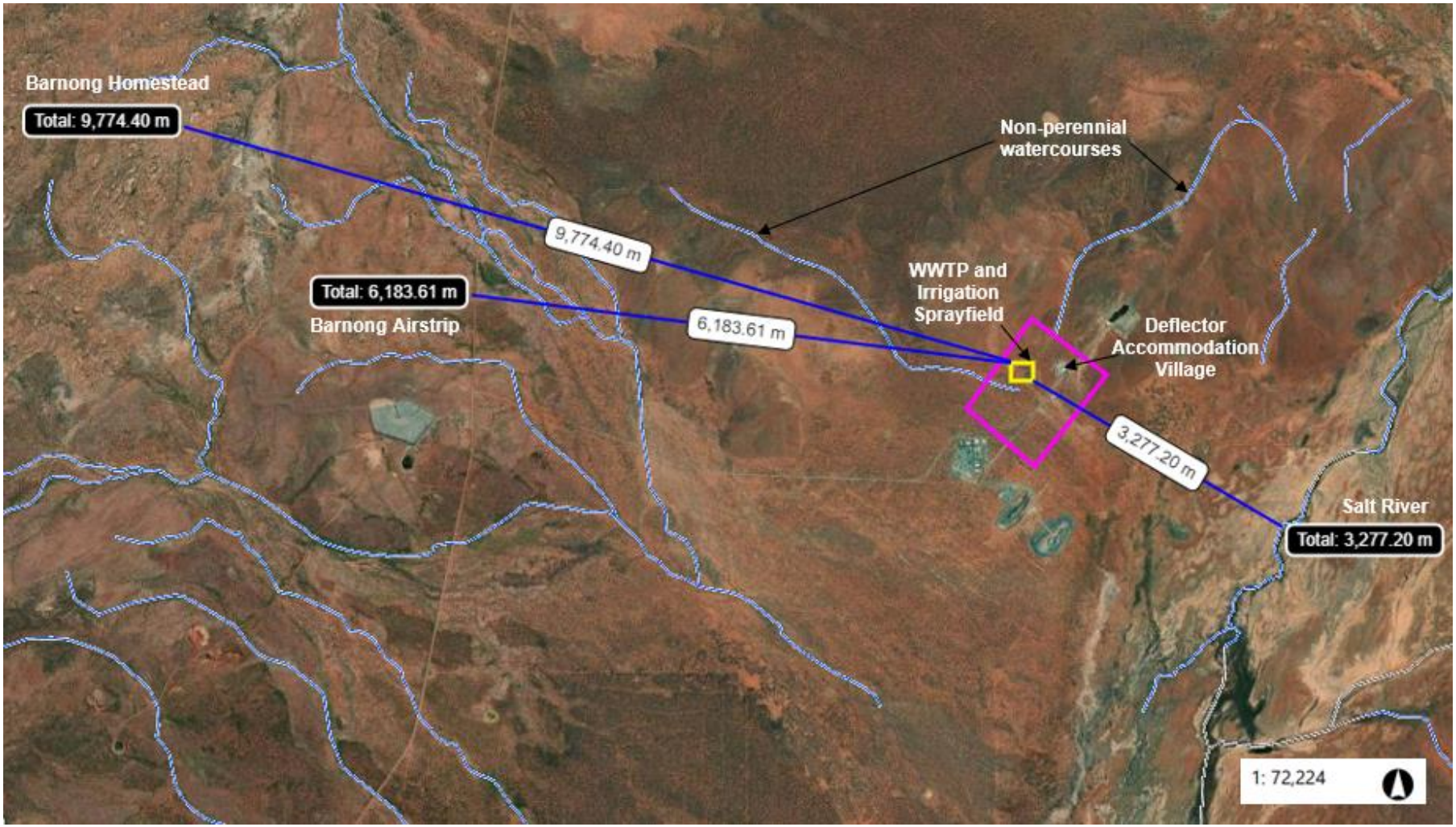

Figure 1: Distance to sensitive receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The Revised Licence L7798 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. WWTP activities.

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

Table 4: Risk assessment of potential emissions and discharges from the Premises 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 the Wastewater Treatment Plant (WWTP)	Raw sewage, sludge or treated sewage discharge due to tank overtopping, failure of containment infrastructure (tanks and pipework) or spillage of poor quality wastewater after treatment, leading to possible emissions of sediment, bacteria and excess nutrients	Direct discharge to land – overland runoff potentially impacting native vegetation, soil chemistry and surface water quality Excess nutrients causing growth of weed species	Local surface water Surrounding native vegetation	Refer to Section 3.1	C = Minor L = Rare **Low Risk**	Y	Condition 5	Condition 5 includes infrastructure and equipment requirements to ensure applicant operational controls are included. The Delegated Officer is satisfied these controls are sufficient.
Operation of the irrigation sprayfield with additional sprinklers and expanded irrigation area	Excess discharge of treated wastewater to land	Waterlogging and pooling on irrigation sprayfield - overland runoff into surface water, impacting surface water quality and health of surrounding vegetation	Local surface water Surrounding native vegetation	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	N	Condition 5	Additional controls added within condition 5 ensure treated wastewater is applied evenly to the sprayfield surface to minimise waterlogging and pooling and to minimise surface runoff to water courses and Salt River.
	Discharge of treated wastewater that does not meet required effluent quality leading to possible emissions of sediment, bacteria and excess nutrients	Direct discharge to land – overland runoff potentially impacting native vegetation, soil chemistry and surface water quality Excess nutrients causing growth of weed species	Local surface water Surrounding native vegetation	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Y	Conditions 5 and 21	The Delegated Officer considers the controls proposed by the Licence Holder and existing licence conditions sufficient to manage treated wastewater emissions and impacts to nearby environmental receptors. The geology and heavy clay soils beneath the sprayfield are expected to restrict vertical movement of groundwater.

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**				
								Depth to groundwater is sufficient to allow soil filtration and vegetation on the sprayfield allows nutrients to be converted into biomass; therefore, the risk of eutrophication is low. The sprayfield size of 6 ha is therefore deemed appropriate given the soil type of the area described in Table 4, the low risk of groundwater or surface water eutrophication and the distance to sensitive receptors. Given that there are no highly sensitive receptors in the vicinity, and based on the risk assessment, the Delegated Officer is satisfied that the irrigation field has been sized appropriately. Maintenance of the WWTO and sprayfield as per Condition 5 of the licence and monitoring of the effluent quality are sufficient controls for the management of this risk.

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

Table 5: Consultation

Consultation method	Comments received	Department response
Local Government Authority advised of proposal 6 May 2025	No comments received	N/A
Licence Holder was provided with draft amendment on (23/05/2025)	Comment period waived on 26/05/2025	N/A

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 6 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 6: Summary of licence amendments

Condition no.	Proposed amendments
Cover Page	Addition of DWER file number INS-0001540. Update to dates and prescribed premises category description and production capacity table to reflect the change to category 54 from category 85.
Condition 3	Changes to Table 1 - Authorised Activities to reflect the change to category 54 from 85.
Condition 5	Addition of Condition 5 and Table 3 – Infrastructure and equipment requirements, introducing operational requirements for the WWTP, irrigation sprayfield and process water pond.
Condition 10	Removal of ‘additions to WWTP and expansion of irrigation area’ from Table 6 – Infrastructure and equipment requirements table.
Condition 21	Updates to Table 11 - Monitoring of point source emissions to land.
Schedule 1: Maps	Replacement of Figure 3 with an updated map of the irrigation spray field.

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 and Environmental Regulation (DWER) 2020, *Works Approval W6407/2020/1,* Perth, Western Australia.