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	L9259/2020/1
Licence Holder	Golden Spur Resources Pty Ltd
ACN	161 329 933
File Number	APP-0026633
Premises	Bellevue Gold Project Within Mining tenements M36/24, M36/25 and M36/299 Goldfields Highway, Shire of Leonora As defined by the premises map attached to the revised licence
Date of Report	4 September 2025
Decision	Revised licence granted

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1. Decision summary

Licence L9259/2020/1 is held by Golden Spur Resources Pty Ltd (licence holder) for the Bellevue Gold Project (the premises), located within mining tenements M36/24, M36/25 and M36/299.

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 construction and operation of the premises. As a result of this assessment, revised licence L9259/2020/1 has been granted.

The revised licence issued as a result of this amendment 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 4 December 2024, the licence holder applied to the department to amend L9259/2020/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

Category 5 - (Processing or beneficiation of metallic or non-metallic ore):

- Authorise operation of the integrated waste landform tailings storage facility (IWLTSF) stage 2, as constructed under works approval W6724/2022/1; and
- Increase the assessed design capacity to 1,350,000 tonnes per year.

Category 6 - (Mine dewatering):

- Authorise dewatering of Henderson Pit and discharge of mine dewater at Westralia Pit; and
- Increase the assessed design capacity to 1,200,000 tonnes per year.

Category 54 - (Sewage facility):

- Authorise retreatment of sewage wastewater and reuse of treated wastewater at the processing plant.

Category 64 - (Class II or III putrescible landfill site):

- Authorise construction and operation of third landfill at the premises; and
- Increase the assessed design capacity to 600 tonnes per year.

At the time of submission, the licence holder had also requested to authorise the Orleans Pit (located outside of the premises boundary) as a mine dewater discharge location as well as the reuse of treated sewage wastewater for belowground irrigation at the accommodation village. However, these proposed activities have been subsequently removed from the scope of the application by the licence holder.

This amendment is limited only to changes to category 5, 6, 54 and 64 activities from the existing licence. No changes to the aspects of the existing licence relating to category 52 (electrical power generation) and 70 (screening etc. of material) 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 or throughput capacity	Proposed design or throughput capacity	Description of proposed amendment
Category 5: Processing or beneficiation of metallic or non-metallic ore	1,000,000 tonnes per annum	1,350,000 tonnes per annum	Operation Increased throughput as a result of upgrades to the processing plant. Addition of IWLTSF stage 2 onto the licence.
Category 6: Mine dewatering	1,000,000 tonnes per annum	1,200,000 tonnes per annum	Operation Increased discharge throughput of mine dewater to Henderson and Westralia Pits. Dewater Henderson Pit to Westralia Pit.
Category 52: Electric power generation	30 MW	No change	N/A
Category 54: Sewage facility	150 m^3 per day	No change	Construction Installation of pipeline from wastewater treatment plant to processing plant. Operation Reuse of treated water within the processing plant
Category 64: Class II or III putrescible landfill site	500 tonnes per annum	600 tonnes per annum	Operation Increased throughput. Construct and operate landfill trenches are new landfill location.
Category 70: Screening etc. of material.	Less than 50,000 tonnes per annum	No change	N/A

2.2.1 Increase in throughput at the ore processing plant (Category 5)

The licence holder proposed to increase the production capacity at the existing ore processing plant by 350,000 tonnes per annum, such that the assessed production capacity is 1,350,000 tonnes per annum.

The increase in production capacity will not require significant changes in infrastructure at the processing plant. Upgrades to the processing plant will be undertaken in two phases, including installation of a lead nitrate bulk storage facility, a second liquid oxygen bullet, and an additional standby Knelson Concentrator. Other works involve minor upgrades or changes to the crushing, leaching, electrowinning, and reverse osmosis circuit.

On 19 August 2025, the department wrote to the licence holder seeking to confirm whether the relevant infrastructure for facilitating the production capacity increase to 1,350,000 tonnes per annum had been constructed. On 26 August 2025, the licence holder responded confirming that the infrastructure had been constructed as they were not aware that the construction of the infrastructure was subject to assessment. On 3 September 2025, supporting documentation was provided to demonstrate that the infrastructure was installed in accordance with manufacturer specifications and that no unacceptable environmental impacts had occurred during construction.

As the department cannot retroactively assess and authorise an activity that has already been undertaken, emissions and discharges associated with the construction of the relevant infrastructure was not assessed. Going forward, only the operation of the infrastructure, as well as the proposed increase in operational production capacity to 1,350,000 tonnes per annum has been assessed.

As a result of increased processing capacity, tailings production is anticipated to follow. Tailings will continue to be deposited into the IWLTSF. While the IWLTSF currently contains sufficient capacity to store tailings, the life of the facility will be reduced due to the proposed increase in tailings production and deposition rates.

2.2.2 Operation of the Integrated Waste Landform Tailings Storage Facility (Stage 2) (Category 5)

The licence holder has applied to operate the IWLTSF (Stage 2) under licence L9259/2020/1. The IWLTSF was assessed and regulated under amended works approval W6724/2022/1, granted on 1 June 2023.

Construction

During the assessment of works approval W6724/2022/1, the licence holder had proposed to construct the IWLTSF under three stages:

- **Stage 1 –** Conversion of the Vanguard Pit into an in-pit TSF with an estimated storage life of approximately 1.15 years.
- **Stage 2 –** Conversion of the water storage dam (for storage of mine dewater from underground mine) into a TSF, with an estimated storage life of approximately 0.4 years. The water storage dam is located north of the Vanguard Pit that formed the Stage 1 in-pit TSF. At Stage 2, there is no overlap between the water storage dam and the in-pit TSF.
- **Stage 3 –** Construction of an IWLTSF utilising the former Vanguard Pit (Stage 1 in-pit TSF) and former water storage dam (Stage 2 TSF), with an estimated storage life of approximately 2.5 years. The IWLTSF will utilise the water storage dam as its north-east embankment, extending it further south to cover the in-pit TSF footprint. The downstream embankment for the IWLTSF will be constructed progressively using mine waste rock from underground exploration development as mine waste is produced and

hauled to the IWLTSF. The approved embankment crest height for the Stage IWLTSF is 484.5 mRL.

A critical containment infrastructure report for the construction of the IWLTSF Stage 2 was submitted to the department on 28 August 2024 and was assessed to have met the relevant construction and requirements specified in works approval W6724/2022/1 on 22 October 2024.

Nevertheless, the construction of the IWLTSF Stage 2 contained significant deviations from the initial assessed design (i.e., conversion of the water storage dam for tailings deposition purposes). This design was abandoned as the water storage dam (which forms the Stage 2 IWLTSF) was not able to be constructed due to shallow refusals encountered across the proposed excavation footprint. Limitations in borrow material that could be recovered also affected the water storage capacity available at the facility.

Subsequently, the licence holder modified the design of the IWLTSF Stage 2 by:

- Dividing Stage 3 (RL 484.5 m) IWLTSF embankments (which involved combining both the Stage 1 in-pit TSF and Stage 2 WSD) into two halves: north and south. The northern half was now designated as Stage 2 (replacing the WSD and original Stage 2 TSF - RL 482.5 m) and the southern half as Stage 3 (Figure 1); and
- Incorporating a high-density polyethylene (HDPE) liner into the embankment design in the 4.0 m upstream face, due to the shortage of low-permeability material.
- Incorporation of an underdrainage system and consequentially, reducing of the downstream embankment slope from 1V:3H to 1V:2.5H in localised areas to accommodate the underdrainage collection sump;
- The northern embankment crest width was modified to accommodate a diversion drain for stormwater runoff from the upstream catchment;
- Construction of a V-drain, combined with embankment erosion control and a diversion bund, to divert rainfall runoff from the upstream catchment. The V-drain alignment was modified due to shallow refusal, which prevented achieving the required depth for the channel. Bund and toe protection were provided, and culverts were installed across roads to safely carry the 1:100 annual exceedance probability (AEP) peak design flow to the other side of the roads; and
- A 0.5 m deep trench was constructed at a lower topographical section of the downstream embankment toe to intercept and collect any potential seepage from the TSF (REC 2024).

Operation

While the IWLTSF Stage 2 has been constructed to an embankment height of 484.5 mRL, tailings deposition elevation is limited by the unconstructed southern embankment, which will be constructed under the IWLTSF Stage 3. Consequently, the licence holder proposed to undertake tailings deposition at the IWLTSF in two phases:

- **IWLTSF Stage 2** – Tailings deposition elevation of 482.5 mRL (maximum deposition elevation of 482.2 mRL);
- **IWLTSF Stage 3 –** Tailings deposition elevation of 484.5 mRL (maximum deposition elevation of 484.2 mRL), where the entire facility has been constructed to the maximum authorised embankment height.

With commencement of operation of the IWLTSF Stage 2, the licence holder will aim to contain the IWLTSF Stage 2 decant pond within the Vanguard in-pit TSF (Stage 1) (REC 2024).

Due to variations in the design for the IWLTSF Stage 2 (and Stage 3 in the future), tailings storage capacities for each stage have been revised. IWLTSF (Stage 2) has an estimated storage capacity of 0.41 Mm³ for 0.57 Mt of tailings, offering seven months of storage capacity

at 55% solids (w/w) with an assumed density of 1.40 t/m³ for 1.0 million tonnes per annum (Mtpa) (REC 2024). Tailings deposition in IWLTSF Stage 3 will have an estimated combined storage capacity of 1.55 Mm^3 for 2.11 Mt of tailings, offering 2.1 years of storage capacity.

As with current operations, tailings will be deposited subaerially in thin lifts no more than 300 mm in depth to promote formation of a tailings beach. Spigots and launchers were installed in spacing of approximately 20 m.

Decant water will be recovered from the IWLTSF Stage 2 using a floating turret and trailer-mounted pump, connected to a return line to send decant water to the Vanguard Pit in-pit TSF, where existing pumping infrastructure will return the water to the processing plant for reuse.

To manage tailings seepage at the facility, the IWLTSF Stage 2 has been equipped with an underdrainage system, upstream toe drains, finger drains, and a downstream embankment toe seepage drain. Seepage collected at the underdrainage sumps will also be pumped to the Vanguard Pit in-pit TSF and ultimately be recovered for reuse in the processing circuit. V-drains were installed around the downstream toe of the northern embankment to divert surface runoff away from the facility.

Groundwater monitoring bores for IWLTSF Stage 2

Construction of monitoring bores was authorised under works approval W6724/2022/1 to monitor for potential tailings seepage. The monitoring bores associated with IWLTSF Stage 2 are MB02A (consisting of deep and shallow paired bores) and MB03A, which were recently installed under works approval W6724/2022/1 to replace decommissioned MB02 and MB03, respectively (Figure 1). Due to the modified design and footprint of the IWLTSF Stage 2, existing MB04 and MB05 can also be used for monitoring ambient groundwater impacts associated with tailings deposition at Stage 2.

Works approval W6724/2022/1 further requires the installation of additional groundwater monitoring bores MB06, MB07, MB08, MB09, and MB10 as part of the IWLTSF Stage 3 works (Figure 1). The monitoring bores have not been installed at the time of this assessment.

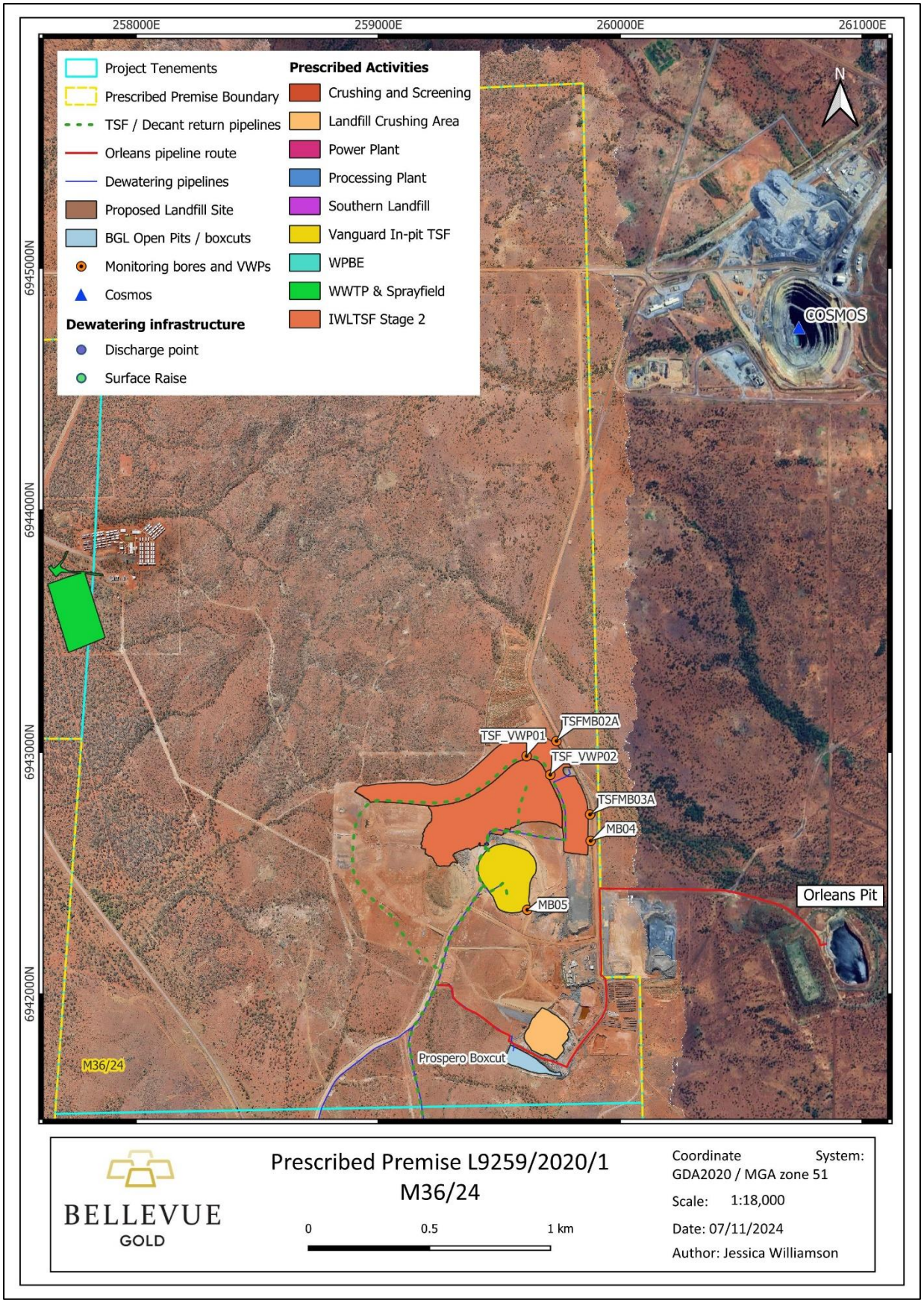

Figure 1: IWLTSF Stage 1 (Vanguard in-pit TSF) and Stage 2, as well as associated monitoring bores

Time limited operation monitoring review

Following construction of the IWLTSF (Stage 2), the licence holder commenced time limited operation of the facility under works approval W6724/2022/1. The works approval required monitoring of the decant pond, as well as ambient groundwater at MB02A, MB03A, and MB04 during the time limited operation.

Key findings from preliminary monitoring data includes:

- Between November 2024 and January 2025, monthly tailings deposition throughput has ranged between 79,037 kL and 106,474 kL. Weak acid dissociable (WAD) cyanide concentration within the decant pond water has been detected above the limit of reporting, from 23.4 mg/L to 47.4 mg/L. The limit of 50 mg/L for WAD cyanide specified in works approval W6724/2022/1 was not exceeded.
- Since August 2023, standing water levels have become shallower over time during time limited operation (Figure 2a). As of January 2025, standing water level in monitoring bore MB04 was the deepest, at 12.69 metres below ground level (mbgl), while the shallowest was measured in MB02A, at 7.9 mbgl.
- Notably, monitoring bore MB02AS was a shallow bore that remained dry throughout most of the monitoring period, until the latest monitoring event, where standing water level was measured at 8.16 mbgl in January 2025 (Figure 2a).
- Groundwater pH has remained stable at all monitoring locations, with the pH at individual monitoring locations ranging between slightly acidic (MB02D) and alkaline (MB02AS, MB03A, MB04).
- Total dissolved solids (TDS) have varied significantly between monitoring locations (Figure 2b). Monitoring bore MB02D was highly saline, ranging between 53,300 mg/L and 71,700 mg/L, while MB04 was saline, ranging between 5,480 mg/L and 11,200 mg/L, and MB03A being brackish-saline, ranging between 2,570 mg/L and 6,130 mg/L. Notably, TDS levels were shown to decrease over time at both MB03A and MB04.
- Groundwater is dominated by chloride and sodium ions, though concentrations varied between monitoring locations, consistent with variations in TDS observed. Monitoring bore MB02AD also contained high concentrations of calcium and magnesium.
- Sulfate concentrations remained relatively low, ranging from 327 mg/L to 1,080 mg/L, with declining trends observed over time at MB03A and MB04. Notably, the sole monitoring event for MB02AS returned a sulfate concentration of 8,200 mg/L, which was significantly higher than sulfate concentrations detected at around monitoring bores.
- High levels of nitrate have been consistently detected at all monitoring locations.
- During all monitoring events, total and WAD cyanide were detected below their respective limit of reporting, except for MB02AS, which contained 0.01 mg/L of total cyanide, though WAD cyanide remained at <0.004 mg/L.
- For dissolved metals and metalloids, arsenic, cadmium, chromium, manganese, molybdenum, nickel, and zinc were consistently detected above their respective limit of reporting. In most cases, these parameters were already at detectable concentrations during baseline monitoring in August 2023.

Based on existing monitoring data, tailings seepage from deposition into the IWLTSF Stage 2 has not had a significant impact on groundwater quality around the facility. However, the impact of tailings deposition on the local water table has been evident, as all monitoring bores have experienced a shallowing of standing water level over time, since commencement of tailings deposition (Figure 2a). The lack of significant change in groundwater quality does not necessarily represent a total lack of impact, as solute transport may experience a delayed effect in groundwater.

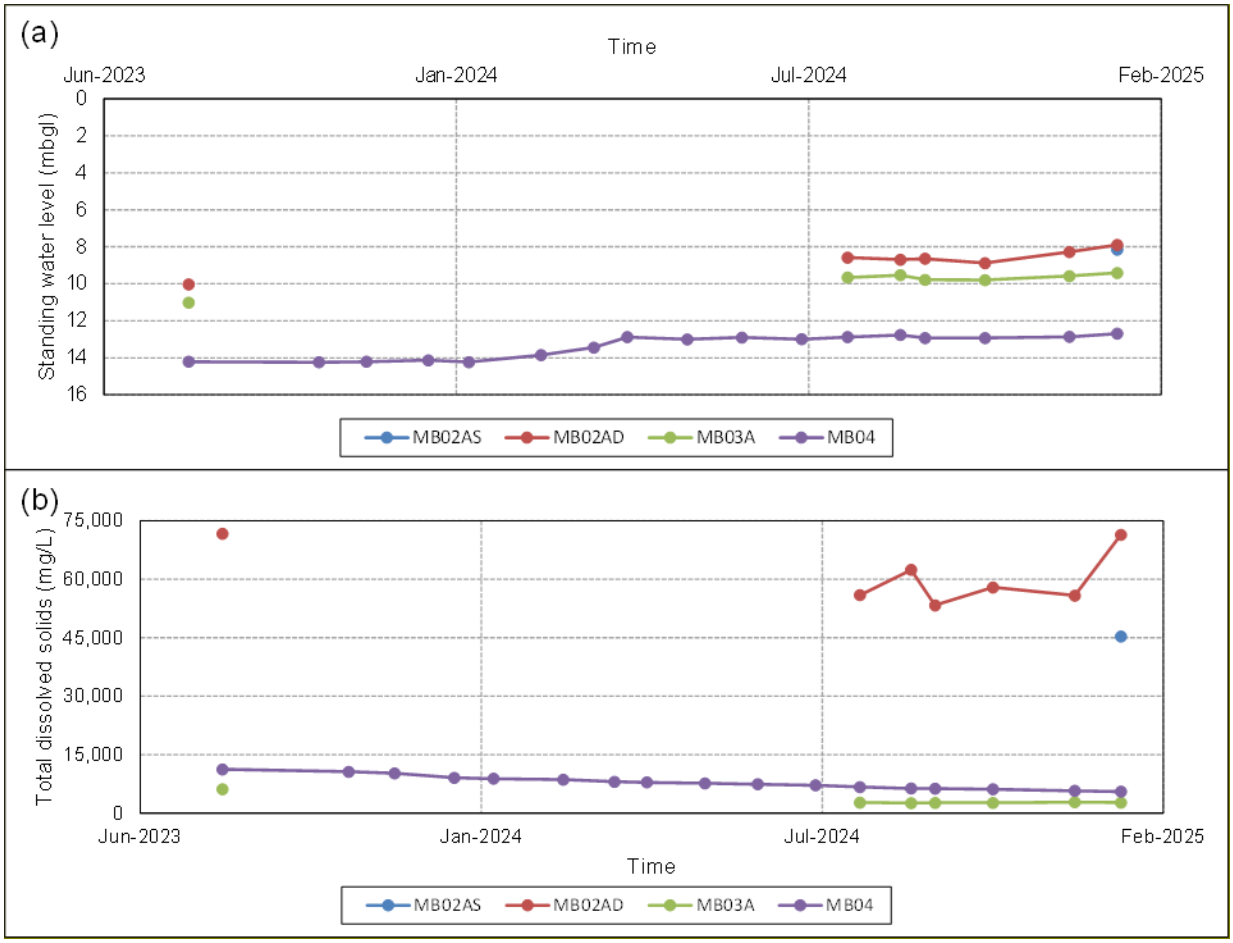

Figure 2: Ambient groundwater monitoring of (a) standing water level and (b) total dissolved solids during time limited operation of IWLTSF Stage 2

2.2.3 Increase in throughput for discharge of mine dewater (Category 6)

Currently, the licence holder dewaters the Bellevue underground mine to maintain dry working conditions. The mine dewater is discharged into the Westralia and Henderson pit voids (which are authorised discharge points on the existing licence) (Figure 3).

Recently, the licence holder has experienced difficulties in maintaining consistent pumping rates due to pump issues. While the pumps have been replaced, approximately 370,000 kL of excess water needs to be removed to ensure safe working conditions in the underground workings. The dewatering and subsequent discharge of this excess mine dewater would exceed the assessed production capacity of 1,000,000 tonnes per annual period on existing licence L9259/2020/1. Thus, the licence holder has requested to increase the Category 6 production capacity to 1,200,000 tonnes per annual period.

Under the increased production capacity, mine dewater will continue to be sent to and discharged into the Westralia and Henderson pits, with no proposed changes to the current water balance and authorised discharge locations. Existing freeboards will be maintained.

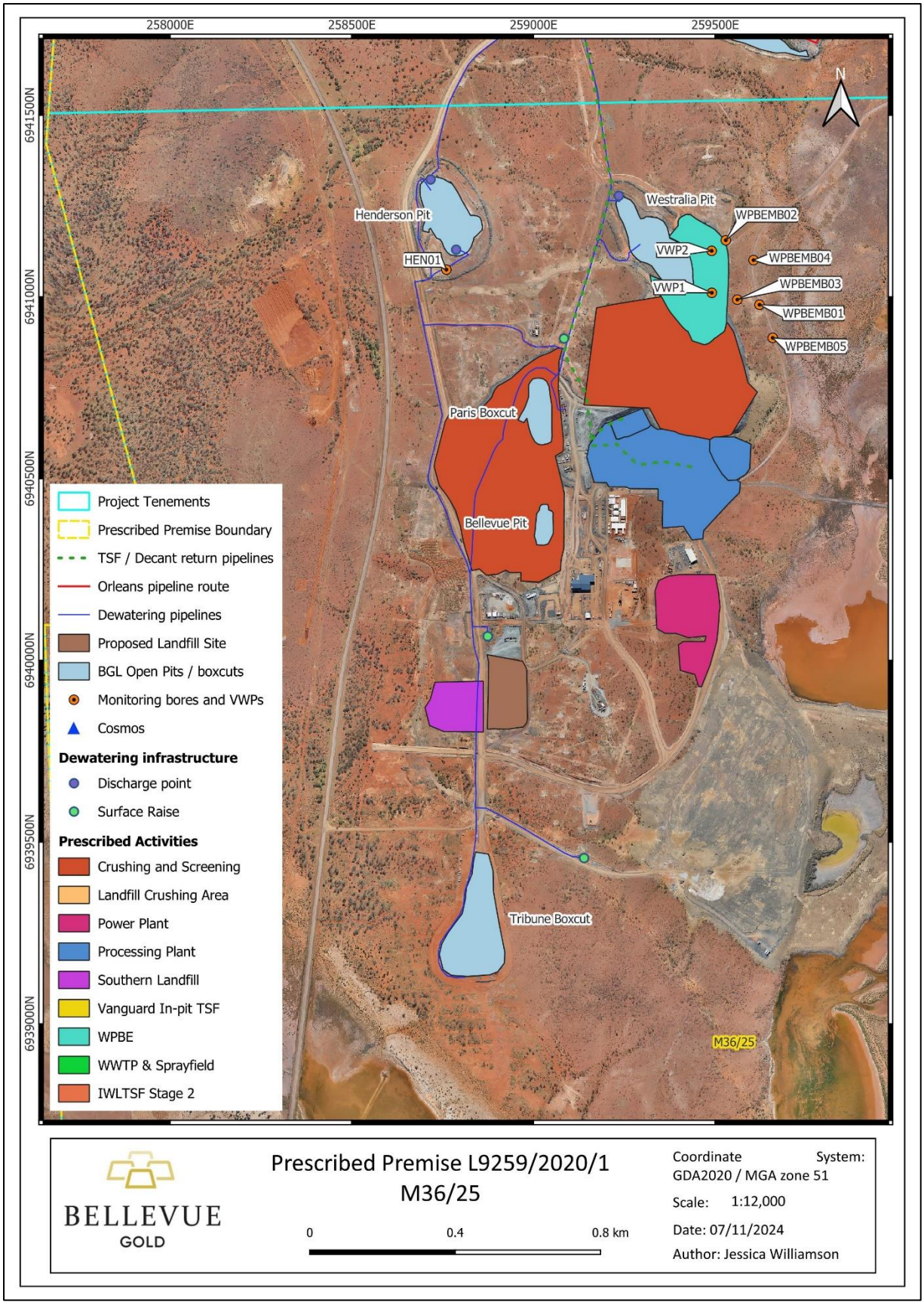

Figure 3: Site layout

2.2.4 Dewatering of Henderson Pit into Westralia Pit

The licence holder believes that groundwater inflow into the underground mine is currently higher than predicted. The inflow has been assumed to migrate through old workings and exploration boreholes connected to the Henderson Pit, which is currently authorised to store mine dewater from the underground mine. Consequently, the licence holder proposed to dewater the Henderson pit in order to investigate hydraulic connectivity between the pit and the underground mine. Mine dewater from Henderson pit was proposed to be discharged to Westralia pit, which is the other discharge location authorised to accept mine dewater at the premises.

In 2022, the licence holder applied for an amendment to works approval W6724/2022/1 to construct the Westralia pit berm expansion (WPBE). The WPBE aimed to increase mine dewater storage capacity within the Westralia Pit by constructing a berm on the topographically lower boundaries of the pit. The works were divided into a first phase to 475 mRL and a second phase to 479.5 mRL. Upon completion of the WPBE Phase 2, Westralia Pit would contain approximately 482.000 m^3 of maximum water storage capacity.

Seepage controls relating to the WPBE included a low-permeability clay apron or lining installed along the storage basin from the perimeter embankment to the outside edge of the existing pit development, as well as a cut-off trench constructed beneath the berm expansion embankment to intercept lateral seepage beneath the embankment.

2.2.5 Reuse of treated wastewater for ore processing (Category 54)

The licence holder has constructed and currently operates a wastewater treatment plant (WWTP) north-west of the mining operations at the premises. The WWTP is located next to the accommodation village and treats wastewater from the accommodation village using a sequencing batch reactor (SBR) system consisting of five treatment stages. Treated wastewater is then discharged at an irrigation sprayfield, located south of the WWTP.

As part of this amendment, the licence holder has requested to redirect the treated wastewater to the processing plant for reuse in the processing circuit. To ensure the treated wastewater will be safe for reuse, a new polishing filtration system and up to two 30 kL buffer tanks will be added to the existing WWTP, such that the treated wastewater can meet processing requirements (Table 2). The proposed tertiary filtration system will comprise media filters, cartridge filters, and turbidity meter. The proposed upgrade to the existing WWTP will not result in an increase to the design capacity of the WWTP, which will remain as 150 m^3/day.

In addition, a 63 mm-diameter HDPE pipeline will be installed aboveground from the wastewater treatment plant to the processing plant, within an existing pipeline corridor (Figure 4). Once operational, the pipeline will send treated wastewater to the processing plant.

The licence holder has requested that the existing sprayfield be maintained on the licence as it may act as a backup option for treated wastewater disposal in situations where the treated wastewater cannot be reused for processing (i.e., water quality issues, pipeline maintenance, etc).

Table 2: Proposed treated wastewater quality criteria

Parameter	Unit	Untreated wastewater	Current treated water quality	Limit in existing licence L9259/2020/1	Proposed criteria
Escherichia coli	cfu/100 mL	8,000	1	<1,000	<10

Parameter	Unit	Untreated wastewater	Current treated water quality	Limit in existing licence L9259/2020/1	Proposed criteria
Biochemical oxygen demand	mg/L	975	4	<20	<20
Total suspended solids	mg/L	4,350	6	<30	<10
pH	pH unit	7.33	7.84	Between 6.5 and 8.6	Between 6.5 and 8.5
Turbidity	NTU	Not monitored.	Not monitored.	None.	<5

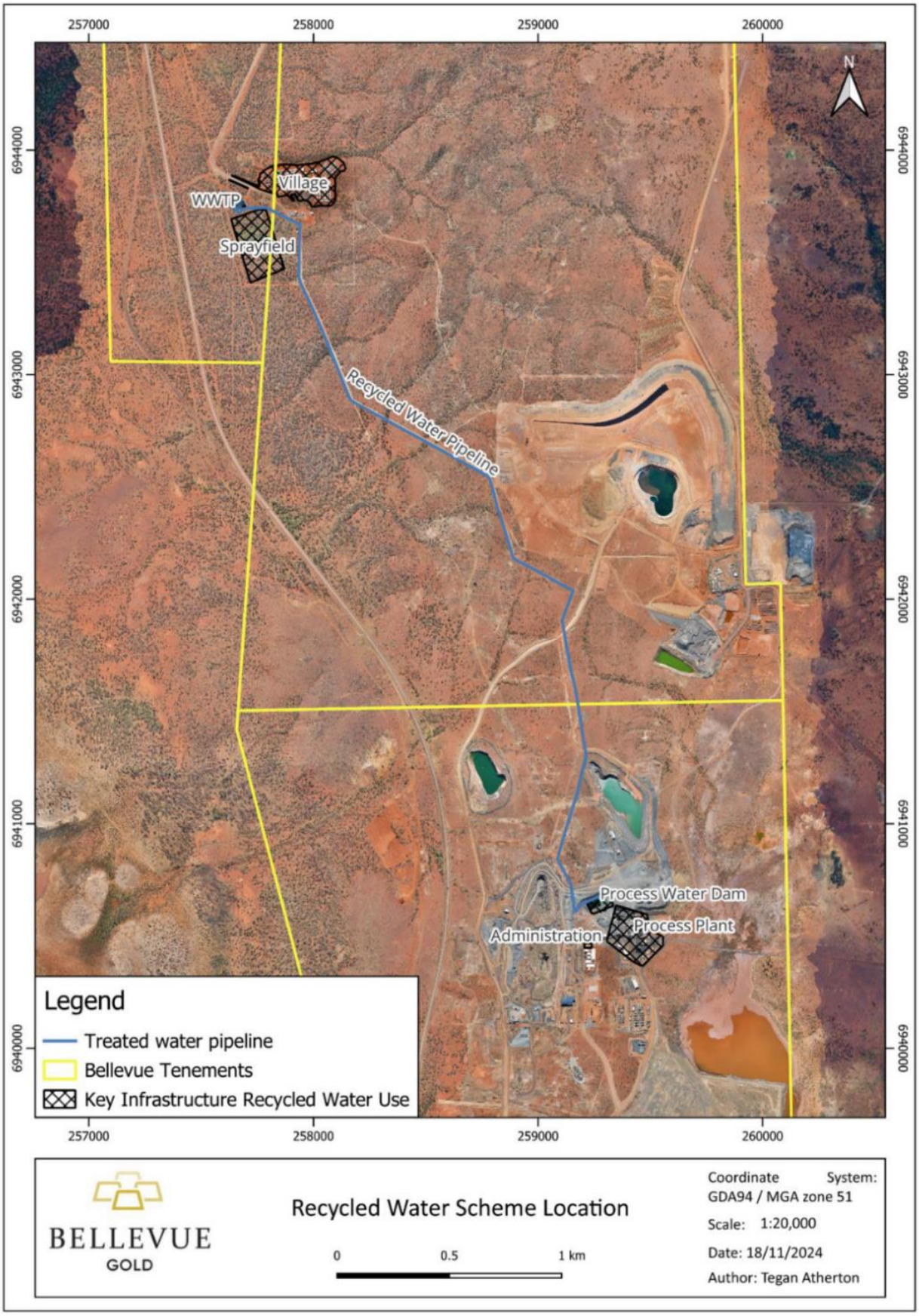

Figure 4: Proposed pipeline route for reusing of treated wastewater for ore processing

2.2.6 Additional putrescible landfill location and increase in production capacity (Category 64)

Existing licence L9259/2020/1 current authorises the operation of two putrescible landfills at the premises: the Prospero landfill located on the Prospero waste rock dump (constructed under works approval W6479/2020/1), and the South Landfill, located between the Bellevue pit and Tribune boxcut (authorised under existing licence L9259/2020/1).

To date, the licence holder has only utilised the Prospero landfill, which is nearing its landfilling capacity. On the other hand, the South Landfill has remained completely unutilised due to its proximity to the premises entrance.

To address future landfilling needs, the licence holder has proposed to construct a third landfill location at the premises (Figure 3). The proposed Tribune Landfill will be located across the road from the South Landfill was seen as a more favourable location due to being more discreet and less visible from both the premises entrance and the nearby highway.

The proposed landfill will be approximately 2.1 hectares (i.e., approximately 100 m by 200 m in area), within a historically disturbed area with good access to transport corridors and is located away from drainage lines. The proposed landfill will accept the same waste type and be operated in accordance with the same requirements as existing landfills authorised under existing licence L9259/2020/1.

In addition to the construction and operation of the Tribune Landfill, the licence holder has requested an increase to Category 64 production capacity from 500 tonnes per annual period to 600 tonnes per annual period to account for generation of construction waste at the premises. The licence holder will continue to send recyclable waste material offsite to ensure landfilling is minimised where able.

2.3 Legislative context

2.3.1 Mining Act 1978

Under the *Mining Act 1978*, the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) have assessed and approved Mining Proposal Reg ID 128981 on 26 February 2025. The approved mining proposal consisted of construction and operation of the IWLTSF, discharge of mine dewater into the Henderson Pit and Westralia Pit (as well as additional storage capacity afforded by the WPBE), as well as ore processing up to 1,350,000 tonnes per annum. It is the licence holder's responsibility to ensure they have all required approvals prior to operation.

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 construction and operation which have been considered in this Amendment Report are detailed in Table 3 below.

Table 3 also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 3: Licence Holder controls

Emission	Sources / Activities	Potential pathways	Proposed controls
Construction			
Dust	Installation of tertiary filtration system at existing wastewater treatment plant, and pipeline between wastewater treatment plant and processing plant; Construction of landfill trenches at Tribune Landfill.	Air / windborne pathway	• Dust suppression will be undertaken on unsealed roads and open areas during construction activities to manage dust generation.
Operation (Category 5: Processing or beneficiation of metallic or non-metallic ore)			
Dust	Operation of ore processing plant at production capacity of 1,350,000 tonnes per annual period	Air / windborne pathway	No additional controls proposed. Existing licence conditions include: • **Condition 2** – At the crushing and screening plant, waste rock must be wetted down prior to being fed into the crusher. • **Condition 2** – At the crushing and screening plant, water carts must be available at all times during operation of the plant to suppress dust. • **Condition 2** – Misting systems and sprinklers fitted on the crushers must be maintained and operated to minimise dust.
Sediment laden stormwater		Overland runoff during rainfall events	No additional controls proposed. Existing licence conditions include: • **Condition 2** – At the crushing and screening plant, stormwater diversion bunds must be present to retain potentially contaminated surface water flows within the

Emission	Sources / Activities	Potential pathways	Proposed controls
			plant footprint. • **Condition 2** – Processing plant footprint must be contained within Catchment Area 1, such that stormwater runoff will be directed to site drainage pond.
Hydrocarbon, chemical reagents and contaminated water		Loss of containment (e.g., spills and leaks)	No additional controls proposed. Existing licence conditions include: • **Condition 1** – Requirement to immediately recover, remove and dispose of any spills of environmentally hazardous materials, including process chemicals or hydrocarbons. • **Condition 2** – Processing plant footprint must be contained within Catchment Area 1, such that spills or overflows of process water, ore slurry, or stormwater runoff will be directed to site drainage pond. Surface water from Catchment Area 2 must be diverted away from entering Catchment Area 1. • **Condition 2** – Water collected in the Site Drainage Pond must be removed following a rainfall event by pumping it to the Process Water Pond, in order to maintain sufficient storage capacity. Other water storage ponds (including process water pond, raw water pond and water services) must be lined with high-density polyethylene (HDPE), inspected every 12 hours and be maintained accordingly. • **Condition 2** – Sump pumps must be available at all times and operated as required to maintain capacity.
Tailings supernatant	Tailings deposition into IWLTSF Stage 2	Vertical infiltration and lateral migration of seepage through base and walls of IWLTSF (Stage 2)	• IWLTSF Stage 2 embankments have been constructed with compacted mine waste, low permeability materials, and HDPE liner on the inner wall to minimise seepage. • Underdrainage system and cut-off trench have been installed to lower phreatic surface against the IWLTSF Stage 2 embankment and capture seepage under the perimeter embankment, respectively. Existing controls include: • Decant water will be recovered to maximise consolidation of tailings.

Emission	Sources / Activities	Potential pathways	Proposed controls
			• Pre-leach and tailings thickeners will be utilised to maximise tailings density prior to deposition at IWLTSF Stage 2. Existing licence conditions include: • **Condition 2** – At the Vanguard in-pit TSF (Stage 1), the floating decant pump must be moved and positioned to effectively remove decant water from the in-pit TSF. • **Condition 12** – Requirement to continuously monitor volume of tailings discharged into the Vanguard in-pit TSF (Stage 1). • **Condition 13** – Monitoring bores associated with the Vanguard in-pit TSF (Stage 1) must be monitored monthly for standing water level and chemical parameters.
		Direct ingestion by terrestrial fauna and avifauna	No additional controls proposed. Existing controls include: • Cyanide concentrations in tailings slurry will be regularly monitored by a CN analyser at the processing plant. • Hydrocarbon peroxide will be added to the tailings slurry, where cyanide concentrations were found to have exceeded internal limits. • IWLTSF Stage 2 and associated return water ponds will be inspected daily, including for usage by fauna. • Discharge of hypersaline tailings slurry (based on hypersaline process water) will reduce palatability of water for faunal ingestion. • Pre-leach and tailings thickeners will be utilised to reduce decant water available for faunal ingestion. • Ambient groundwater monitoring will continue to be undertaken in accordance with licence L9259/2020/1.
Tailings slurry		Overtopping of IWLTSF Stage 2, resulting in direct discharge	• IWLTSF Stage 2 design complies with Australian National Committee on Large Dams (ANCOLD) and relevant guidelines by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).

Emission	Sources / Activities	Potential pathways	Proposed controls
		to land	• Design freeboard for the IWLTSF Stage 2 was designed to be sufficient to contain rainfall from a 1:100 annual exceedance probability (AEP) storm event for 72 hours. • Routine freeboard monitoring will be undertaken at the IWLTSF Stage 2 embankments. • IWLTSF Stage 2 will undergo routine geotechnical auditing.
Tailings slurry / return water		Loss of containment (e.g., pipeline leaks and ruptures), resulting in discharge to land	No addition controls proposed. Existing controls include: • All tailings and return water pipelines (excluding pipelines on the IWLTSF embankments) have been installed within earthen bunds with sufficient capacity to contain any spill for a period of time equal to the time between inspections. • Scour pits have been installed at topographical low points along the pipeline corridor to collect and contain any pipeline spills or leaks. • Pipelines will be inspected daily. • All tailings spills will be cleaned up and reported immediately. Existing licence conditions include: • **Condition 1** – Requirement to immediately recover, remove and dispose of any spills of environmentally hazardous materials. • **Condition 2** – Tailings and return water pipelines must be operated and maintained within secondary containment with adequate capacity to contain any spill for a period equal to the time between routine inspections. • **Condition 2** – Tailings and return water pipelines must be equipped with remote monitoring to detect spills. • **Condition 2** – Tailings and return water pipelines must be inspected once every 12 hours during operations.
Operation (Category 6: Mine dewatering)			

Emission	Sources / Activities	Potential pathways	Proposed controls
Hypersaline mine dewater	Dewatering of underground mine and discharge of mine dewater to Henderson Pit and Westralia Pit at an increased production capacity of 1,200,000 tonnes per annual period; Dewatering of Henderson Pit and discharge of pit lake water to Westralia Pit.	Overtopping of Henderson Pit and/or Westralia Pit berm expansion, resulting in direct discharge to land	No additional controls proposed. Existing licence conditions include: • **Condition 2 –** Freeboard of at least 1.5 m from the lowest point of each pit must be maintained, and one metre from the authorised embankment crest al the Westralia Pit Berm Expansion. • **Condition 2 –** Westralia Pit Berm Expansion must be visually inspected for freeboard and berm integrity at least once every 12 hours, with no more than 15 hours between inspections. • **Condition 8** – An annual limit of 1,000,000 kL is specified for the discharge of mine dewater into the Henderson Pit and Westralia Pit. • **Condition 8** – A freeboard limit of 468.5 mAHD and 477.15 mAHD is specified for the Henderson Pit and Westralia Pit, respectively. • **Condition 12** – Volume of mine dewater discharged to Henderson Pit and Westralia Pit, as well as the pit lake elevation must be monitored monthly. • **Condition 23** – The licence holder must develop a monthly water balance for the premises, including water abstracted and discharged.
		Vertical infiltration and lateral migration of seepage through base and walls of Henderson Pit and/or Westralia Pit berm expansion	• Seepage interception trench has been installed to capture seepage to the east of Westralia Pit. The trench has been extended further north to capture seepage in other seepage zones. • A northern and southern seepage collection sump has been constructed to capture seepage from additional seepage zones identified. • Up to ten boreholes will be advanced to investigate and identify preferential flow pathways along eastern perimeter of Westralia Pit, where up to three seepage recovery bores will be installed to control impacts of groundwater mounding (if sufficient yield). The remaining boreholes will be converted to monitoring bores with sufficient casing diameter to fit submersible pumps for low-yield seepage recovery, if required. Existing controls include:

Emission	Sources / Activities	Potential pathways	Proposed controls
			• Low permeability clay apron was constructed within the upstream embankment of the Westralia Pit berm expansion. Existing licence conditions include: • **Condition 8** – An annual limit of 1,000,000 kL is specified for the discharge of mine dewater into the Henderson Pit and Westralia Pit. • **Condition 12** – Volume of mine dewater discharged to Henderson Pit and Westralia Pit, as well as the pit lake elevation must be monitored monthly. • **Condition 13** – Monitoring bores associated with Henderson Pit and Westralia Pit must be monitored monthly for standing water level and total dissolved solids. • **Condition 17** – Vegetation condition monitoring must be undertaken to the east of Westralia Pit every quarter for a period of one year. • **Condition 23** – The licence holder must develop a monthly water balance for the premises, including water abstracted and discharged. • **Condition 24** – The licence holder must prepare a trigger action response plan to identify trigger values and trigger events for potential seepage impacts to native vegetation at Westralia Pit.
		Loss of containment (e.g., pipeline leaks and ruptures), resulting in discharge to land	No additional controls proposed. Existing controls include: • Dewatering pipelines are located within an earth bund or V-drain with sufficient capacity to contain any spill for a period of time equal to the time between inspections. • Scour pits have been installed at topographical low points along the pipeline corridor to collect and contain any pipeline spills or leaks. • Dewatering pipelines will be inspected every 12 hours. • All pipeline spills will be cleaned up and reported immediately. Existing licence conditions include: • **Condition 1** – Requirement to immediately recover, remove and dispose of any

Emission	Sources / Activities	Potential pathways	Proposed controls
			spills of environmentally hazardous materials. • **Condition 2** – Dewatering pipelines must be within secondary containment with sufficient capacity to contain any spill for a period equal or greater than the time between routine inspections. • **Condition 2** – Dewatering pipelines must be inspected at least once every 12 hours.
Operation (Category 54: Sewage facility)			
Treated wastewater	Transfer of treated wastewater from wastewater treatment plant to processing plant for reuse	Loss of containment (e.g., pipeline leaks and ruptures), resulting in discharge to land	• Pipeline between the wastewater treatment plant and processing plant will be installed aboveground within an existing pipeline corridor. • Pipeline will be equipped with a flowmeter. • Pipeline will be visually inspected twice daily. • Existing sprayfield will remain operational as a back-up for discharge of treated wastewater, if reuse is not feasible (e.g., unsatisfactory water quality, pipeline undergoing maintenance, etc). Existing licence conditions include: • **Condition 2** – The licence holder must clean up spills of wastewater and chemicals outside of a vessel/container immediately. • **Condition 2** – Volumetric flow meters must be maintained at the wastewater treatment plant outlet (to the irrigation sprayfield). • **Condition 8** – Limits are specified for physical and chemical parameters of treated wastewater. • **Condition 16** – Treated wastewater must be monitored weekly for chemical parameters.
Operation (Category 64: Class II and III putrescible landfill site)			
Dust	Disposal of inert and	Air / windborne	No additional controls proposed.

Emission	Sources / Activities	Potential pathways	Proposed controls
	putrescible waste at landfills up to 600 tonnes per annual period; and Operation of putrescible landfill activities at Tribune Landfill.	pathway	Existing controls include: • Dust suppression will be undertaken on unsealed roads and open areas during construction activities to manage dust generation. Existing licence condition include: • **Condition 2** – A water cart must be used to minimise dust generation, as required.
Windblown waste		Air / windborne pathway	No additional controls proposed. Existing controls include: • Landfill trench will be constructed to specific dimensions, with footprint of 30 m by 4 m and nominal depth of 4 m. • Landfill boundary will be fenced, with windblown waste collected and returned to the landfill. • Excavated materials will be stockpiled around the landfill trench to act as windrows to provide cover. • Landfill trenches will receive inert waste cover of at least 100 mm at least fortnightly. • Waste throughput and landfill capacity will be monitored to ensure landfill trench does not exceed designated capacity. Existing licence conditions include: • **Condition 2** – Waste must be placed within the defined trenches, with tipping area being no less than 30 m in length. • **Condition 2** – The licence holder must take all reasonable and practical measures to ensure that no windblown waste escapes from the premises. Windblown waste must be collected at least fortnightly and returned to the tipping area. • **Condition 8** – An annual limit of 500 tonnes is specified for the landfilling of putrescible and inert waste.

Emission	Sources / Activities	Potential pathways	Proposed controls
Leachate		Vertical infiltration and lateral migration of leachate through base and walls of landfill trench	No additional controls proposed. Existing controls include: • Excavated materials will be stockpiled around the landfill trench to act as bunding and prevent ingress of surface water runoff. • Upon reaching capacity, the landfill trench will be backfilled to create a water-shedding mound. • Only authorised waste types will be allowed to be disposed within the landfill trench. • Landfill trenches will receive inert waste cover of at least 100 mm at least fortnightly. • Waste throughput and landfill capacity will be monitored to ensure landfill trench does not exceed designated capacity. Existing licence conditions include: • **Condition 3** – Requirements for cover thickness and minimum cover thickness for each waste type at landfill trenches. • **Condition 8** – An annual limit of 500 tonnes is specified for the landfilling of putrescible and inert waste.

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 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the Prescribed Premises *(Guideline: Environmental siting* (DWER 2020a)).

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

Human receptors	**Distance from prescribed activity**
None	N/A
Environmental receptors	**Distance from prescribed activity**
Native vegetation	The premises is located within the Austin Botanical District, typified by Mulga (*Acacia aneura*) woodplains on the plains, scrub and shrublands on hills and rises, Mulga and *Eremophila* shrublands on stony plains, and chenopod communities on duplex soils. Two detailed flora surveys undertaken across 2,428.4 hectares across the premises' surrounds identified a total of 345 vascular flora species across 19 vegetation communities. Based on aerial imagery, native vegetation is present throughout the premises and abuts key infrastructure for the proposed activities, though their condition is likely degraded to some extent due to historic mining activities.
Priority ecological communities	The premises is located within a Priority 1 '*Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation'*, which overlaps with the proposed activities (e.g., processing plant, IWLTSF Stage 2, Henderson Pit, Westralia Pit, treated wastewater pipeline, etc) (Figure 5). The licence holder stated that the majority of the PEC within the premises is in a degraded state due to historical mining activities. While not within the premises, other PECs are also present around the premises, including the Priority 1 '*Yakabindie calcrete groundwater assemblage type on Carey palaeodrainage on Yakabindie Station'* and Priority 1 *'Lake Miranda east calcrete groundwater assemblage types on Carey palaeodrainage on Yakabindie Station'* (Figure 5). While these are unlikely to be directly impacted by the proposed activities, they are closely associated with the nearby Lake Miranda, which may be impacted by the proposed activities.
Conservation significant flora	Two detailed flora surveys undertaken across 2,428.4 hectares across the premises' surrounds identified three priority flora species (Figure 6): 1. *Gravillea inconspicua* (Priority 4) – populations found to the south of the processing plant, as well as north of the mining and processing area, near the accommodation village and wastewater treatment plant; 2. *Hibiscus* sp. Perrinvale Station (Priority 3) – smaller population

	found to the south of the processing plant, co-occurring with *Gravillea inconspicua*; and 3. *Goodenia lyrate* (Priority 3).
Fauna	A total of 110 vertebrate fauna species has been sighted across the premises' surrounds, including one amphibian species, 32 reptiles species, 64 avifauna species, and 13 mammal species (of which nine were native species). Of these sighted species, five were identified as being conservation significant fauna: 1. *Tringa nebularia* (common greenshank); 2. *Calidris acuminata* (sharp-tailed sandpiper); 3. *Aprasia repens* (sandplain worm-lizard); 4. *Ardeotis australis* (Australian bustard); and 5. *Burhinus grallarius* (bush stone-curlew). Several other conservation significant fauna, primarily migratory wetland birds, were identified as potentially occurring at the broader surroundings of the premises, though they were not sighted during the formal survey program.
Surface water bodies	The premises is located on a gently undulating landscape, consisting of minor ridges, undulating plains to the east and hills to the west. There are no wetlands and permanent surface water features at the premises, with all drainage lines being ephemeral, driven by seasonal, erratic rainfall patterns of the region. A number of drainage lines are located nearby the IWLTSF Stage 2, flowing south-eat and south-west. Drainage lines are also present approximately 250 m from the Henderson Pit and Westralia Pit. Ephemeral drainage lines at the premises generally flow to the south-east or south-west, eventually leading to Lake Miranda to the south. Lake Miranda is a salt lake with periodic inundation driven by seasonal rainfall events. A portion of the Lake Miranda floodplain is overlaps with the south-eastern portion of the premises, primarily where the historic TSF is located. Lake Miranda is located downstream of the premises at approximately (Figure 5): • 350 m east of the processing plant; • 1.6 km south of the IWLTSF Stage 2; • 1.4 km west of the Henderson Pit and 500 m south-east of the Westralia Pit; • 550 m to the east and 900 m to the southwest of the Tribune Landfill.
Groundwater aquifer	The primary aquifer of relevance to mining and dewatering activities is the fractured rock aquifer, comprising greenstones, granitoids and minor intrusive rocks. As the greenstone belt is aligned in a north-to-south orientation, the associated faults and fractures are also in this alignment. Known paleochannel aquifer systems are located to the south and east of the premises. Pre-mining water table at the premises ranged between 15 mbgl and 30 mbgl, with relatively flat hydraulic gradient towards the south, which

	was consistent with regional groundwater flow direction following major paleodrainage lines towards Lake Miranda, which acts as a groundwater sink. Accordingly, the water table at Lake Miranda is significantly shallower than at the premises, typically at 2 mbgl or less. Groundwater was characterised as hypersaline, with total dissolved solids from 90,000 mg/L to 120,000 mg/L. The premises is located within the Goldfields Groundwater Area, where groundwater is primarily abstracted for mining and ore processing purposes.
Cultural receptors	**Distance from prescribed activity**
Aboriginal heritage site	A number of registered Aboriginal cultural heritage sites are located within the premises. These sites primarily consist of locations for ritual and ceremonies, creation/dreaming narrative, and artefacts and scatter. The premises also overlaps with the Yakamunti A-B (Place ID 2698; creation/dreaming narrative) and Lake Miranda (Katawili) (Place ID 1301; ritual/ceremonial, creation/dreaming narrative, plant resource) heritage sites, which encompass the Lake Miranda salt lake area. To manage these heritage sites, the licence holder has executed a Native Title Agreement with the Tjiwarl Aboriginal Corporation in September 2022 to ensure that cultural and heritage considerations have been included in the design and layout of the premises, protecting sensitive areas, and developing a co-design Cultural Heritage Management Plan to manage ongoing activities.

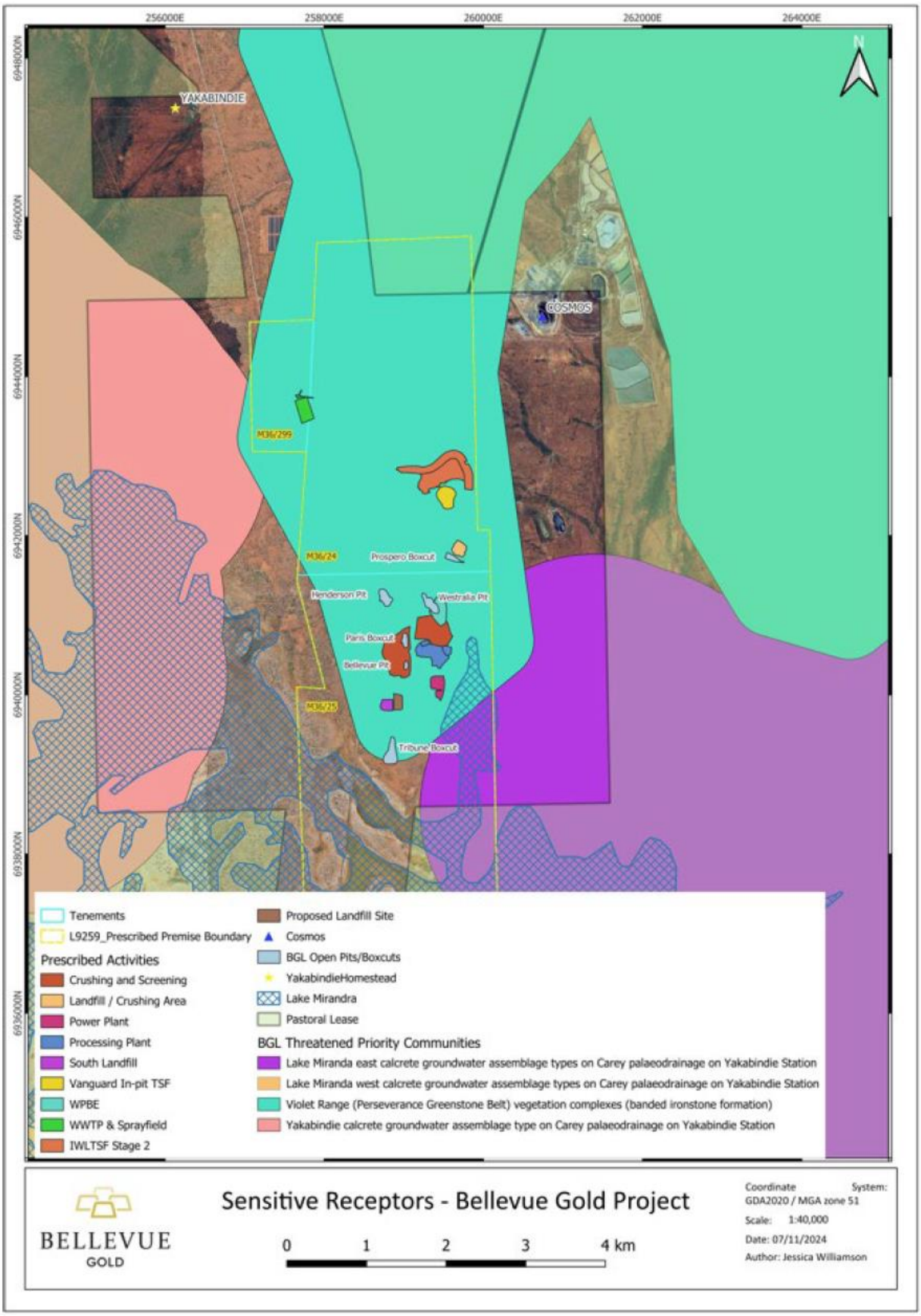

Figure 5: Priority ecological communities and surface water bodies at the premises

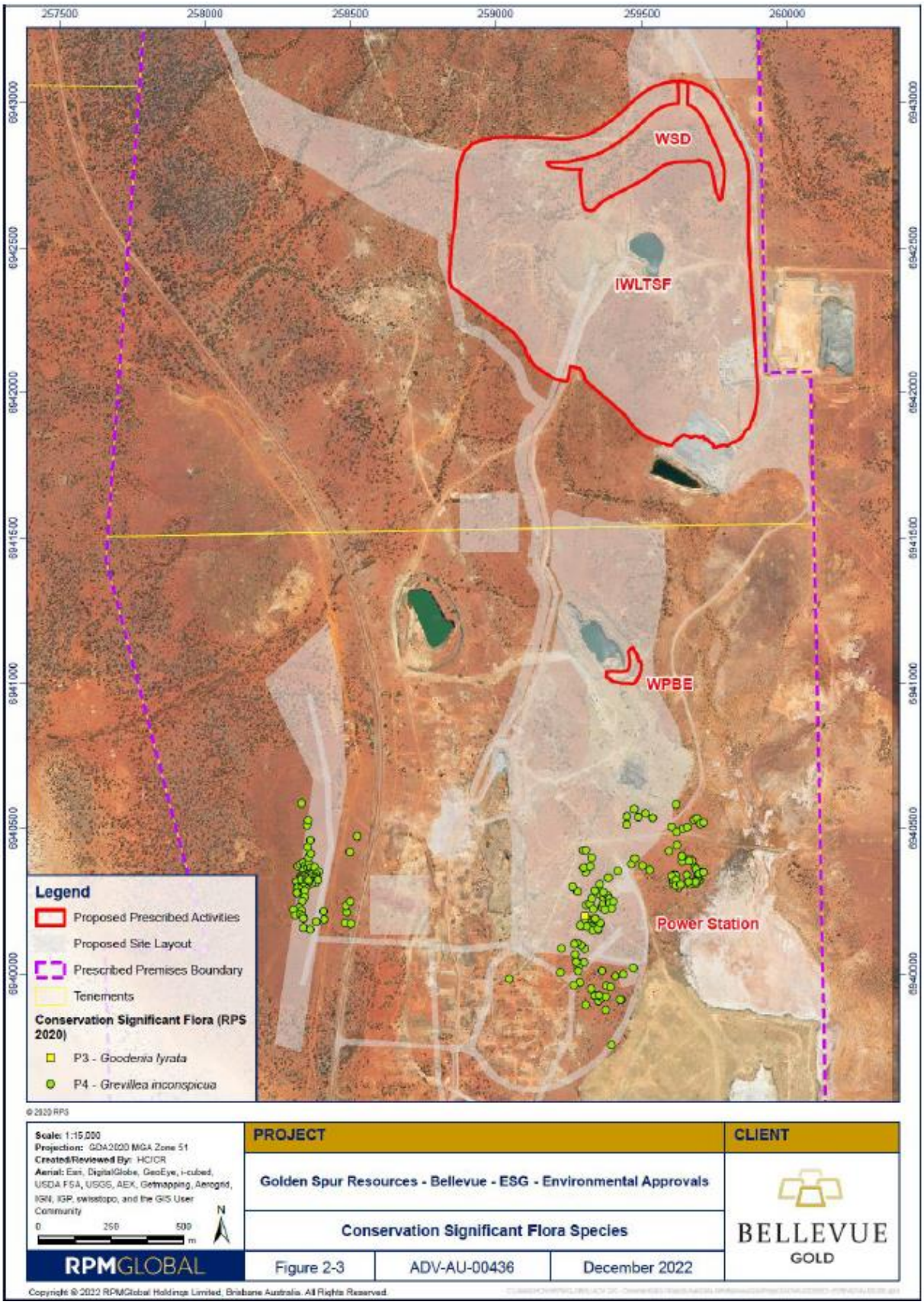

Figure 6: Conservation significant flora species at the premises

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 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 5.

The Revised Licence L9259/2020/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 5, 6, 54 and 64 activities.

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

Table 5. Risk assessment of potential emissions and discharges from the Premises during 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**				
Construction								
Installation of tertiary filtration system at existing wastewater treatment plant, and pipeline between wastewater treatment plant and processing plant; Construction of landfill trenches at Tribune Landfill.	Dust	**Pathway:** Air / windborne pathway **Impact:** Impact to ecological health	Native vegetation, including priority flora	Refer to Section 3.1	C = Slight L = Unlikely **Low risk**	Y	None.	N/A
Operation								
Category 5: Processing or beneficiation of metallic or non-metallic ore								
Operation of ore processing plant at production capacity of 1,350,000 tonnes per annual period	Dust	**Pathway:** Air / windborne pathway **Impact:** Impact to ecological health	Native vegetation, including priority flora and priority ecological communities	Refer to Section 3.1	C = Minor L = Unlikely **Medium risk**	Y	Condition 2 – Infrastructure operational requirements	N/A
	Sediment laden stormwater	**Pathway:** Overland runoff during rainfall events, resulting in discharge to land **Impact:** Impact to ecological health	Native vegetation, including priority flora and priority ecological communities; Surface water bodies.	Refer to Section 3.1	C = Moderate L = Unlikely **Medium risk**	Y	Condition 2 – Infrastructure operational requirements Condition 7 – Infrastructure construction and installation requirements	N/A
	Hydrocarbon, chemical reagents and contaminated water	**Pathway:** Loss of containment (e.g., spills and leaks), resulting in discharge to land **Impact:** Impact to ecological health	Native vegetation, including priority flora and priority ecological communities; Surface water bodies.	Refer to Section 3.1	C = Moderate L = Unlikely **Medium risk**	Y	Condition 1 – Spill management requirements Condition 2 – Infrastructure operational requirements Condition 7 – Infrastructure construction and installation requirements	N/A
Tailings deposition into IWLTSF Stage 2	Tailings supernatant	**Pathway:** Vertical infiltration and lateral migration of seepage through base and walls of IWLTSF (Stage 2) **Impact:** Groundwater mounding and deterioration of	Native vegetation, including priority ecological communities; Surface water bodies, including Lake Miranda (also classified as Aboriginal heritage site); Groundwater aquifer.	Refer to Section 3.1	C = Moderate L = Possible **Medium risk**	N	**Condition 2 – Infrastructure operational requirements** Condition 5 – Inspection requirements **Condition 17 – Ambient groundwater monitoring requirements** **Condition 18 to 20 – Seepage Management Plan**	The department has determined that additional regulatory requirements are necessary to adequately manage the risk of potential impacts of seepage migration from the IWLTSF Stage 2, including: • **Condition 2** – Requirement to maintain backup pumps and generators, as well as telemetry for the IWLTSF underdrainage system; • **Condition 17 –** Specifying a target and limit

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**				
		groundwater quality, potentially resulting in impact to ecological health					**<u>requirements</u>** Condition 22 – Water balance monitoring requirements	value of 6.0 mbgl and 5.0 mbgl for standing water level at groundwater monitoring bores associated with IWLTSF; and • **Conditions 18 to 20** – Requirement to prepare, submit, and implement a Seepage Management Plan, in the event the target for standing water level in a groundwater monitoring bore was exceeded at IWLTSF. Consistent with works approval W6724/2022/1, the department highlighted that the underdrainage sump was sized to contain only approximately 20 minutes of continuous seepage flow. A larger sump was not proposed as it was considered impractical and may adversely facilitate ponding near the embankment toe. Hence, continuous pumping of the underdrainage sump was necessary to ensure sufficient sump capacity to continue accepting tailings seepage. Consequently, the department included additional regulatory requirements for the time limited operation of IWLTSF (Stage 2) in the works approval. The department has applied these same requirements in this amendment for the operation of IWLTSF (Stage 2). Preliminary groundwater monitoring of new monitoring bores at the IWLTSF (e.g., MB02A and MB03) has shown that ambient groundwater level is relatively shallow. With the complete filling of the Vanguard in-pit TSF and the continued tailings deposition into the IWLTSF (including for Stage 3), there exists a risk that groundwater mounding may occur, potentially resulting in saturation of the vadose zone. Consequently, the department has specified a standing water level limit of 5.0 mbgl for groundwater monitoring bores around IWLTSF. The limit is consistent with those specified for monitoring bores in works approval W6724/2022/1. Furthermore, the department has specified a precautionary target of 6.0 mbgl for standing water level. Exceedance of the target would result in a requirement to design and implement a Seepage Management Plan. The intention of these conditions is to improve proactivity in managing potential groundwater mounding and other issues associated with tailings seepage, and ultimately, result in management actions taken prior to an exceedance of the specified limit.
		Pathway: Direct ingestion by terrestrial fauna and avifauna **Impact:** Impact to	Fauna, including conservation significant species and migratory birds	Refer to Section 3.1	C = Moderate L = Unlikely **Medium risk**	N	Condition 2 – Infrastructure operational requirements **<u>Condition 16 – Surface water monitoring requirements</u>**	The department has determined that additional regulatory requirements are necessary to adequately manage the risk of potential impacts of decant water ingestion at the IWLTSF Stage 2, including: • **Condition 16** – Requirement to monitor for

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**				
		ecological health						weak acid dissociable cyanide (WAD CN) and total dissolved solids (TDS) in decant water at IWLTSF. Consistent with works approval W6724/2022/1, the department highlighted that the ingestion of decant water containing high concentration of WAD CN may have detrimental impact on wildlife, including transient avifauna. Preliminary monitoring of return water undertaken during time limited operation of the IWLTSF (Stage 2) has found significant concentrations of WAD CN, although the specified limit of 50 mg/L was not exceeded. The department also acknowledges that the high salinity of the decant water may reduce palatability of decant water. Consequently, the department has specified routine monitoring of WAD CN and TDS at the decant pond to ensure that WAD CN concentrations are not high enough to pose significant health risk to transient fauna, and TDS levels remain sufficiently elevated to deter fauna from utilising the water for drinking purposes.
	Tailings slurry	**Pathway:** Overtopping of IWLTSF Stage 2, resulting in direct discharge to land **Impact:** Impact to ecological health	Native vegetation, including priority ecological communities; Surface water bodies.	Refer to Section 3.1	C = Moderate L = Unlikely **Medium risk**	Y	Condition 2 – Infrastructure operational requirements Condition 4 – Freeboard requirements Condition 5 – Inspection requirements Condition 11 – Emission limits	N/A
	Tailings slurry / return water	**Pathway:** Loss of containment (e.g., pipeline leaks and ruptures, sump overflow), resulting in discharge to land **Impact:** Impact to ecological health	Native vegetation, including priority ecological communities; Surface water bodies.	Refer to Section 3.1	C = Moderate L = Possible **Medium risk**	Y	Condition 1- Spill management requirements Condition 3 – Pipeline requirements Condition 5 – Inspection requirements	N/A
Category 6: Mine dewatering								
Dewatering of underground mine and discharge of mine dewater to Henderson Pit and Westralia Pit at an increased production capacity of 1,200,000 tonnes per annual period;	Hypersaline mine dewater	**Pathway:** Overtopping of Henderson Pit and/or Westralia Pit berm expansion, resulting in direct discharge to land **Impact:** Impact to ecological health	Native vegetation, including priority flora and priority ecological communities; Surface water bodies, including Lake Miranda (also classified as Aboriginal heritage site).	Refer to Section 3.1	C = Moderate L = Possible **Medium risk** Refer to Section 3.3	N	Condition 4 – Freeboard requirement **Condition 5 – Inspection requirement** **Condition 10 – Authorised emission points** Condition 11 – Emission limits Condition 15 – Emission	**Henderson Pit** Refer to Section 3.3. The department has determined that additional regulatory requirements are necessary to adequately manage the risk of potential impacts of overtopping of Henderson Pit, including: • **Condition 5** – Requirements for visual inspection for available freeboard twice

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**				
Dewatering of Henderson Pit and discharge of pit lake water to Westralia Pit.							monitoring requirements Condition 16 – Surface water monitoring requirements Condition 21 – Vegetation health monitoring requirements Condition 22 – Water balance monitoring requirements	daily. **<u>Westralia Pit</u>** Refer to Section 3.3. The department has determined that additional regulatory requirements are necessary to adequately manage the risk of potential impacts of overtopping of Henderson Pit, including: • **Condition 10 –** Restricting the discharge of water from Henderson Pit to Westralia Pit, except where diversion of water from Henderson Pit to Westralia Pit is required to mitigate the risk of overtopping at Henderson Pit.
		Pathway: Vertical infiltration and lateral migration of seepage through base and walls of Henderson Pit and/or Westralia Pit berm expansion **Impact:** Groundwater mounding and deterioration of groundwater quality, potentially resulting in impact to ecological health	Native vegetation, including priority flora and priority ecological communities; Surface water bodies, including Lake Miranda (also classified as Aboriginal heritage site); Groundwater aquifer.	Refer to Section 3.1	C = Moderate L = Possible / likely **Medium / High risk** Refer to Section 3.3	N	Condition 5 – Inspection requirements **<u>Condition 10 – Authorised emission points</u>** Condition 11 – Emission limits Condition 17 – Ambient groundwater monitoring requirements **<u>Condition 21 – Vegetation health monitoring requirements</u>** Condition 22 – Water balance monitoring requirements Condition 29 – Specified action requirements (hydrogeological investigation, ongoing seepage recovery)	**<u>Henderson Pit</u>** N/A **<u>Westralia Pit</u>** Refer to Section 3.3. The Delegated Officer has determined that additional regulatory requirements are necessary to adequate manage the risk of potential impacts of migration of seepage from Westralia Pit, including: • **Condition 10 –** Restricting the discharge of water from Henderson Pit to Westralia Pit, except where diversion of water from Henderson Pit to Westralia Pit is required to mitigate the risk of overtopping at Henderson Pit; • **Condition 21 –** Continuation of quarterly vegetation condition monitoring along the Westralia Pit berm expansion; and • **Condition 29** – Specified action requirement to undertake hydrogeological investigation and seepage recovery at Westralia Pit, as well as provide notification to the department on progress with managing emissions at Seep 4 zone.
		Pathway: Loss of containment (e.g., pipeline leaks and ruptures), resulting in discharge to land **Impact:** Impact to ecological health	Native vegetation, including priority flora and priority ecological communities; Surface water bodies.	Refer to Section 3.1	C = Moderate L = Unlikely **Medium risk**	Y	Condition 3 – Pipeline management requirements Condition 5 – Inspection requirements	N/A
Category 54: Sewage facility								

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**				
Transfer of treated wastewater from wastewater treatment plant to processing plant for reuse	Treated wastewater	**Pathway:** Loss of containment (e.g., pipeline leaks and ruptures), resulting in discharge to land **Impact:** Impact to ecological health	Native vegetation, including priority flora and priority ecological communities; Surface water bodies, including Lake Miranda (also classified as Aboriginal heritage site).	Refer to Section 3.1	C = Minor L = Unlikely **Medium risk**	Y	Condition 2 – Infrastructure operational requirements Condition 5 – Inspection requirements Condition 7 – Infrastructure construction and installation requirements Condition 15 – Emission monitoring requirements	N/A
Category 64: Class II and III putrescible landfill site								
Disposal of inert and putrescible waste at landfills up to 600 tonnes per annual period; and Operation of putrescible landfill activities at Tribune Landfill.	Dust	**Pathway:** Air / windborne pathway **Impact:** Impact to ecological health	Native vegetation, including priority flora and priority ecological communities.	Refer to Section 3.1	C = Slight L = Unlikely **Low risk**	Y	Condition 2 – Infrastructure operational requirements	N/A
	Windblown waste	**Pathway:** Air / windborne pathway **Impact:** Impact to ecological health and amenity	Native vegetation, including priority flora and priority ecological communities.	Refer to Section 3.1	C = Minor L = Rare **Low risk**	Y	Condition 2 – Infrastructure operational requirements Condition 7 – Infrastructure construction and installation requirements	N/A
	Leachate	**Pathway:** Vertical infiltration and lateral migration of leachate through base and walls of landfill trench **Impact:** Deterioration of groundwater quality, potentially resulting in impact to ecological health.	Native vegetation, including priority flora and priority ecological communities; Groundwater aquifer.	Refer to Section 3.1	C = Minor L = Unlikely **Medium risk**	Y	Condition 2 – Infrastructure operational requirements Condition 6 – Landfill cover requirements Condition 7 – Infrastructure construction and installation requirements Condition 11 – Emission limits	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 Detailed risk assessment of proposed increase of mine dewatering discharge to 1,200,000 tonnes per annual period and proposed dewatering of Henderson Pit to Westralia Pit

3.3.1 Background

As summarised in Section 2.2.3 and 2.2.4, groundwater inflow into the premises' underground mine has occurred at rates higher than expected, with the suspected cause being seepage from the nearby Henderson Pit. Henderson Pit, along with Westralia Pit, are currently authorised under existing licence L9259/2020/1 to receive mine dewater. Preliminary investigations have estimated seepage into the underground workings from Henderson Pit and Westralia Pit to be in the ranges of 23 L/s to 24 L/s and 2 L/s to 3 L/s, respectively.

Due to the higher rates of groundwater inflow, the licence holder is required to increase dewatering rates and consequently, have requested an increase in the production capacity for discharging of mine dewater by an additional 200,000 tonnes per annual period.

At the same time, to address the issue of increased groundwater inflow in the underground mine, the licence holder has proposed to dewater the Henderson Pit to undertake further hydrogeological investigations. In other words, the licence holder has proposed to cease the discharge of mine dewater into Henderson Pit for the duration of the investigation, leaving only Westralia Pit as the sole authorised discharge location. In addition to that, existing water from the Henderson Pit Lake will also need to be dewatered, and discharged into Westralia Pit, to commence the required investigations.

3.3.1 Potential adverse impact associated with proposed activities

The proposed dewatering of Henderson Pit and the proposed increase in mine dewater discharge to Westralia Pit may have several potential impacts to sensitive receptors, which will be assessed as various risk events under this detailed risk assessment. By increasing the volume of mine dewater discharge from the underground mine as well as mine dewater from the Henderson Pit, the following risk events were considered:

1. Risk of overtopping the WPBE, which will result in a direct discharge of hypersaline pit water to land,
2. Risk of seepage through the base and walls of the WPBE, which will result in an expression and emission of hypersaline pit water to land.
3. Risk of seepage through the base and walls of the WPBE, which will result in localised groundwater mounding and potentially expression and emission of hypersaline groundwater to land.

Under all three risk events, the impacts of an uncontrolled emission of hypersaline pit water over land will impact surrounding native vegetation, either through prolonged inundation or salt stress due to hypersaline conditions. Furthermore, there is potential for overland flow to enter ephemeral drainage lines, which will likely flow into the Lake Miranda salt lake environment.

The potential for groundwater mounding can also similarly impact surrounding vegetation, either through prolonged inundation of the vadose zone, where vegetation roots are present, or through prolonged exposure of the root zone to hypersaline groundwater, resulting in salt stress. Severe groundwater mounding may result in a surface expression of hypersaline groundwater, which may continue to impact sensitive receptors (e.g., native vegetation, surface waterbodies), as described above.

Between December 2019 and March 2020, the discharge of 145,000 tonnes of hypersaline mine dewater into a surface pit resulting in the water overflowing through a vent shaft connected to

the pit. The incidental spill of hypersaline water extended to over 46 hectares, with nearly 16 hectares of native vegetation and associated ecosystems impacted. Exposure to the hypersaline mine dewater had killed most native vegetation in the area and left a visible salt scar on the land. This incident illustrated the impacts of a discharge of hypersaline mine dewater over land.

3.3.2 Previous environmental issues at Westralia Pit

To increase the storage capacity of Westralia Pit to accept mine dewater, the licence holder completed construction of the WPBE in February 2024 (refer to Section 2.2.4). Subsequently in July 2024, seepage was identified at the downstream embankment toe of the Westralia Pit eastern boundary, which had flowed along an ephemeral drainage line, onto the road and then into the fringes of the Lake Miranda salt lake. The impacted area was estimated to be approximate 591 m^2. The seepage was characterised as hypersaline and had a measured flow of 0.09 L/s. Geotechnical investigations suggested that the seepage was occurring as a result of pit water flowing through a preferential pathway through the underlying fractured basalt geology underlying the berm.

In response to the incident, the licence holder ceased discharge into the Westralia Pit temporarily, while constructing a temporary sump at the road to collect overland seepage runoff, which were then pumped into water storage dams at the processing area. As a long-term measure, the licence holder proposed to construct a permanent seepage interception trench and sump at the toe of the WPBE, where the seepage intercepted would be pumped directly back to the Westralia Pit via pipelines over the berm.

In reporting the incident, the licence holder stated that the impacts caused by the incident were considered minimal.

The incident and the immediate and long-term mitigation measures proposed by the licence holder were considered by the department as part of an amendment to licence L9259/2020/1 to continue discharging mine dewater to the Westralia Pit to increased elevation due to the constructed berm expansion. The amendment was granted on 26 November 2024, with amendments to the licence conditions to specify the construction of the proposed seepage interception trench, as well as requirements for vegetation condition monitoring and preparation of a trigger action response plan (TARP). The TARP required the licence holder to define monitoring program and relevant events and/or trigger values that may indicate impact to vegetation as a result of seepage from Westralia Pit, as well as relevant controls that would be implemented.

3.3.3 Current environmental issues at Westralia Pit

The department understands that the seepage from July 2024 is still occurring, albeit being captured by the seepage interception trench and corresponding collection pond, constructed in November 2024. A permanent submersible pump and dedicated generator was installed in June 2025. The pump operates on level switches and is capable of pumping approximately 20 L/s of intercepted seepage back to Westralia Pit.

In addition to the seepage zone identified in July 2024 (referred to as Seep 1), the licence holder has since identified three additional seepage zones along the eastern boundary of Westralia Pit (Figure 7), including:

- **Seep 2** – Seepage originating from the base of the Westralia Waste Rock Dump, located south of the initial seepage zone (Seep 1);
- **Seep 3** – Seepage originating from the base of the WPBE wall, north of the initial seepage zone (Seep 1); and
- **Seep 4** – Surface expression of groundwater approximately 200 m east of the Westralia

Pit into an ephemeral tributary to Lake Miranda.

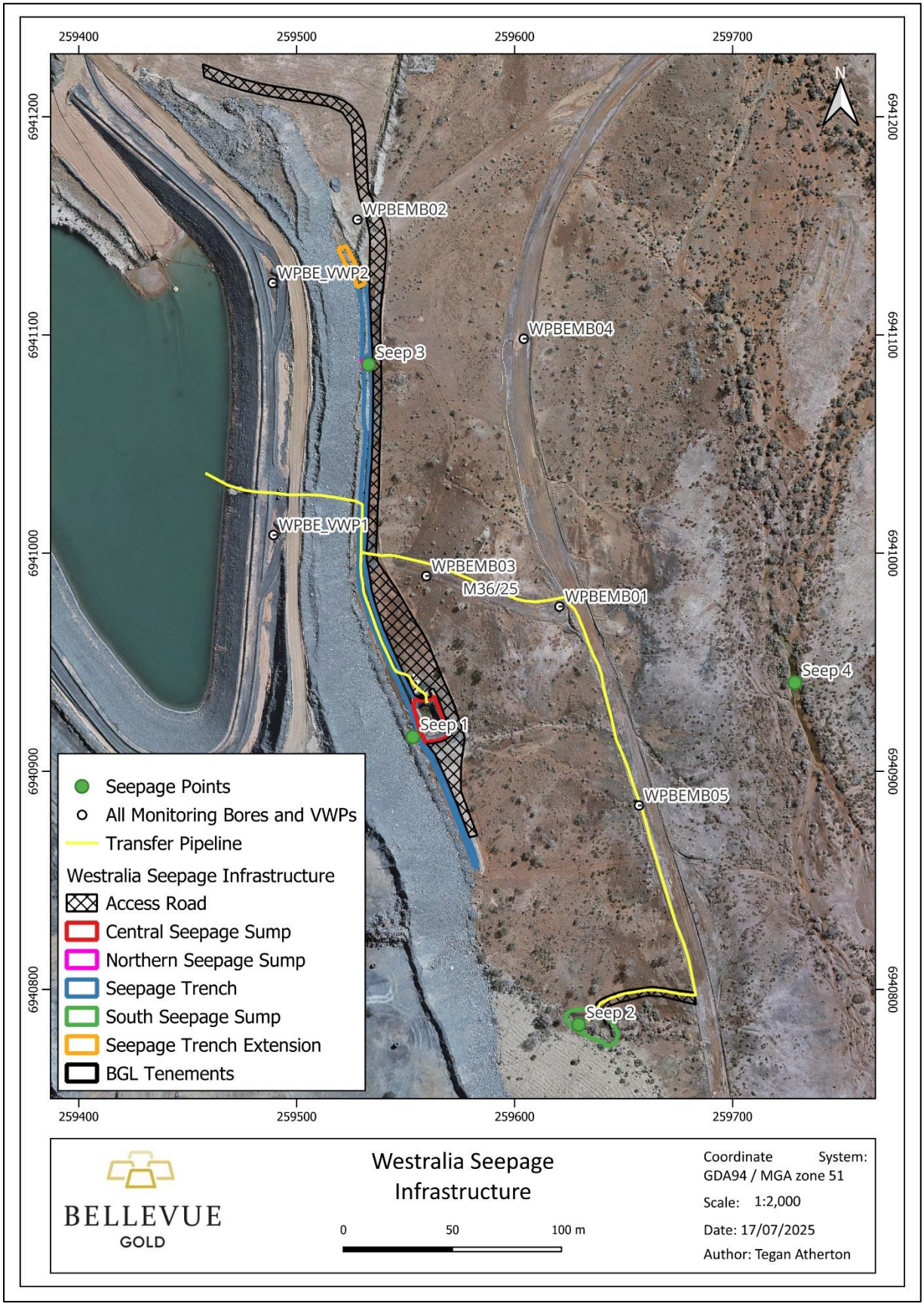

Figure 7: Location of seepage zones and seepage management infrastructure

The seepage pathways for these additional seepage zones were thought to be the same as Seep 1, where pit water bypasses the internal cutoff trench underlying the WPBE, preferentially flowing through the fractured near-surface saprolite and saprock geology. As a result of continued discharges, rising pit lake levels within Westralia Pit since 2014 were also cited as having increased hydraulic pressure, allowing water to flow through these additional seepage pathways.

The seepage pathways for these additional seepage zones were thought to be the same as Seep 1, where pit water bypasses the internal cutoff trench underlying the WPBE, preferentially flowing through the fractured near-surface saprolite and saprock geology. As a result of continued discharges, rising pit lake levels within Westralia Pit since 2014 were also cited as having increased hydraulic pressure, allowing water to flow through these additional seepage pathways.

Of note, surface expression from Seep 4 differed from the other seepage zones, as it was encountered further away from the WPBE. The licence holder provided two key factors for this seepage zone. Firstly, there may be progressive saturation of the shallow subsurface environment to the east of Westralia Pit, likely through interactions with shallow fractures and alluvial materials contained within historic drainage lines. This saturation process may not be evident immediately, represented by the delay in this seepage zone being identified. Secondly, seasonal recharge and surface hydrology of the downstream Lake Miranda area may have resulted in elevated groundwater levels in its surrounds, such that surface expression may occur in some low-lying area, including ephemeral drainage lines.

Vegetation condition monitoring undertaken along the eastern boundary of Westralia Pit between October 2023 and June 2025 have identified impacts to vegetation health to be associated with seasonal rainfall, seepage expression, as well as salinity (in the form of salt crusting).

3.3.4 Proposed controls

For the proposed activities, the licence holder did not propose any additional controls to manage the risk of impact, noting that the controls that were previously proposed and conditioned in existing licence L9259/2020/1 will continue to be implemented, including maintaining and monitoring pit freeboard, monitoring of discharge volumes, as well as monitoring of groundwater monitoring bores and vegetation condition. The licence holder has stated that the proposed activities will not result in changes to the existing water balance, with sufficient capacity to store the increased mine dewater volumes at the Henderson Pit and Westralia Pit.

On 24 March 2025, the licence holder submitted the TARP required under condition 24 of existing licence L9259/2020/1. The TARP identified triggers, actions and responses for four key events:

1. Identification of additional seepage locations, with risk levels depending on whether seepage locations were able to be intercepted by existing seepage management infrastructure;
2. Identification of vegetation stress on eastern side of the Westralia Pit, with risk levels depending on observed decline in vegetation health scores;
3. Potential overflow of seepage sumps, with risk levels depending on remaining capacity within sumps and whether any overtopping events had occurred; and
4. Rainfall weather events, with risk levels depending on rainfall intensity, in relation to AEP.

In responses and reporting of additional seepage zones in May 2025 (detailed in Section 3.3.3) were undertaken in accordance with the high risk response for TARP Event 1. In their notification of additional seepage zones, the licence holder acknowledged the potential for ongoing

seepage to occur from Westralia Pit while it continues to be used as the primary water storage of mine dewatering operations at the premises. The licence holder intends to continue undertaking necessary hydrogeological investigations to better understand preferential seepage flow pathways between Westralia Pit and surrounding sensitive receptors (i.e., Lake Miranda).

A number of proposed controls and management actions have been outlined and are in various stages of progress at the time of this assessment (Table 6).

Table 6: Management actions in response to additional seepage zones

Management action	Timeframe	Status	Comment
Construct shallow seepage interception trench and recovery system along the eastern side of the WPBE for Seep 1 recovery.	November 2024	Completed	Constructed in accordance with condition 4 of existing licence L9259/2020/1. Environmental compliance report submitted to the department on 18 December 2024, in accordance with condition 5 of existing licence L9259/2020/1. Permanent submersible sump and dedicated power generator installed in June 2025. System is currently operational, with capacity to store up to 300 m^3 of water and return up to 20 L/s of collected water to Westralia Pit.
Install low-yield solar pumps in monitoring bores WPBEMB01, WPBEMB04, and WPBEMB05.	February 2025	Completed	Pumps have been installed and are operational, with little observable effect on lowering the localised water table to date.
Construct additional shallow sumps and pumping infrastructure for Seep 2 and Seep 3 recovery.	May 2025	Completed	The northern and southern seepage sumps have been constructed. The northern seepage sump was constructed on 26 May 2025, due to slight rise of bedrock within the existing seepage interception trench, resulting in seepage pooling. The sump has a storage capacity of 40 m^3. The southern seepage sump was constructed on 21 May 2025, to intercept seepage from Seep 3. The sump has a storage capacity of 240 m^3 and is equipped with its own infrastructure to pump water to Westralia Pit via pipelines.
Temporary removal of water from Westralia Pit to reduce hydraulic loading.	June 2025	In Progress	Currently, water from Westralia Pit is being abstracted to be reused in the processing circuit, at approximately 42,300 kL/day.

Management action	Timeframe	Status	Comment
Extend the shallow seepage interception trench further to the north.	June 2025	Completed	On 26 May 2025, the existing shallow seepage interception trench was extended further north as a precautionary measure.
Installation of a second submersible pump in select bores to increase abstraction and promote local drawdown. This may involve redeployment of redundant solar pump from WPBEMB04 to WPBEMB02.	September 2025	Planned	None.
Implement up to 10 additional monitoring and seepage recovery bores to track seepage movements and lower localised groundwater levels around Westralia Pit and Seep 4.	December 2025	Planned	Works will include desktop review of historical radiometric and aerial magnetic geophysics data to identify potential preferential flow pathways. Up to ten exploration boreholes will be advanced, with up to three high-yield bores converted for seepage recovery, while the rest are converted to monitoring bores with potential for low-yield seepage recovery. Undertake seepage recovery program for approximately six months. There is also potential to install a surface water level logger at Seep 4, though this would require heritage approval.
Investigate alternate water storage options to reduce water storage at Westralia Pit, use of alternate water reduction infrastructure (e.g., high-volume evaporators), and alternate water storage or reuse options (including offsite location).	Ongoing	In Progress	There are no alternate water storage locations within the premises, with Henderson Pit nearing capacity. The licence holder is currently discussing options with nearby operators and tenement holders. These options are still in the early stages of investigations, with no timeline currently available.

3.3.5 Water monitoring assessment

To inform the risk assessment for the proposed activities, the department has considered monitoring information based on recent monitoring undertaken at Westralia Pit.

Discharge volume monitoring

When considering discharge volumes, it was shown that mine dewater is not equally distributed between the two open pits for discharge. Most notably, mine dewater discharged to Henderson

Pit fluctuates more significantly compared to Westralia Pit on a monthly basis (Figure 8a).

Typically, monthly discharge to Westralia Pit is higher compared to Henderson Pit, annual total discharge volume and monthly average discharge volume of the 2023/2024 annual period being higher at Westralia Pit. The highest monthly volume discharged to Westralia Pit was in July 2024 (i.e., 94,545 kL) (Figure 8a), which coincided with detection of seepage at the berm.

While the volume of water dewatered from Henderson Pit to Westralia Pit is not known, the department understands that, in accordance to their TARP, the licence holder had ceased discharge of water from Henderson Pit to Westralia Pit on at least three occasions: July 2024 (following identification of Seep 1), January 2025 (following identification of Seep 3), and May 2025 (following identification of Seep 2 and Seep 4).

Water balance monitoring

Based on the water balance for the 2023/2024 annual period, the remaining storage capacities for the Henderson Pit and Westralia Pit were considered. Due to the berm expansion, Westralia Pit contained significantly more storage capacity, compared to the Henderson Pit. In considering the total storage capacity for each discharge location, Henderson Pit was at 65% capacity throughput the annual period, reaching up to 98% during July 2024. On the other hand, Westralia Pit was at above 39% capacity throughout the annual period, with a maximum capacity of 67% reached during November 2023. Analysis of volume of mine dewater discharged to the pits and remaining pit capacity did not indicate any significant correlations.

Pit lake elevation and freeboard monitoring

In order to ensure a minimum freeboard of 1.5 m is maintained, existing licence L9259/2020/1 specified a pit lake elevation limit of 468.5 mAHD and 477.15 mAHD for the Henderson pit and Westralia pit, respectively. Based on the most recent pit standing water level monitoring event in October 2024, neither of the pit lakes have exceeded this limit, with Henderson Pit lake level at 465.9 mAHD (i.e., 2.62 m allowance) and Westralia Pit lake level at 473.4 mAHD (i.e., 3.73 m allowance) (Figure 8b).

The Westralia Pit lake elevation had been increased significantly from 468.2 mAHD to 477.15 mAHD as a result of the constructed WPBE. Based on pit lake water levels, it was likely that the lake would be near the Westralia Pit crest around April 2024 and have flowed out into the expanded berm area by October 2024. The high discharge volume to Westralia Pit was in July 2024, which correlated with a significant increase in pit water level, from 470.9 mAHD to 472.2 mAHD.

The Licence Holder has indicated that site water balance projections will see pit lake level at Westralia Pit decrease in the coming months, following completion of dewatering works on historical underground works. Going forward, the rate of dewatering will only need to match the rate of groundwater inflow, resulting in a throughput reduction from approximately 53 L/s to 46 L/s. By March 2026, Westralia Pit lake elevation is expected to fall to approximately 470.2 mAHD by March 2026, which corresponds to the pit lake elevation prior to detection of seepage at the berm wall. Returning the elevation of the pit lake to this level (or lower) is expected to reduce likelihood of seepage occurring.

Groundwater monitoring

Groundwater monitoring bore associated with each pit showed that the standing water level at monitoring bore HEN01 near the Henderson pit fluctuated between 15 mbgl and 17 mbgl during the 2023/2024 annual period (Figure 8c). On the other hand, the monitoring bore associated with Westralia Pit (WPBEMB01) was had consistently remaining shallower than 2.0 mbgl for the entirety of the 2023/2024 annual period, with gradual signs of further shallowing towards the end of the annual period (Figure 8d). The shallowing effect was evident since June 2024, which corresponds to the increase in pit level observed. The licence holder has also indicated that the increase observed at monitoring bore WPBEMB01 was likely caused by rising pit water levels

at Westralia Pit whilst utilising the WPBE for additional water storage. Based on a previous assessment, the department understands the water table around Westralia Pit is also naturally shallower than elsewhere at the premises.

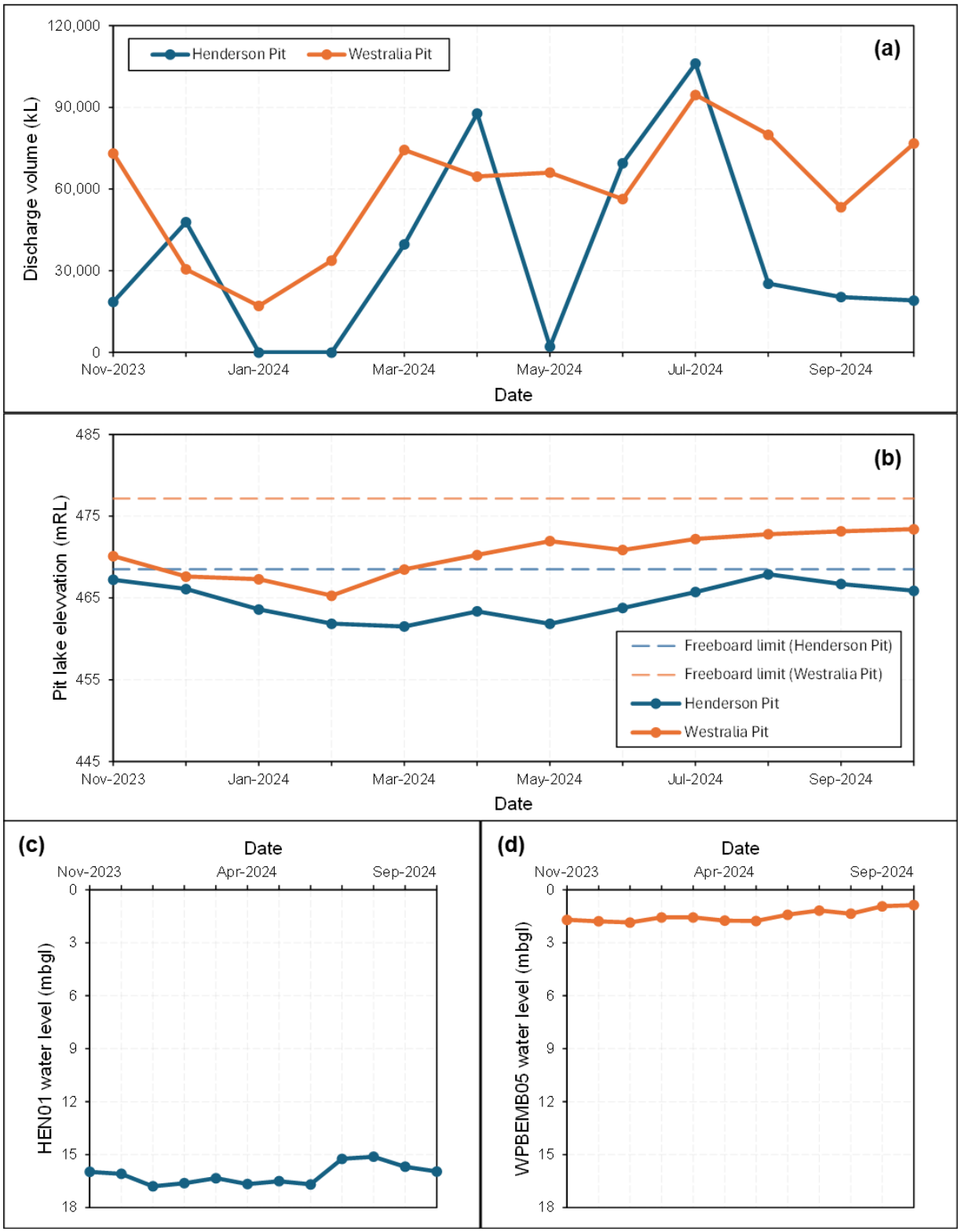

Figure 8: (a) Discharge volume, (b) Pit level elevation, (c) and (d) groundwater level at Henderson Pit and Westralia Pit for the 2023/2024 annual period

3.3.6 Vegetation condition monitoring

Vegetation condition monitoring has been undertaken since August 2024, using photographic documentation and the vegetation condition scale adopted from Keighery (1994) to assess vegetation health. Based on monitoring to date, it is evident that vegetation stress and vegetation death has been observed along the western perimeter of Westralia Pit (Table 7). The degradation of vegetation health has been attributed to variation in seasonal temperature and rainfall, but also the impacts of hypersaline seepage flowing through the area, as well as the persistence of salt crusts on the soil surface (i.e., after seepage flow has ceased and dried).

Monitoring locations WSPP1, WSPP2, and WSPP3 appear to be most impacted, with these locations containing vegetation health rating of 1.5 in some areas (Table 7). Observations of surface seepage and salt crusting were also dominant in these areas.

Vegetation health trends are summarised as follows, with consideration for seepage zones:

- Seep 1 was detected in July 2024. Monitoring data for WSPP1, WSPP2, and WSPP3 were only available from August 2024, with no baseline data available for comparisons. Nevertheless, vegetation health ratings have declined over time, with no improvements observed. In August 2024, vegetation health ratings varied between 'Poor' and 'Good', while the most recent monitoring event recorded ratings between 'Completely Degraded' and 'Poor'. The link between seepage flow and vegetation impacts appear well established, as multiple monitoring locations observed vegetation at or near seepage to have been impacted first (e.g., *direct surface seepage through the middle of the monitoring area has caused all the vegetation through there to die. Mix of live and dead vegetation in the surrounding area where the surface seepage did not impact*.). While decline in vegetation health was also observed at monitoring location VPVM2 (i.e., further north of Seep 1), the rate of decline appeared slower compared to the other monitoring locations closer to Seep 1, noting that VPVM2 may also be impacted by later expression of Seep 3.
- With the construction of the permanent seepage interception trench and collection sump in November 2024, observations of overland seepage flow reduced quickly. However, salt scarring and salt crusting emerged in areas where seepage had once flowed. The extent of salt crusts appeared to increase due to higher temperatures during summer.
- Detection of Seep 3, further north of Seep 1 along the berm expansion did not have an observable impact on the nearest monitoring location VVPVM2, noting that some level of vegetation stress may have been present in response to summer climate. The existing interception trench may have been able to limit seepage migration and surface expression to some extent. This is supported by the lack of surface seepage flow or salt crusting observations to date. However, it is worth noting that vegetation health rating at the VPVM2 west monitoring location decreased in April 2025 and has been classified as 'Poor' since (e.g., *some shrubs have died and leaves on tree in the background are becoming browner on lower branches*). Vegetation stress associated with harsh climate should have reduced during winter months due to higher rainfall and lower temperatures but have not been apparent as of the latest monitoring event in June 2025.
- Detection of Seep 2 and Seep 4 in May 2025 did not correspond with any significant reductions in vegetation health ratings. While the licence holder has promptly implemented seepage recovery measures, it should be noted that there has only been one monitoring event since the incident. Further monitoring is required to accurately determine whether these seepage zones may resulted in impacts to vegetation health. At this stage, salt crusts are evident at all surrounding monitoring locations, having already been impacted by previous seepage incidents.
- Furthermore, potential impacts associated with Seep 4 may not be adequately monitored, as existing monitoring locations exist along the access track between

Westralia Pit and the ephemeral tributary to Lake Miranda. Seep 4, where seepage is expressing into the tributary, has the potential to impact potential riparian vegetation around the tributary. The potential emergence of salt crusting within the tributary, as well as the implications for surface water quality, is also not currently understood.

Table 7: Vegetation health rating along western perimeter of Westralia Pit

Monitoring location	Direction	2023		2024							2025					
		Oct	Nov	Mar	Jun	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
VVPVVM2	North	2.5	2.5	2.5	3.0	N/A	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	West	2.5	2.5	2.5	3.0	N/A	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2.0	2.0
VPVVM1	Southwest	3.0	3.0	3.0	3.5	3.0	3.0	3.0	**3.0**	**3.0**	**3.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
WSPP1	North	N/A	N/A	N/A	N/A	3.0	3.0	3.0	3.0	3.0	2.5	2.0	2.0	2.0	2.0	2.0
	East	N/A	N/A	N/A	N/A	2.5*	2.5*	2.5*	**2.5**	**2.5**	**2.5**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
	South	N/A	N/A	N/A	N/A	2.0*	2.0*	2.0*	**2.0**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**
	West	N/A	N/A	N/A	N/A	2.0*	Area cleared for construction of seepage interception trench.									
WSPP2	North	N/A	N/A	N/A	N/A	3.0*	2.5	2.5	2.5	2.5	2.0	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
	East	N/A	N/A	N/A	N/A	2.0	2.0	2.0	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
	South	N/A	N/A	N/A	N/A	2.0*	2.0*	2.0	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
	West	N/A	N/A	N/A	N/A	2.0*	2.0*	2.0*	**2.0**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**
WSPP3	North	N/A	N/A	N/A	N/A	3.0*	**3.0**	**3.0**	**3.0**	**2.5**	**2.5**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**
	East	N/A	N/A	N/A	N/A	2.0*	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**
	South	N/A	N/A	N/A	N/A	**2.5***	**2.5**	2.5	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**
	West	N/A	N/A	N/A	N/A	3.0	3.0	3.0	**3.0**	**3.0**	**3.0**	**2.5**	**2.5**	**2.5**	**2.5**	**2.0**

Note 1: Monitoring locations are presented in order from northmost to southmost.

Note 2: Cells are coloured based on vegetation health rating [adopted from vegetation condition scale by Keighery (1994)). Grey cells refer to no monitoring undertaken.

Note 3: Asterisk denotes presence of surface seepage observed at monitoring location, while bolded values denote presence of salt scarring or salt crusting at the monitoring location.

Note 4: Different line types are used on the table border to denote relevant events, including detection of Seep 1 (July 2024), construction of the seepage interception trench and collection sump (November 2024), detection of Seep 3 (January 2025), as well as detection of Seep 2 and Seep 4 (May 2025).

3.3.7 Risk rating and additional regulatory requirements

Based on the information presented, the department has assessed each relevant risk event and determined a risk rating for each risk event, based on the consequence and likelihood of impacts to sensitive receptors, as a result of the proposed activities (Table 8), in accordance with the *Guideline: Risk assessments* (DWER 2020b).

Table 8: Risk rating for risk assessment of mine dewater discharge into Westralia Pit

	Risk event	Consequence	Likelihood	Risk rating
Proposed activities: Continued discharge of mine dewater to the Henderson Pit and Westralia Pit (with berm expansion) at a maximum production capacity of 1,200,000 tonnes per annual period, and discharge of mine dewater from Henderson Pit into Westralia Pit. **Emission:** Hypersaline mine dewater				
1	Overtopping the WPBE, resulting in direct discharge of hypersaline pit water to land, and potentially impacting surrounding native vegetation (including priority ecological communities) and surface waterbodies.	**Moderate** While the licence holder has indicated that local vegetation condition is dynamic and is able to respond rapidly to change groundwater levels and salinity, the impact of hypersaline mine dewater on native vegetation has been well documented at the premises, with previous incidents resulting in significant vegetation death and persistent salt scarring. The continued discharge and storage of mine dewater into the Westralia Pit may result in incidental emissions to the environment with similar impacts to surrounding vegetation, especially along the eastern boundary of the pit, where the berm expansion is located. Furthermore, it is noted that the Westralia Pit and its surrounds are located within the *Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation)*, which is a Priority 1 priority ecological community. In considering this, the licence holder has stated that the environmental condition between the Westralia Pit and the nearby Lake Road is considered degraded and disturbed due to historical mineral exploration and mining activities. Due to the siting of the Westralia Pit, seepage may migrate overland or through the subsurface (and then daylight further away from the pit) and enter nearby ephemeral drainage lines, eventually flowing into the nearby Lake Miranda, located to the south. While Lake Miranda is considered a salt lake, the impacts of hypersaline water discharges on ephemeral drainage lines and terminal salt lakes, as well as the unique ecological assemblages that occur in these environments, are not currently well understood. Lake Miranda itself is also associated with other Priority 1 priority ecological communities, such as that *Yakabindie calcrete groundwater assemblage type on Carey paleodrainage on Yakabindie Station*, and the *Lake Miranda east calcrete groundwater assemblage types on Carey paleodrainage on Yakabindie Station*.	**Possible** Henderson Pit has relatively lower storage capacity, with mine dewater discharge resulting in the pit nearly reaching storage capacity in some months. However, the freeboard limit has not been exceeded at this stage. Westralia Pit contains significantly larger storage capacity, compared to Henderson Pit. However, the storage capacity of the pit is unlikely to be sufficient to store continued mine dewatering from underground mine as well as existing pit lake water from Henderson Pit, especially during winter months. The authorisation of two pits for the discharge of mine dewater allows greater flexibility in ensuring appropriate freeboard is being maintained. While the Henderson Pit is closer to reaching its storage capacity, discharge flow can be diverted to Westralia Pit. However, the proposed dewatering of Henderson Pit may increase the likelihood of overtopping at the Westralia Pit, due to both (i) increasing the overall water input into Westralia Pit, as well as (ii) Westralia Pit being the sole discharge location for mine dewater.	The department has determined that the potential impacts associated with an increase to the production capacity of the discharge of mine dewater can be adequately managed, provided that both the Henderson Pit and Westralia Pit are available. As such, the department has decided: • to authorise an increase in the assessed production capacity for Category 6 activities from 1,000,000 tonnes per annual period to 1,200,000 tonnes per annual period, but • to not authorise the dewatering of Henderson Pit, with pit water being sent to the Westralia Pit for discharge. **Risk event 1 – Medium risk** Due to the significantly greater storage capacity and available freeboard at the Westralia Pit, the department has no issues with increasing the authorised production capacity for Category 6 activity. However, the department is concerned that the dewatering of Henderson Pit, in addition to operational mine dewatering, may generate too much water for the Westralia Pit to contain. Further information is required to assess the feasibility of this activity. Currently, Henderson Pit has lower available storage capacity and is close to reaching the specified freeboard. As such, the department has specified additional regulatory requirements in the amended licence, including: • **Condition 5** – Requirement to inspect Henderson Pit for available freeboard twice daily, in addition to dewatering pipelines. This requirement is consistent with inspection requirements for the Westralia Pit berm expansion. **Risk event 2 and 3 – Medium to high risk** The proposed increase to Category 6 production capacity appears manageable, as mine dewater can be discharged to Henderson Pit. Furthermore, the licence holder predicts pit lake level at Westralia Pit to decrease in 2026. Due to existing seepage issues, the department is not confident that additional discharges from the Henderson Pit to Westralia Pit will not result in elevated risk of impacts to sensitive receptors. As the TARP has been submitted, existing condition 24 has been removed from the amended licence. Key controls and
2	Infiltration and lateral migration through the base and walls of the WPBE, resulting in seepage and surface expression to land, and potentially impacting surrounding native vegetation (including priority ecological communities) and surface waterbodies.		**Likely** Existing seepage zones have been identified along the Westralia Pit berm expansion in at least four locations. The licence holder is currently attempting to manage the emission and reduce impacts to the environment. A trigger action response plan (TARP) has been submitted, outlining management actions and timeframes for managing these seepage zones. Short-term seepage interception infrastructure and controls have been implemented to manage the identified seepage zones. However, the licence holder is still investigating long-term solutions to address the root cause of the issue. The requirement for a long-term management plan is considered necessary, as these seepage zones are likely to continue being emission points as long as mine dewater is discharged into Westralia Pit at current throughput rates. Furthermore, on at least two occasions, the licence holder has not followed their TARP accurately, in ceasing discharge of Westralia Pit. While discharges from the Henderson Pit were able to be ceased temporarily, continuous dewatering of the underground mine was required to maintain safe dry working conditions. As such, a not insignificant volume of mine dewater continued to be discharged into Westralia Pit, despite worsening seepage emissions along the eastern berm. The current practice of discharging intercepted seepage back to the Westralia Pit may not alleviate the issue either. Existing licence requires quarterly monitoring of vegetation condition for a one-year period, though the licence holder has taken further	

	Risk event	Consequence	Likelihood	Risk rating
			action to undertake monitoring more frequently and at reference sites to improve the quality of their assessment. Additional discharges from the Henderson Pit lake will likely exacerbate the existing seepage zones and may lead to additional seepage zones along the berm, increasing the likelihood of impact to sensitive receptors.	actions in the TARP and subsequent notifications have been considered and included in amended condition 2 (i.e., infrastructure operational requirements) and condition 29 (i.e., specified action requirements for Westralia Pit hydrogeological investigation and seepage recovery) in the amended licence. Furthermore, the department has specified additional regulatory requirements in the amended licence, including: • **Condition 10** – Restriction on the discharge of mine dewater from Henderson Pit at Westralia Pit, except where diversion of water from Henderson Pit to Westralia Pit is required to mitigate the risk of overtopping at Henderson Pit . • **Condition 21** – Increasing the timeframe for the vegetation monitoring program from one-year period to indefinitely. • **Condition 29 –** Specified actions to undertake further hydrogeological investigations at Westralia Pit to understand and identify potential preferential seepage flow pathways and install additional groundwater and seepage recovery bores. The specified action also requires the operation of seepage recovery bores once installed. • **Condition 29 –** Specified action to provide an update to the department in six months' time on managing access and implementing seepage mitigation measures at Seep 4. While the department understands that the licence holder wishes to dewater from Henderson Pit to better understand seepage pathways that have resulted in higher than expected mine dewatering rates, the dewatering works required to facilitate these investigations are unlikely to be authorised prior to either (i) seepage issues at the Westralia Pit being adequately addressed and/or (ii) an alternative location has been identified for the discharge of mine dewater from the Henderson Pit lake.
3	Infiltration and lateral migration through the base and walls of the WPBE, resulting in localised groundwater mounding and surface expression to land, and potentially impacting surrounding native vegetation (including priority ecological communities) and surface waterbodies.		**Possible** Existing seepage zones have been identified along the Westralia Pit berm expansion in at least four locations, with one of them appearing 200 m away from the berm, at a low-lying ephemeral drainage line. Surface expression of seepage at this location suggests that significant levels of saturation in the sub-surface environment and may be indicative of some level of groundwater mounding. The likelihood of impacts associated with groundwater mounding around Westralia Pit is significantly higher, due to the naturally shallow ambient water table. As with risk event 2, the licence holder has implemented a number of measures to intercept and minimise seepage migrating away from Westralia Pit but lacks long-term solutions for addressing the root cause of the issue. Furthermore, no seepage management infrastructure or monitoring locations exist near the drainage line (Seep 4), though there are planned investigations to be undertaken to better understand preferential seepage flow pathways between Westralia Pit and Seep 4. Currently, the Licence Holder is liaising with relevant Traditional Owner groups to secure access to Seep 4 to implement mitigation measures and monitoring. As such, existing monitoring and proposed controls are being undertaken further away from Seep 4. Additional discharges from the Henderson Pit lake will likely increase hydraulic pressure and result in increased seepage and groundwater mounding. This may lead to complete saturation of the vadose zone to the east of the facility, increasing the likelihood of impact to sensitive receptors.	

4. Consultation

Table 9 provides a summary of the consultation undertaken by the department.

Table 9: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 27 January 2024	None received.	N/A
Shire of Leonora advised of proposal on 24 January 2025	None received.	N/A
Tjiwarl Aboriginal Corporation advised of proposal on 24 January 2025.	On 2 April 2025, Tjiwarl Aboriginal Corporation provided comments, stating that proposed activities are on sections of Tjiwarl Country and that notification to the Tjiwarl Aboriginal Corporation will be required if they may impact registered aboriginal heritage places.	The department understands that the proposed activities will be undertaken on existing mining operations or disturbed areas. The department understands that a Native Title Agreement and Cultural Heritage Management Plan exists and has been signed by both the licence holder and the Tjiwarl Aboriginal Agreement. It is the licence holder's responsibility to ensure they have all required approvals prior to undertaking the proposed activities.
Licence holder was provided with draft amendment on 27 July 2025.	Licence holder provided comments on 13 August 2025. Refer to Appendix 1.	Refer to Appendix 1.

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 10 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 10: Summary of licence amendments

Amended condition no.	Proposed amendments
General	Updated condition wording, figure and table referencing to improve clarity of conditions and be consistent with latest licensing format.

Amended condition no.	Proposed amendments
---	Updated cover page to: • update DWER file number; • increase Category 5 assessed production capacity from 1,000,000 tonnes per annual period to 1,350,000 tonnes per annual period; • increase Category 6 assessed production capacity from 1,000,000 tonnes per annual period to 1,200,000 tonnes per annual period; • increase Category 64 assessed production capacity from 500 tonnes per annual period to 600 tonnes per annual period; and • updated licence history table.
Condition 2	Updated Table 1 to: • categorise infrastructure by prescribed premises category; • removing infrastructure and operational requirements relating to pipeline management, freeboard, and inspections as they have been included in new dedicated condition 3 to condition 5; • updating the number of diesel generators authorised to operate from two to six, due to submission of relevant environmental compliance report for four additional diesel generators, as specified in conditions 4 and 5 of existing licence L9259/2020/1; and • include IWLTSF (Stage 2) and the Westralia Pit Berm Expansion seepage management infrastructure, and Tribune landfill, as well as associated operational requirements.
Condition 3	New condition added to specify pipeline management requirements, for pipelines contain tailings, return water, process water (outside of Catchment Area 1), and/or mine dewater.
Condition 4	New condition added to specify freeboard requirements, for IWLTSF (Stage 2), Henderson Pit, and Westralia Pit.
Condition 5	New condition added to specify inspection requirements, for pipelines (process water, tailings, return water, dewatering, and treated wastewater), IWLTSF (Stage 2), Henderson Pit, Westralia Pit Berm Expansion, water storage ponds, and spray field.
Condition 7	Previously condition 4 in existing licence. Updated Table 5 to: • remove the following infrastructure: 4x 1.5MW diesel generators, Marceline rising main dewatering pipeline, Tribune boxcut dewatering pipeline, pipeline from the Circular Shaft directly to the Henderson Pit, pipeline connecting the Henderson and Westralia Pit, and Westralia pit seepage interception trench and collection sumps, as the infrastructure have been constructed • include additional infrastructure authorised for construction: Tribune Landfill trench and wastewater treatment plant upgrade and treated wastewater pipeline.
Condition 9	Previously condition 6 in existing licence. Updated condition to reflect current licensing requirements environmental

Amended condition no.	Proposed amendments
	compliance reports.
Condition 10	Previously condition 7 in existing licence. Updated Table 6 to: • specify mine dewatering emission sources accepted at Henderson Pit and Westralia Pit; • remove Vanguard in-pit TSF and include IWLTSF (Stage 2) for tailings discharge location.
Condition 11	Previously condition 8 in existing licence. Updated Table 7 to: • increase cumulative limit for volume of mine dewater discharged to Henderson Pit and Westralia Pit from 1,000,000 kL per annual period to 1,200,000 kL per annual period; • increase cumulative limit of waste tonnage sent to Class II landfills at the premises from 500 tonnes per annual period to 600 tonnes per annual period; • remove Vanguard in-pit TSF and include IWLTSF (Stage 2) and associated freeboard limit; and • remove Note 1 associated with Vanguard in-pit TSF.
Condition 15	Previously condition 12 in existing licence. Updated Table 8 to: • require flow meter measurements for South Seepage Sump; • remove Vanguard in-pit TSF and include IWLTSF (Stage 2) for monitoring of tailings volume discharged; • include treated wastewater monitoring requirements from existing condition 16; • remove pit lake standing water level monitoring requirements for Henderson Pit and Westralia Pit, as they have been included in new dedicated condition 16; • remove existing Note 1 as it did not relate to any monitoring requirements in Table 8; and • include revised Note 1 and Note 2 to specify NATA accreditation requirements and monitoring frequency for treated wastewater monitoring, which were already included in existing condition 16.
Condition 16	New condition added to specify surface water monitoring requirements, for Henderson Pit and Westralia Pit, as well as IWLTSF (Stage 2) decant pond.
Condition 17	Previously condition 13 in existing licence. Updated Table 10 to: • include additional groundwater monitoring bores MB02AS, MB02AD, and MB03A for monitoring of IWLTSF (Stage 2); • specify a target and limit of 6.0 mbgl and 5.0 mbgl (respectively) for standing water level at groundwater monitoring bores associated with IWLTSF (Stage

Amended condition no.	Proposed amendments
	2); • remove monitoring bore MB05 as it has been decommissioning as part of the construction of the IWLTSF (Stage 3) at the time of assessment; and • improve method specification for groundwater sampling and analysis.
---	Condition 14 and 15 in the existing licence, relating to groundwater monitoring field quality assurance, quality control, and recordkeeping requirements, were removed due to duplication and redundancies with other conditions. Condition 16 in the existing licence, relating to treated wastewater discharge monitoring requirements, were removed as the requirements were amalgamated with amended condition 15.
Condition 18	New conditions added to specify requirements to develop, submit to the CEO, and implement a Seepage Management Plan, in the event the standing water level target specified in amended condition 17 be exceeded.
Condition 19	
Condition 20	
Condition 21	Previously condition 17 in existing licence. Updated Table 11 to: • update monitoring period of one-year, with monitoring frequency of quarterly retained.
Condition 22	Previously condition 23 in existing licence. No changes made aside from the order of the condition within the amended licence.
Condition 27	Previously condition 22 in existing licence. Updated Table 12 to: • update reporting requirements for condition 15 (emissions and discharge monitoring), condition 17 (groundwater monitoring), and condition 21 (vegetation monitoring); and • include reporting requirements for new condition 16 (surface water monitoring).
Condition 28	New standard condition added to specify notification requirements.
Condition 29	New specified action requirement added for Westralia Pit hydrogeological investigation, operation of seepage recovery, and to update the department on management of seepage at Seep 4, including specified timeframe.
---	Condition 24 in the existing licence, relating to requirements to prepare and submit a Trigger Action Response Plan, were removed as the requirements have been met.
---	Updated Table 15 to: • include definitions for: AS4323.1, AS/NZS5667.11, HDPE, mAHD, mRL, and NATA.
---	Updated Schedule 1: Maps to:

Amended condition no.	Proposed amendments
	• update Figure 1 and Figure 2; • amalgamate existing Figure 6, Figure 7 and Figure 8 into a singular Figure 3; • remove existing Figure 4 as it relates to the Vanguard in-pit TSF; • remove existing Figure 10 and Figure 11, as they relate to constructed seepage interception trench at the Westralia Pit berm expansion; • include new Figure 6 to specify location of seepage management infrastructure at the Westralia Pit berm expansion.

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. Griffiths SR, Smith GB, Donato DB, Gillespie CG 2009, *Factors influencing the risk of wildlife cyanide poisoning on a tailings storage facility in the Eastern Goldfields of Western Australia*, Ecotoxicology and environmental safety, 72(5), pp. 1579-1586.
5. Keighery B.J. 1994, *Bushland Plant Survey: A Guide to Plant Community Survey for the Community,* Wildflower Society of WA (Inc.), Nedlands, 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
Condition 2 – Infrastructure and equipment requirements	In Table 1, the Licence Holder requested that the item number for each site infrastructure and equipment be updated.	The department has updated the item number in Table 1 of the amended licence.
	In Table 1, the Licence Holder requested that up to six diesel generators be authorised for operation, instead of the existing two. Four addition diesel generators were authorised for installation under condition 4 of existing licence L9259/2020/1. The relevant environmental compliance reports for these generators were submitted to the department on 15 April 2024. No environmental compliance reports relating to the installation of the two gas generators have been submitted to the department to date.	The department has completed the assessment of the environmental compliance report for the four diesel generators and have updated Table 1 in the amended licence accordingly. The infrastructure was removed from Table 5 of the amended licence. No environmental compliance report for the gas generators have been submitted at the time of this assessment. As such, these remain unchanged in Table 1 and Table 5 of the amended licence.
	In Table 1, the Licence Holder specified the proposed landfill name as 'Tribune Landfill'.	The department has updated Table 1 and other relevant sections in the amended licence.
	In Table 1, the Licence Holder indicated that the maximum tailings elevation should be 484.2 mRL, not 482.5 mRL. In providing further information to the department on 26 August 2025, the Licence Holder clarified that the maximum elevation of 484.2 mRL related to the IWLTSF (Stage 3), which was commissioned in May 2025. As such, the previous maximum elevation specified for Stage 2 of 482.5 mRL was no longer valid.	The department has not increased the maximum tailings elevation for IWLTSF (Stage 2) to 484.2 mRL, as this tailings elevation related to the construction and operation of the Stage 3 works. This application to amend licence L9259/2020/1 related only to the operation of the IWLTSF (Stage 2) and the corresponding risk assessment was limited to the deposition of tailings up to the Stage 2 maximum elevation of 482.5 mRL. Further, the department noted that the relevant compliance documents relating to the IWLTSF (Stage 3) is currently under assessment. The

Condition	Summary of licence holder's comment	Department's response
		Licence Holder should submit a separate application to amend licence L9259/2020/1 for the operation of the IWLTSF (Stage 3).
Condition 7 – Infrastructure construction and installation requirements	In Table 5, the Licence Holder requested the installation of four diesel generators to be removed, as the infrastructure has been constructed and the relevant environmental compliance report submitted to the department on 15 April 2024.	The department has completed the assessment of the environmental compliance report for the four diesel generators and have updated Table 1 in the amended licence accordingly. The infrastructure was removed from Table 5 of the amended licence. No environmental compliance report for the gas generators have been submitted at the time of this assessment. As such, these remain unchanged in Table 1 and Table 5 of the amended licence.
	In Table 5, the Licence Holder requested that the South Landfill and Tribune Landfill be removed, as it is unnecessary for an environmental compliance report to be submitted for each individual landfill trench, particularly given the frequency of trench construction.	The department clarifies that it is standard practice for the environmental compliance report of landfill trench to be submitted, as required by condition 8 of the amended licence. The department will assess the environmental compliance report to ensure that the landfill trench had been constructed in accordance with the requirements specified in condition 7. Following this, the requirements can be removed from the licence through a future licence amendment. Subsequent landfill trenches do not require the submission of an environmental compliance report and can be undertaken in accordance with condition 1. Table 1 has been amended to specify trench construction requirements in the amended licence.
	In Table 5, the Licence Holder requested that the construction requirements for the South Landfill be modified to reference Figure 2, not Figure 1.	The department has updated Table 5 in the amended licence.
Condition 10 – Authorised emission points	In Table 6, the Licence Holder provided the following information, as requested by the department: • Henderson Pit receives mine dewater from the underground mine, as well as transfer water from the Westralia Pit; • Westralia Pit receives mine dewater from the underground mine, as well as transfer water from	The department has specified the emissions acceptable at Henderson Pit and Westralia Pit in Table 6 of the amended licence. Noting that a discharge of pit water from Henderson Pit to Westralia Pit is essential to manage water levels at the Henderson Pit, the department has specified these discharges as acceptable. However, consistent with the decision specified in Section 3.3.7 of this Amendment Report, the Licence Holder is not authorised to fully dewater Henderson Pit and

Condition	Summary of licence holder's comment	Department's response
	the Henderson Pit. The Licence Holder acknowledged that the seepage from the Westralia Pit is driven by the greater hydraulic head at the pit. However, they consider it essential to maintain the option to transfer water from the Henderson Pit to Westralia Pit to manage potential water-related issues around Henderson Pit, such as overtopping, flooding, or significant rainfall events. The transfer of water from Henderson Pit to Westralia Pit will be limited and only undertaken where necessary.	discharge to Westralia Pit.
Condition 11 – Emission and discharge limits	In Table 7, the Licence Holder requested that the maximum tailings elevation be modified from 482.0 mAHD to 484.2 mAHD, to allow a freeboard of at least 300 mm, not 500 mm.	Refer to the department's response to comments relating to maximum tailings elevation above. Noting that the revised design of the IWLTSF, the department has updated the maximum tailings elevation to 482.5 mAHD to be consistent with requirements specified in condition 2.
Condition 15 – Emission and discharge monitoring	In Table 8, the Licence Holder identified a typographical error relating to referencing of Figure 6.	The department has corrected this error in the amended licence.
Condition 16 – Surface water monitoring	In Table 9, the Licence Holder argued that the additional regulatory requirement to specify a limit of 50 mg/L for weak acid dissociable cyanide (WAD CN) as part of the IWLTSF (Stage 2) decant water monitoring is not warranted. The Licence Holder highlighted that the '*Leading Practice Sustainable Development Program for the Mining Industry on Cyanide Management*' highlighted a clear difference in cyanide susceptibility for wildlife in freshwater and hypersaline TSF environments. Protection of wildlife in hypersaline environments can be managed based on salinity alone. The Licence Holder believes the IWLTSF to be a relevant location, as the average salinity of decant water is 192,000 mg/L total dissolved solids (TDS),	The decision to specify limits and targets on an instrument is risk-based and site-specific. Hence, application of a limit for WAD CN may be variable, even within a particular region. The department has requested further information on the salinity of the decant pond water from the Licence Holder. Further information was provided on 26 August 2025, detailing monthly TDS and WAD CN concentrations at the decant pond between December 2023 and July 2025. Monitoring data during this period showed that: • TDS ranged between 135,000 mg/L and 237,000 mg/L, averaging at 178,000 mg/L; and • WAD CN concentrations ranged between 11 mg/L and 74 mg/L, averaging at 36 mg/L.

Condition	Summary of licence holder's comment	Department's response
	sufficient to deter avifauna activity. Additionally, the Licence Holder referenced Griffiths *et al.* (2009) in stating that the high salinity of process solutions as well as a lack of aquatic food resources represent secondary protective mechanisms in the Kalgoorlie region to prevent cyanide-related wildlife mortality. The Licence Holder further stated that no birdlife has been sighted at or near the decant pond during twice-daily inspections since October 2023. Further, the Licence Holder noted that the limit was unevenly applied across gold TSFs, where many premises regulated under Part V of the EP Act do not specify a limit on WAD CN.	While WAD CN concentrations were detected above 50 mg/L in two consecutive months, the TDS of decant water remained consistently high, above 50,000 mg/L, which is generally considered the upper limit of drinking water palatability for wildlife. As such, the department has removed the limit of 50 mg/L for WAD CN in decant pond. Nevertheless, the intake of WAD CN by birds and other terrestrial fauna may still occur though at lower dosages due to hypersaline conditions. As such, the department requires monthly monitoring of WAD CN and TDS at the decant pond. Elevated concentrations of WAD CN within the decant pond may also result in migration of residual cyanide into the groundwater system.
Condition 17 – Groundwater monitoring	In Table 10, the Licence Holder requested that existing monitoring bore MB05 be removed as the bore had been decommissioned on 12 August 2025 to facilitate construction of the IWLTSF (Stage 3).	In the draft amended licence, the department specified that existing monitoring bore MB05 is required to be monitored until it is decommissioned as part of construction works for the IWLTSF (Stage 3). As the decommissioning has already occurred as part of construction works, the department has removed monitoring bore MB05 from Table 10 of the amended licence.
Condition 21 – Vegetation monitoring	In Table 11, the Licence Holder requested the additional regulatory requirement to undertake vegetation monitoring around the Seep 4 zone be removed. This is because Seep 4 is located within the Heritage Exclusion Zone (HEZ), where the Licence Holder does not have permission to enter. Existing monitoring locations WSPP2 East and WSPP3 East are currently taken from the Lake Road, at the edge of the HEZ, towards the Seep 4 location. In providing further information to the department on 26 August 2025, the Licence Holder indicated that Seep 4 was identified through monitoring at WSPP2 East and WSPP3	The department acknowledges that the Licence Holder is currently constrained from implementing further mitigation measures due to the HEZ. The department understands that the Licence Holder has and is continuing to liaise with the Tjirawl Aboriginal Corporation on these proposed measures, as well as securing access into the Seep 4 zone to implement further measures. Further, the department understands that the Licence Holder is able to monitor Seep 4 from existing monitoring locations WSPP2 East and WSPP3 East, which was adequately detailed to initially identify surface expression. Consequently, the department has removed the additional regulatory

Condition	Summary of licence holder's comment	Department's response
	East, supported by review of aerial photography. The Licence Holder had reported the incident to the Tjiwarl Aboriginal Corporation, at the same time as its report to the department. Since then, the Licence Holder had organised site visits and presentations with the relevant representatives to better understand potential impacts and discuss proposed management options, including installation of seepage interception bores along Lake Miranda Road, surface water monitoring and establishing photo monitoring locations at/or around Seep 4 zone. Currently, the Licence Holder is awaiting approval from the Tjiwarl Aboriginal Corporation. If approval is granted, access and monitoring activities will be extended to where Seep 4 is located. Until then, the Licence Holder will continue to monitor Seep 4 through existing monitoring locations, outside of the HEZ.	requirement to undertake vegetation monitoring around the Seep 4 zone. However, the department has included an additional specified action in condition 29 of the amended licence to provide an update to the department on the progress of implementing these mitigation measures. It is an expectation that the Licence Holder liaises and negotiates with the Tjiwarl Aboriginal Corporation to ensure timely implementation of mitigation measures to prevent unacceptable emissions to the environment.
Condition 28 – Notification requirement	The Licence Holder requested that the exceedance of the total nitrogen limit for treated wastewater (in condition 8 of existing licence L9259/2020/1) be exempt from the notification requirements in condition 28. Due to the consistent exceedance of this limit, the notification requirement would place significant administrative burden on the Licence Holder and the department. The Licence Holder acknowledges this is an ongoing issue and are actively working with the wastewater treatment plant manufacturer to improve system performance and address the elevated nitrogen levels.	The department has not authorised this exemption. The purpose of the condition is to ensure the department has timely regulatory oversight in the event a limit specified on the licence is exceeded. An exceedance of total nitrogen in treated wastewater being discharged to the irrigation sprayfield is not exempt from this. The Licence Holder is expected to continue notifying the department in accordance with the condition until the limit can be complied with, noting ongoing efforts to achieve this. If the Licence Holder believes that the limit is not reasonable and cannot be complied with, an application should be submitted to the department to amend the licence and modify the limit, with adequate justification and supporting documentation provided. The amendment will be subject to a risk assessment.
Condition 29 – Specified actions	In Table 13, the Licence Holder requested that the requirement to advance at least 10 boreholes and install at least three seepage recovery bores be removed.	The department has modified the requirement of the specified action, such that it is outcome-based, noting that the location and number of bores advanced will be dependent on field observations and advice from

Condition	Summary of licence holder's comment	Department's response
	Instead, the Licence Holder proposed the requirement be modified to reflect an appropriate number of boreholes determined by a hydrogeologist, based on observations and outcomes of the drilling program.	a suitably qualified hydrogeologist.
	In Table 13, the Licence Holder requested an extension of the timeframe for the Westralia Pit hydrogeological investigation from nine months to twelve months.	The department has specified a timeframe of twelve months in Table 13 of the amended licence, acknowledging that further time may be required to discuss the investigation and seek approval to undertake works with the Tjiwarl Aboriginal Corporation.
	In Table 13, the Licence Holder requested clarification, where the seepage recovery bores could not be operated in accordance with specified action item 1, as specified action item 1 does not specify the operation of seepage recovery bores.	The department has modified the requirement to improve clarity of the requirements in Table 13. Specified action item 1 does not require the operation of groundwater monitoring and/or seepage recovery bores, only the installation of these bores. Specified action item 2 is meant to require the operation and/or monitoring of these bores. References to item 1 were made in relation to their installation.
	The Licence Holder identified a typographical error relating to referencing of Table 13.	The department has corrected this error in the amended licence.
----	In Schedule 1: Maps, the Licence Holder provided an updated Figure 1, showing the location of the pipeline between the wastewater treatment plant and the processing plant, as requested by the department.	The department has updated Figure 1 in the amended licence.
	In Schedule 1: Maps, the Licence Holder provided an updated Figure 2, indicating the location of each individual landfill, as requested by the department.	The department has updated Figure 2 in the amended licence.
	In Schedule 1: Maps, the Licence Holder requested that Figure 7 remain unchanged, as the Licence Holder did not propose any additional vegetation monitoring locations and are unable to monitor vegetation at the additional location specified by the department near Seep 4 zone.	Refer to the department's response to comments relating to access to and monitoring of Seep 4 above. The department has not updated Figure 7 in the amended licence.