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	DER2020/000278
Premises	Bellevue Gold Project Legal description – 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	26 November 2024
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 (BGP) (the Premises), located within Mining Tenements M36/24, M36/25 and M36/299, Goldfields Highway, Shire of Leonora.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L9259/2020/1 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises. This Amendment Report will be included with the current Decision Report on file.

2. Scope of assessment

2.1 Regulatory framework

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

2.2 Amendment summary

The Licence Holder submitted applications to the department on 18 March 2024 (application 1) and 30 May 2024 (application 2) to amend Licence L9259/2020/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The department made the decision to process these two separate amendments together as a single amendment. The amendment applications seek to:

- Application 1: authorise operation of the Westralia Pit Berm Expansion (WPBE), Processing Plant, Vanguard in pit TSF and process water storage and drainage ponds constructed under W6724/2022/1 under the existing licence L9259/2020/1; The infrastructure constructed under works approval W6724/2022/1 is currently operating under time-limited operations (TLO) and is shown in Figure 1.
- Application 1: approval to add to the current licence new dewatering pipelines and associated discharge points from the Prospero Boxcut to the Henderson and Westralia Pits, a new pipeline connecting the Henderson and Westralia pit and a pipeline from the Circular Shaft to the Henderson Pit; and
- Application 2: Include an additional location to operate category 70 activities (crushing and screening) to the west of the existing authorised location within the prescribed premises, as depicted in Figure 3.

This amendment is limited to changes to Category 5, 6 and 70 activities on the existing licence. No changes to the aspects of the existing Licence relating to Categories 52, 54 or 64 have been requested by the Licence Holder. Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed design changes

Prescribed premises category and description	Approved production or design capacity	Proposed changes to the production or design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	N/A	1,000,000 tonnes per annum (tpa), authorised under W6724/2022/1
Category 6: Mine dewatering	500,000 tpa	Increase to 1,000,000 tpa, including 500,000 authorised under W6724/2022/1
Category 52: Electric power generation	30MW	No changes proposed
Category 54: Sewage Facility	150 m^3 per day	No changes proposed
Category 64: Class II or III putrescible landfill site	500 tonnes per year	No changes proposed
Category 70: Screening etc. of material	Less than 50,000 tonnes per annual period	No changes proposed

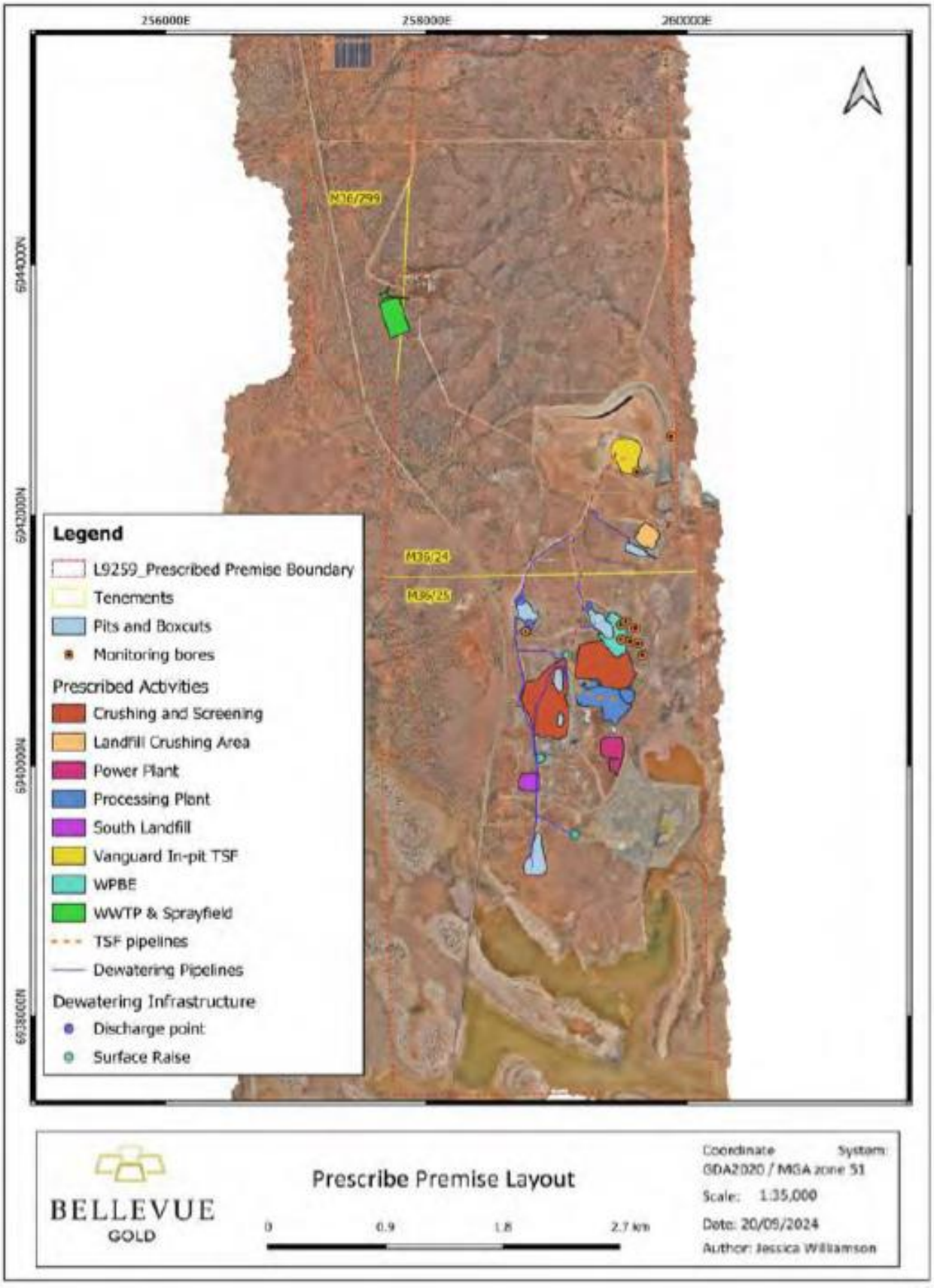


Figure 1 – New infrastructure on the amended licence (In-pit TSF, process plant infrastructure, WPBE, dewatering pipelines and crushing and screening plant).

2.2.1 Vanguard in-pit tailings storage facility (Category 5)

The Vanguard Pit has an estimated tailings storage capacity of 72,000 m^3, with an estimated deposition life of 1.15 years. Tailings are to be deposited from a single discharge point to the north-west of the pit. The crest elevation is 477 m RL, and the pit depth is approximately 68 m. The licence holder was authorised to undertaken TLO for Vanguard in-pit TSF (Stage 1) and associated pipeline infrastructure under W6724/2022/1. The department has assessed that the licence holder has demonstrated compliance against construction requirements for this infrastructure as specified in condition 1, Table 1 of works approval W6724/2022/1.

The licence holder was requested to provide baseline data collected from monitoring bores MB04 and MB05 (as required to be monitored under condition 9 of the W6724/2022/1) and groundwater quality monitoring results during TLO. The results of the monitoring bores illustrate that there has been an increase in standing water level (SWL) in excess of 1 m in both MB04 and MB05 compared to baseline levels prior to TLO. As of June 2024, SWL in both bores was deeper than 11 m bgl. All analytes remained below baseline conditions except for bicarbonate and nitrate, where there has only been a very small increase.

The licence holder was also requested to provide monitoring results of weak acid dissociable cyanide (WADCN) from decant water (under condition 13 of the W6724/2022/1). In January 2024 the WADCN in the decant water was above the limit of 50 mg/L, this was reported to the Department via email on 12 January 2024. Besides this exceedance, the WADCN has been consistently below 50mg/L.

2.2.2 Processing plant (Category 5)

The licence holder is operating the Bellevue Processing Plant under TLO. This Processing Plant will process ore at a rate of up to 1,000,000 tonnes per annum, producing approximately 200 Koz of gold per annum over an initial 10-year life of mine. The Processing Plant is a basic Carbon in Leach (CIL) processing facility with a three-stage crushing circuit and a single stage milling circuit. Key components of the processing plant include:

- Primary, secondary and tertiary crushers.
- 8-stage conveyor arrangement.
- Fine ore storage facility.
- Single stage milling circuit.
- A pre-leach thickener.
- Leaching circuit – 8 tanks in circuit.
- A tailings thickener.
- Bulk chemical storage including cyanide, lime, hydrochloric acid, caustic soda, hydrogen peroxide and flocculant.
- Elution and adsorption circuits.
- Gold room – basic refining facility.
- Process water pond and a containment pond.
- Temporary LPG Storage.

An environmental compliance report was submitted by Licence Holder to demonstrate compliance against Works Approval W6724/2022/1 conditions related to the processing plant. The report demonstrated compliance against all items except for item 2b (air emission points). The non-compliances were assessed as being minor by the department, relating to variations of stack dimensions (height and diameter – 10 to 53 cm deviation).

2.2.3 Process water storage ponds and site drainage pond (Category 5)

Construction and TLO of raw and process water storage dams and a site drainage pond for

capturing potentially contaminated water from the processing area were approved under W6724/2022/1 (refer to Figure 6 in the amended licence L9259/2020/1). The licence holder has demonstrated compliance against all construction requirements under the works approval except for item h) (site drainage pond capacity). The non-compliance was considered minor, and no further actions were deemed required.

2.2.4 Westralia Pit Berm Expansion (WPBE) and monitoring equipment (Category 6)

The purpose of the WPBE is to store water abstracted as part of underground development and open pit mining. The overall designed water storage capacity of the WPBE was initially 467,000 m^3. Due to project limitations and the requirement for early water storage to facilitate underground development, the WPBE was divided into two stages comprising WPBE Stage 1 (two waste placement stages) and WPBE Stage 2. WPBE Stage 1 construction was completed on 28th of July 2023 with a maximum water storage capacity of approximately 365,000 m^3. More recently, WPBE Stage 2 has been constructed with a maximum water storage capacity of approximately 482,000 m^3.

The WPBE has been designed in accordance with the Australian National Committee on Large Dams (ANCOLD) Guidelines (ANCOLD, 2012). The WPBE Stage 2 design capacities is provided in Table 2.

Table 2 – WPBE Stage 2 Design Capacities.

Parameter	WPBE Design (Nov 2022)	WPBE Stage 2
Crest Elevation (m RL)	479.5	479.5
Total Freeboard (m)	2.35	2.35
Maximum Storage Elevation (m RL)	477.15	477.15
Maximum Crest Height (m)	16.0	16.0
Storage Capacity (m^3)	479,000	482,000

A Compliance Report has been prepared by the Licence Holder to demonstrate that the Westralia Pit Berm Expansion and monitoring equipment – Stage 1 and 2 (refer Item 4 Table 1 of Works Approval) at premises has been constructed in accordance with Works Approval W6724/2022/1, granted on 1 June 2023. Construction of the WPBE and monitoring equipment – Stage 2 was completed on the 16th of February 2024.

As part of the assessment of the compliance report, a non-compliance with condition 1, Table 1, Item 4 was identified. The clay apron in the extended section to Stage 2 was not completely installed (yet to be placed in area 1 and area 2 shown in Figure 2).

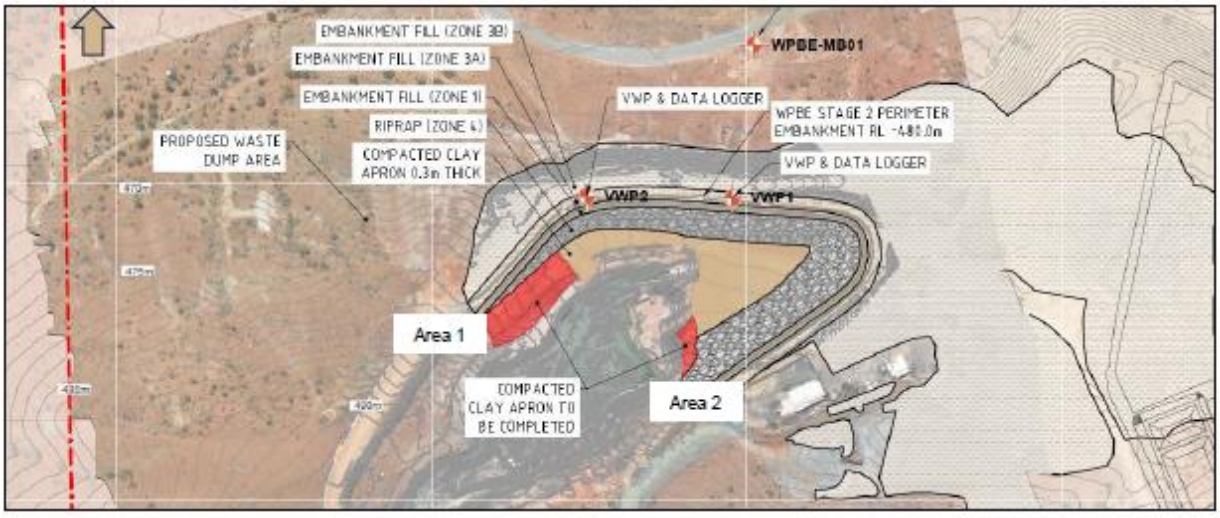


Figure 2 – Clay apron to be installed in Area 1 and Area 2.

Clarification was sought from the Licence holder on status of the installation of the clay apron as part of the assessment of this licence amendment. The Licence holder informed that the clay apron pending Area 1 construction was completed to the Stage 2 elevation of 479.5 m. It was decided that Area 2 would not require a clay apron due to the safety risks involved in working near the pit edge and the water level inside the pit.

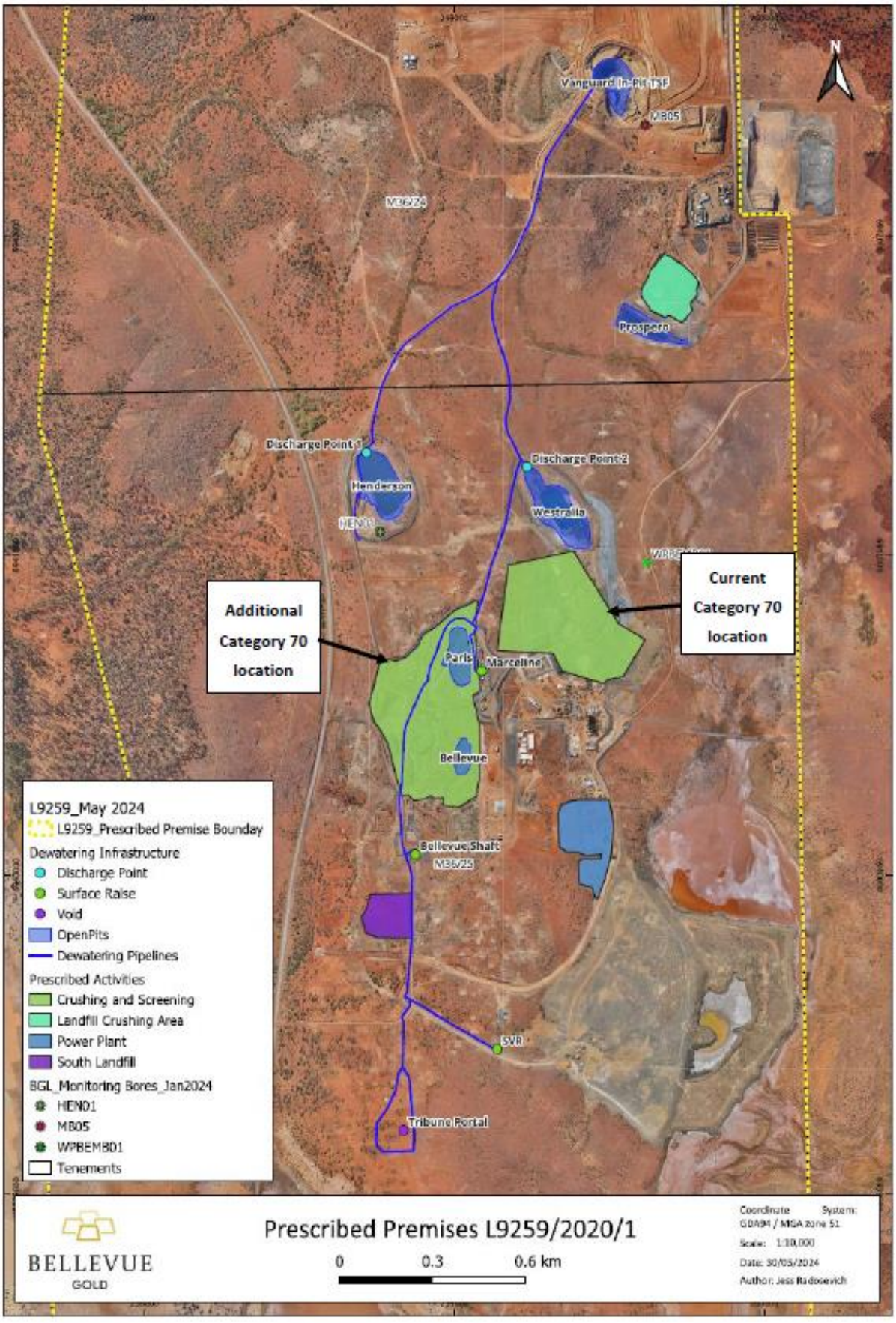


Figure 3 Existing and additional locations for Category 70 activities

2.2.5 Dewatering pipelines and discharge to pits (Category 6)

Dewatering is proposed to provide access to orebodies. Currently, groundwater is pumped to the surface via underground pumps and then transferred in overland pipelines and stored in two pits: Henderson and Westralia. Historically water was also discharged to the Prospero and Vanguard pits. Stored water is used in the processing plant and for dust suppression.

Abstraction of the underground operations is undertaken in accordance with groundwater licence (GWL) 202924. The GWL has an allocation for water abstraction of 1 million kL per year from the underlying fractured rock aquifer.

There are four dewatering points within the premises. Approval is sought for an additional source point at Propero Boxcut (all source points are show in green in Figure 4) and two discharge points: Henderson and Westralia pits (shown in purple in Figure 4).

The following three new dewatering pipelines are also required to be constructed and operated:

1) Pipeline from Prospero Boxcut to the Westralia Pit (Figure 4): The Prospero underground workings are currently full of water so the applicant would like the capability to use this water if required. There is a pipeline already in place running from north to south, the new pipeline will be approximately 700 m long and connect the Prospero Boxcut to this current dewatering line.
2) Pipeline from the Circular Shaft directly to the Henderson pit (Figure 5): This pipeline will connect the circular shaft pump, which pumps water directly from underground to the Henderson Pit. The current pipeline from the circular shaft goes north and then diverts to both the Westralia and Henderson Pits. This new pipeline will enable direct access to the Henderson pit which will mean a shorter pumping distance. This new pipeline will be 1,222 m in length and will be capable of transferring 40L/s. The pipeline will be installed adjacent to current access roads.
3) Pipeline connecting the Henderson and Westralia Pits (Figure 5): This pipeline will link the Henderson and Westralia Pits it will be designed to run in both directions, allowing excess water from the underground to be diverted to the Westralia Pit for use in the processing operation. Alternately, if water levels become low in the Henderson Pit water can be transferred from Westralia. This new pipeline will enable increased flexibility for water movement around site. It will run 490 m and be capable of transferring 90L/s. An additional discharge point on the western edge of Westralia will be required.

In addition, the location of the Tribune Boxcut dewatering pipeline (previously approved) is required to be moved 30 m west to align with the new haul road (Figure 6). This pipeline is yet to be constructed.

All dewatering pipelines will be constructed from high-density polyethylene (HDPE) (PN6.3) with the nominal diameter either 200 mm or 315 mm and will be contained within a V-type drain or bund as per all other dewatering pipelines on the premises. Flow meters will be installed to measure the volumes being transferred and to maintain the site wide water balance. These additions to the dewatering capability on-site will allow greater flexibility of water movement and will increase efficiency and optimisation. No additional water is required to be discharged above the 500,000 tpa approved under current licence and 500,000 tpa approved under works approval W6724/2022/1 (to be transferred to the licence).

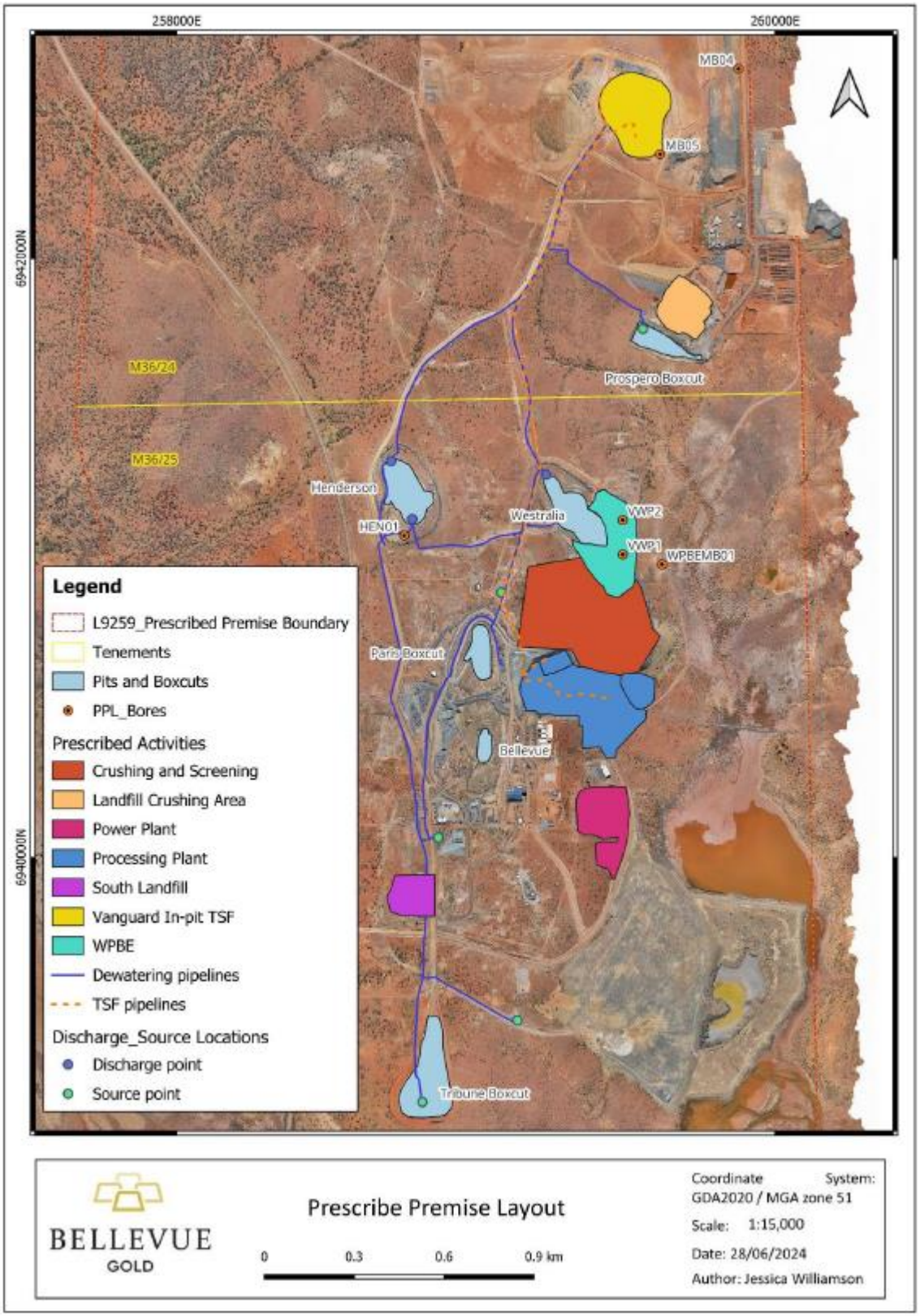


Figure 4 – Dewatering (source) and discharge points.

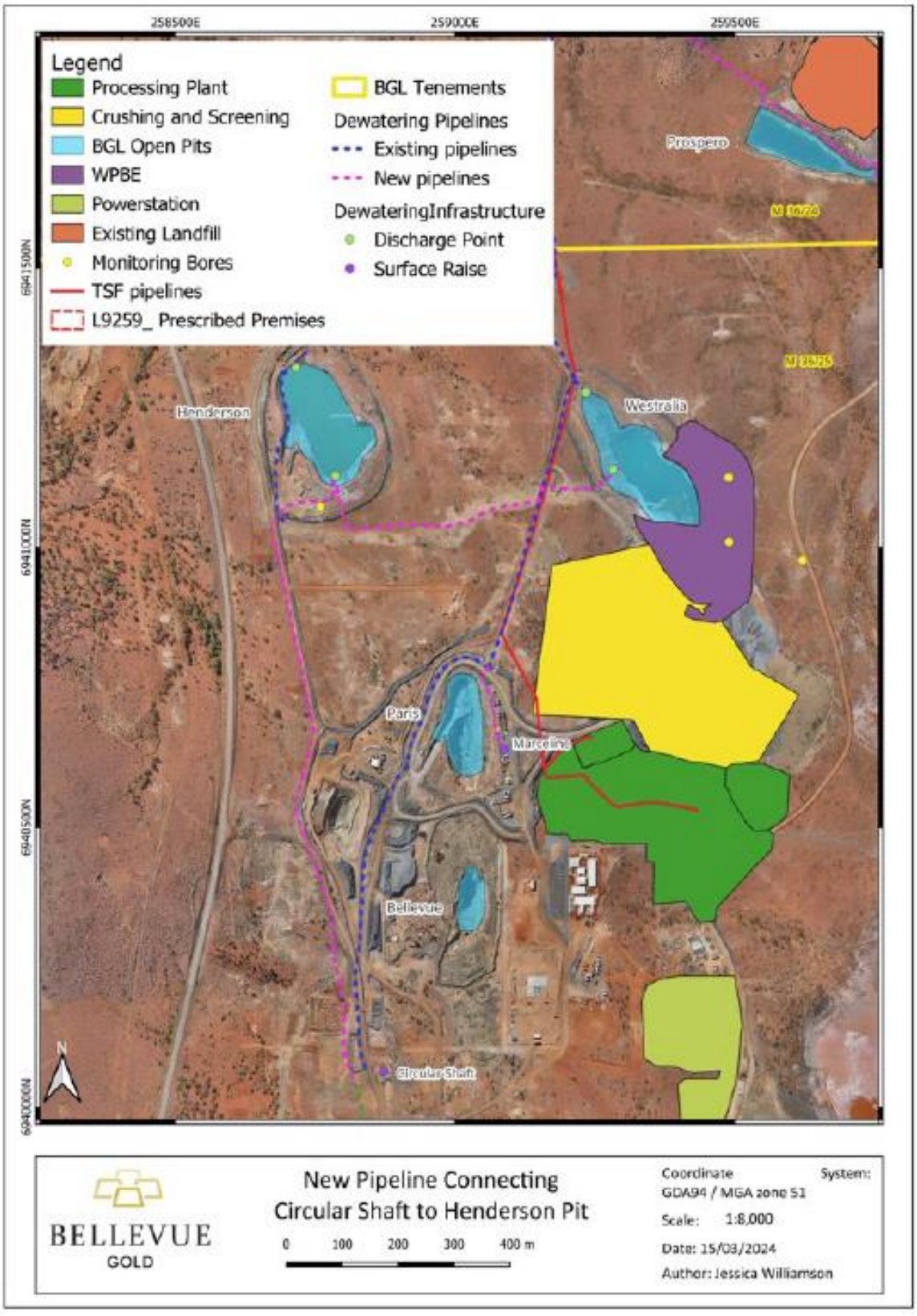


Figure 5 – Pipeline Connecting Circular Shaft to Henderson Pit and Henderson pit to Westralia pit.

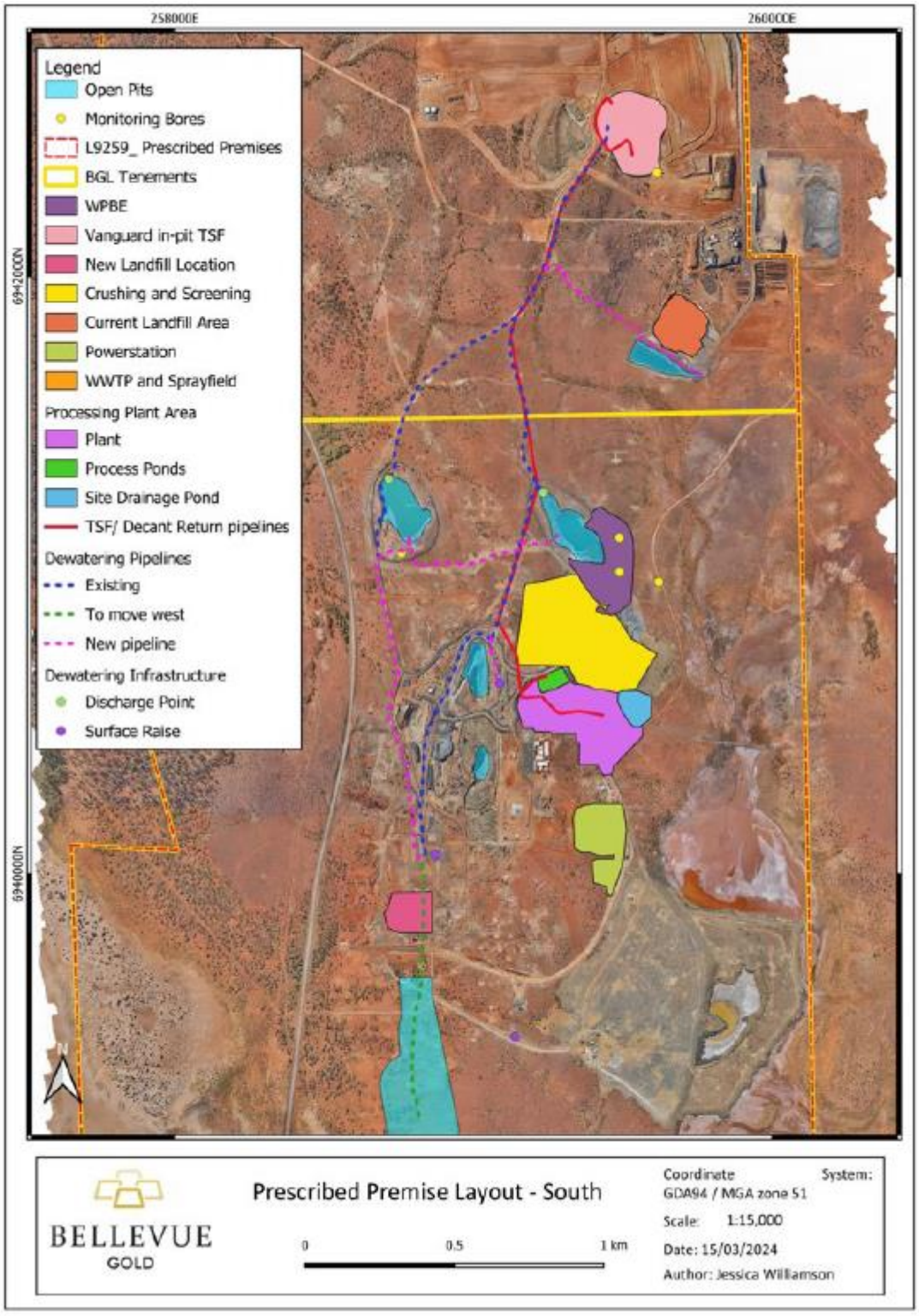


Figure 6 – Dewatering pipeline in green to be moved 30 m west to align with the new haul road.

Henderson and Westralia pit water balance and water quality monitoring

The licence holder states that the total storage availability (from both pits) is 352,270 kL. The long-term predictive water balance shows that the site abstracts more water than is used on site from June to September 2024 (i.e. generates excess water for storage), however with the

commencement of stage 2 of the IWLTSF, the premises will use more water than what is abstracted. By January 2028 the site is expected to be in a water deficit. Bellevue is currently planning for this water deficit with the installation of the Prospero pipeline described above. The water from Prospero will only be utilised when other pits are depleted of water.

Monitoring data from Westralia and Henderson pits was provided by the licence holder. There are no notable exceedances or increasing trends in analytes of concern (metals), with water results in the pits relatively consistent since monitoring commenced in December 2019. TDS has remained relatively constant ranging from 130,000 to 183,000 parts per million (ppm).

2.2.6 Review of standing water level limit at Bore MB01

The existing licence condition 17 (Table 8) specifies that the SWL in monitoring bore WPBEMB01 must not rise higher than 5 m bgl. The licence holder has requested a review of this limit given the background SWL is less than 5 m bgl in bore WPBEMB01, based on water levels measured since installation (SRK 2024). Groundwater is also less than 5 m bgl in nearby bores WPBEMB03, WPBEMB04 and WPBEMB05 (refer to plotted SWL in bores in Figure 8 and bore locations in Figure 9).

3. Legislative context

3.1 Part IV of the EP Act

The Project was referred to the Environmental Protection Authority (EPA) on 7 December 2021 where details of the environmental factors including flora and vegetation, terrestrial fauna, social surroundings and inland waters were presented.

The EPA determined on 27 May 2022 that the likely environmental effects of the proposal were not so significant to warrant formal assessment, due to the proposal being within a historically disturbed area.

3.2 Mining Act 1978

The Department of Mines, Industry Regulation and Safety (DMIRS) have assessed and approved Mining Proposal REG ID 110429, which includes the Westralia Pit Berm Expansion, Intergraded Waste Landform – Tailings Storage Facility (water storage dam) and Vanguard Pit – In Pit Tailings Storage, under provisions of the *Mining Act 1978*.

4. Seepage and groundwater monitoring at Westralia Pit

4.1 Seepage incident and management

During the assessment documented in this report, seepage was identified at the downstream embankment toe of the Westralia Pit on 14 July 2024. The seepage was measured to have a flow rate of 0.09 L/s and an area of 591 m2 was estimated to have been impacted. The in-field analysis results showed that the water was hypersaline (135,000 us/cm) with a similar salinity to the Westralia Pit water (148,300 us/cm). The seepage followed an ephemeral drainage line to the road and then into the fringes of Lake Miranda (Salt Lake).

In response, the licence holder ceased pumping water to the Westralia Pit so that an investigation could take place to identify the source of the seepage. Interim seepage management measures implemented by the licence holder include:

- Construction of a large sump at the road downstream to collect all overland seepage runoff;
- Installation of a pump to direct collected water along the road via pipelines to dams in the processing plant are; and

- Daily visual monitoring of this interim sump and pump to ensure it is working correctly.

A long-term solution has been proposed to construct a permanent seepage interception trench and sump at the toe of the Westralia berm. Water would be pumped directly back into the Westralia Pit via pipelines over the wall. Daily monitoring of this infrastructure will be undertaken, and volumes recorded.

The seepage is not expected to impact the wall stability, as the water is more likely to follow preferential flow paths through fractures in the underlying rock (refer to Figure 7), which offer less resistance (REC 2024). Any possible seepage through the embankment wall is low due to the permeability of the Zone 1 material which lines the upstream embankment face, which has a hydraulic conductivity in the order of 10^{-9} m/s and a wall width of 6.0 meters (REC 2024). Further, the geotextile layer at the interface between the Zone 1 low permeability batter and the Zone 3A traffic-compacted mine waste prevents fine particle loss through any seepage that may occur through the wall, while bulk mine waste placed behind the embankment, with a crest width of 20.0 meters, offers additional stability to the structural component of the embankment (REC 2024). Potential risks to stability have been referred to the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).

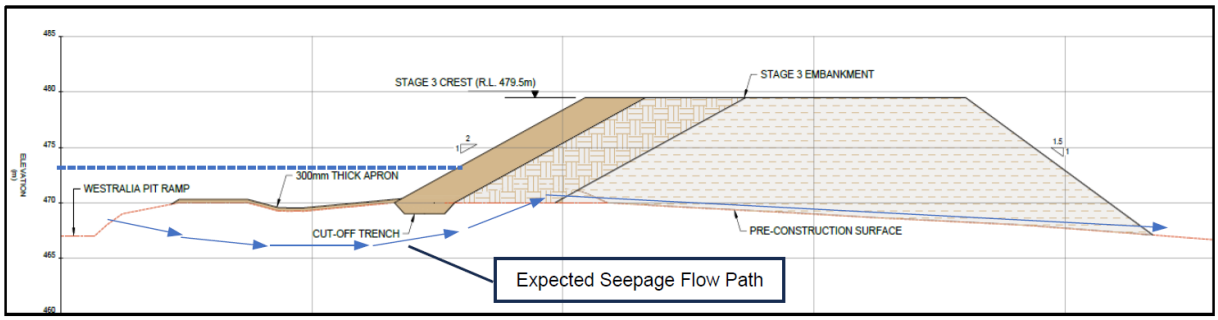


Figure 7 - Westralia Pit seepage flow path schematic

4.2 Review of groundwater monitoring

The licence holder has installed five monitoring boreholes to the east and southeast of Westralia Pit, between the pit and Lake Miranda. Two monitoring bores (WPBEMB01 and WPBEMB02) were constructed in July 2023, with three additional monitoring bores (WPBEMB03 to WPBEMB05) subsequently constructed in December 2023 to gain a better understanding of the groundwater regime and the impact on groundwater close to Westralia Pit (Figure 9). Two vibrating wire piezometers were also installed in the Westralia Pit berm in December 2023. Due to the recent installation dates, limited groundwater monitoring data is available to review the potential impacts to groundwater quality or changes to the water table down-hydraulic gradient to the seepage location. Further, baseline SWL are difficult to establish given the Westralia Pit had been in operation for many years prior to installation of this bore.

A review of groundwater monitoring data provided to date from these bores shows that SWL have increased in four monitoring bores to the east of Westralia Pit from February to August 2024. However, several rainfall events have occurred in this period including a significant event in February 2024 (SRK Consulting 2024). Therefore, the degree to which rainfall and seepage from Westralia Pit have respectively caused a response in groundwater levels is difficult to identify and this is further complicated by the presence of the underlying fractured rock aquifer.

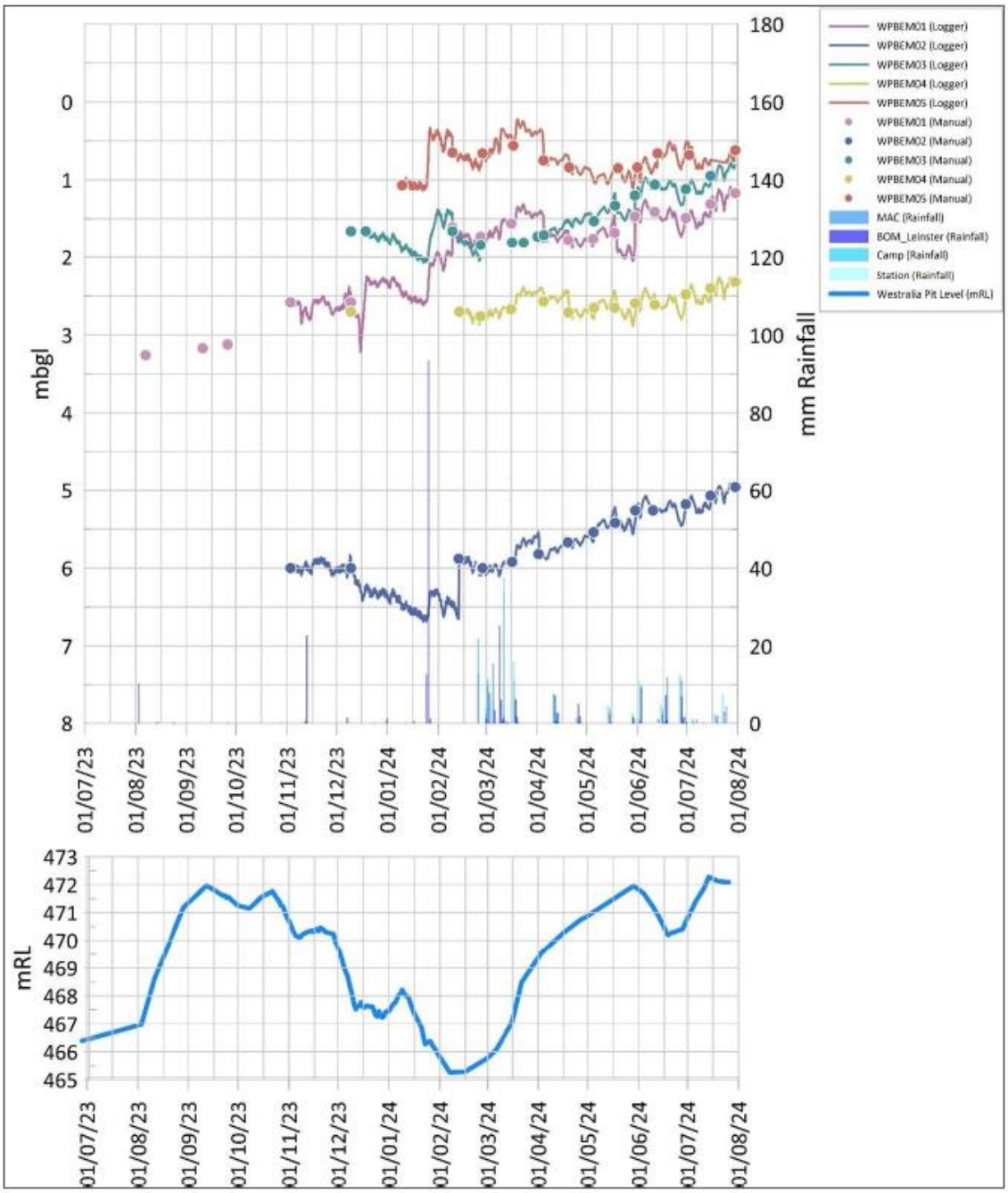
As noted in section 4.1, analysis results showed that the seepage water was hypersaline (135,000 us/cm) with a similar salinity to the Westralia Pit water (148,300 us/cm). Salinity levels in bore WPBEMB01, measured as total dissolved solids (TDS), has ranged from 87,600 mg/L in November 2023 to 168,000 mg/L in October 2023. Westralia Pit water during the same period has ranged from 90,300 mg/L in March 2024 to 105,100 mg/L in September 2023. Again, baseline salinity levels are difficult to establish given Westralia Pit was in operation for several years before bores WPBEMB01-05 were installed.

Only one of the bores installed to the east of Westralia Pit is listed on the existing licence (WPBEMB01). The licence holder has requested that the SWL limit of 5 m bgl at this bore be removed from the licence given SWL have been higher than 5 m bgl since bore WPBEMB01 was installed. Bore WPBEMB01 had a SWL of 2.403 m bgl when installed in July 2023, which has progressively risen over time to 1.41 m bgl in June 2024.

In lieu of this control, the licence holder has proposed the following controls to protect native vegetation from potential groundwater mounding as a result of seepage from the Westralia Pit:

- Continue monitoring groundwater levels with daily measurements using data logger and monthly manual measurements using a dip meter.
- Continue monitoring of groundwater quality at the boreholes to determine deviations from background groundwater quality conditions
- Continue photographic monitoring of the vegetation in the Westralia Pit area but increase the frequency from quarterly to monthly
- Put in place a contingency plan in case the groundwater levels rise and start having an impact on the vegetation

Following review of the data provided in **Figure 8**, the Delegated Officer agrees that the SWL limit of 5 m bgl should be removed from bore WPBEMB01 under this amendment. To ensure adequate protection of native vegetation in the vicinity of the Westralia Pit and the Lake Miranda salt lake ecosystem, the additional controls listed above will be considered in the risk assessment in section 5.



Source: Bellevue Gold (2024)

Figure 8 - Comparison of groundwater levels in bores east of Westralia Pit (m bgl), rainfall (mm) and Westralia Pit levels (m RL)

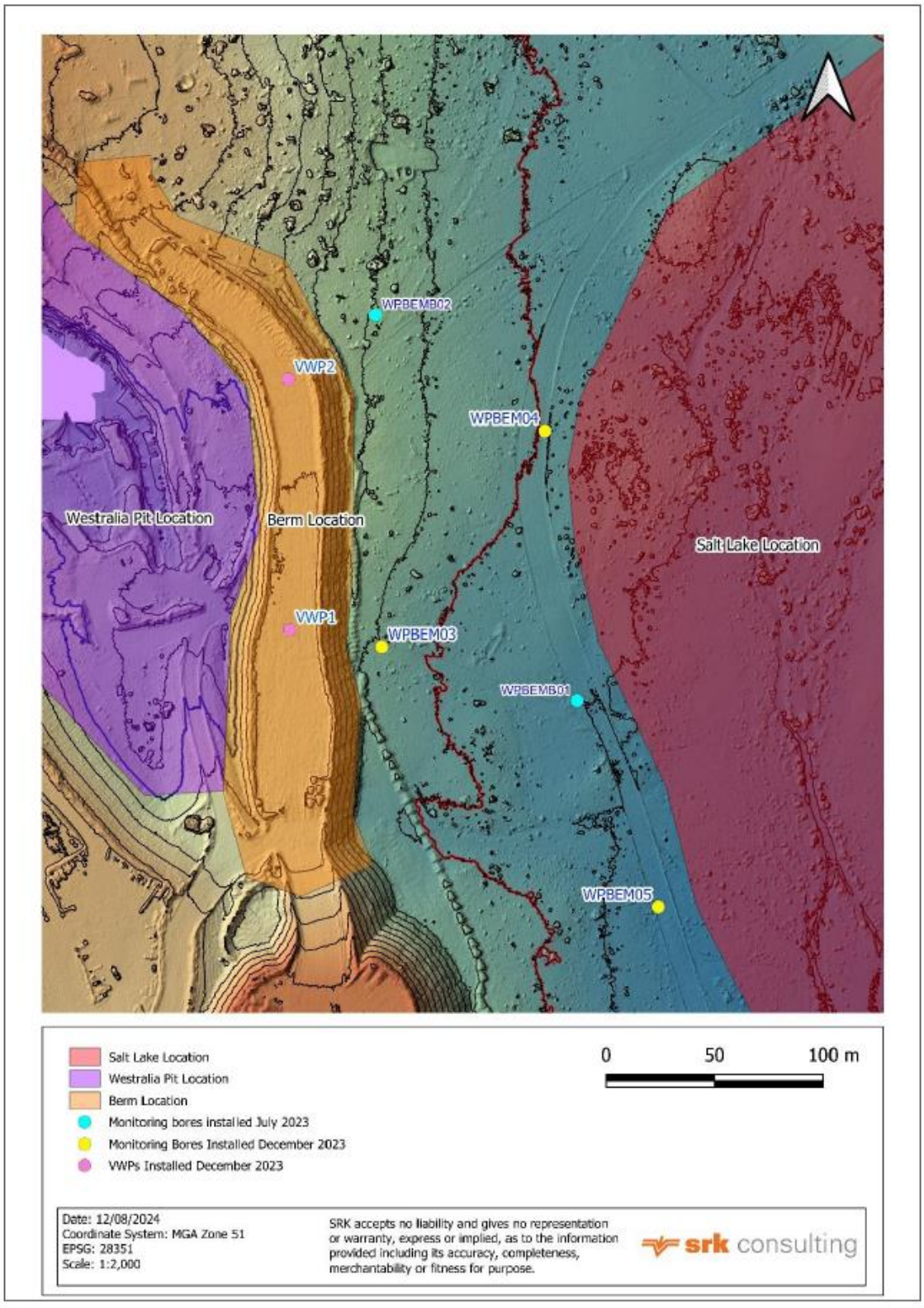


Figure 9 - Monitoring bores between Westralia Pit and Lake Miranda

5. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

5.1 Source-pathways and receptors

5.1.1 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	Potential pathways	Proposed controls
Construction/installation of pipelines – Category 6			
Dust	Construction and installations of pipelines	Air/windborne pathway	Existing dust suppression system will be used to prevent dust generation.
Hydrocarbon spill	Spill from vehicles, surface mobile equipment and fuel tanks	Air/windborne pathway	• Hydrocarbons managed in accordance with Australian Standard 1940-2004: *The Storage and Handling of Flammable and Combustible Liquids*. • Hydrocarbons stored and transferred within low permeability compounds designed to contain not less than 110% of the volume of the largest storage vessel and at least 25% of the total capacity of all tanks for a multiple tanks system. • Fuel bowsers and fuel delivery inlets will be located on concrete or HDPE-lined pads to contain any drips and spills. The pads will drain to a sump. • Vehicle cleaning facility, with sediment collected in a concrete sump and wash down water treated. • Spill kits and clean-up procedures. • Oily wastes disposed of by licenced contractor. Contaminated soil to be treated in-situ, at the bioremediation pad or transported to a controlled waste licenced facility for treatment.
Sediment laden stormwater	Overland runoff from construction site	Direct emission to land	No controls proposed. Activity is temporary.
Operation – Category 6			
Saline to hypersaline water	Dewater pipelines	Direct discharge to land Infiltration through soil to groundwater	Pipelines contained in v-drains and bunds. Flow meters installed. Daily inspection of entire pipeline infrastructure.
Saline to hypersaline water	WPBE and pits	Seepage causing mounding into vegetation root zone or surface waters	Embankment construction including: • A cut-off trench backfilled with compacted low permeability borrow. • Groundwater (seepage) and pore

			water monitoring • A low permeability clay apron (the department notes that sections have not been installed) • A low permeability upstream face, with rock armour to protect it against erosion. Geotextile to minimise piping. Monitoring of standing water levels in bores surrounding discharge pits. • Continue photographic monitoring of the vegetation in the Westralia Pit area but increase the frequency from quarterly to monthly • Put in place a contingency plan in case the groundwater levels rise and start having an impact on the vegetation
Overtopping of saline to hypersaline water	WPBE or pits	Direct discharge to vegetation and soil	Pit water levels are monitored monthly Inspect pits visually every 12 hours
Operation – Category 5 – Vanguard in-pit TSF			
Decant pond water	Direct deposition of tailings into Vanguard in-pit TSF	Wildlife (primarily birds) accessing the decant ponds, which are elevated in cyanide	• Fencing to minimise access. • Cyanide monitoring, and control of cyanide levels within the processing plant. • Regular monitoring of the usage of the TSF and TSF return water ponds by fauna. • Process operating systems committed to minimising cyanide usage where possible. • Use of pre-leach and tailings thickeners to minimise water to tailings
Tailings leachate (saline to hypersaline, containing elevated cyanide)	Direct deposition into Vanguard in-pit TSF	Seepage to groundwater, potentially impacting Lake Miranda; mounding into vegetation root zone causing plant stress or death.	• Decant recovery by a floating pump to maximise consolidation of tailings. • Potential acid drainage controlled by either coverage of tailings at all times by 1.0m of water or incremental deposition of tailings until the facility is incorporated into the IWLTSF (Stage 2). • Monitoring of groundwater level and chemistry.
Spill of tailings	Failure of pipelines	Direct	• All tailings and associated return

or tails return water	between the processing plant and in-pit TSF	discharge to vegetation and soil	water pipelines (excluding pipelines which are situated on the In-Pit TSF) are to be in an earthen bund which is sufficient to contain any spill for the time between inspections. • All pipelines equipped with remote monitoring systems and pressure sensors to allow the detection of leaks and failures and triggering automatic shutdown of pumping in the event of a pipe failure.
Overtopping of tailings (Saline to hypersaline, containing elevated cyanide)	Vanguard in-pit TSF	Direct discharge to vegetation and soil	• Design operating freeboard calculated to allow for expected inflows. • Inspections performed at least once per 12 hour shift.
Operation – Category 5 – Process plant and associated water ponds			
Dust	Crushing and screening of ore. Lift off from fine ore stockpiles	Air / windborne pathway	• Misting systems/sprinklers used on crusher. • Onsite speed limits enforced. • Water cart retained onsite. • Wetting down of roads when required. Distance from receptors makes dust emissions unlikely to be a concern
Noise	Crushing and screening of ore Stockpiling of fine ore	Air / windborne pathway	• Onsite machinery fitted with muffler and reversing air horns rather than beepers where practical. Distance from receptors makes noise emissions unlikely to be a concern.
Contaminated stormwater	Runoff from process plant footprint	Soil Surface water	Contaminated surface water runoff will be managed by: • Diversion infrastructure, including bunds and drains, to divert contaminated water within the process plant footprint but outside the infrastructure bunds toward the site drainage pond. • The site drainage pond will have a capacity of approximately 9,680m^3, greater than 72 hour 1 in 5-year rainfall event. Water will be removed from the site drainage pond following a rainfall event by pumping the water to the process water pond.

Spills and leaks of hydrocarbons / chemicals	Spills from machinery operating, refuelling and fuel storage	Soil, surface water runoff	Hydrocarbon storage and hydrocarbon contaminated waste will be managed as per the same control measures used during construction. All chemical reagents will be stored within tanks in appropriately bunded facilities whereby 110% of the largest vessel is contained and 25% of the total volume is contained according to Australian Standards AS1940 and AS1692.
Air emissions - Particulates, sulfur dioxide, oxides of nitrogen, carbon monoxide and volatile organic compounds (VOCs)	Air emissions from the carbon regeneration and gold room areas	Air / windborne pathway	None provided as part of the application. Stack construction as per requirements imposed under W6724/2022/1. Kiln stack fitted with a stack monitoring port.
Process chemicals	Leaks and spills from reagent storage, pipelines and pumps. Overtopping, leaks and spills from processing infrastructure.	Surface water runoff Infiltration through soil to groundwater	• Bunding designed with a minimum kerb height of 150 mm. • All bunded areas will include falls to ensure adequate drainage to the sump; • Most bunded areas will be provided with locally operated permanent sump pumps. Where required by dangerous goods safety legislation, sump pumps will start remotely via a level switch.
Overtopping of saline water with residual process chemicals and suspended solids.	Process Water Dam	Direct discharge to land Infiltration through soil to groundwater	Ponds will be HDPE lined to meet a permeability of 1 x $10^{-9}ms^{-1}$. The ponds will be positioned within the Catchment Area 1 that drains toward the site drainage pond.
Saline Water	Raw water storage dam	Direct discharge to land Infiltration through soil to groundwater	
Pipelines for carrying saline water and processing liquids/slurries	Pipelines to ponds	Direct discharge to land Infiltration through soil to groundwater	All pipelines equipped with remote monitoring systems and pressure sensors to allow the detection of leaks and failures and triggering automatic shutdown of pumping in the event of a pipe failure.

Installation and Operation – Category 70 - Screening etc. of material			
Dust	Operation of crushing and screening plant at the additional location, including vehicle movements. Lift-off from stockpiles and/or stored product.	Air/windborne pathway	• Dust suppression of fugitive dust emissions from operation of mobile plant including watering of stockpiles, unsealed roads and open areas. • Vehicle speed limits applied to reduce dust emissions. • Crushing and screening will not be undertaken within periods of extreme adverse weather conditions. • Regular inspections of operations to monitor efficacy of dust control measures.
Sediment laden stormwater	Stormwater interaction with operational areas, stockpiles	Overland runoff and infiltration	• Strategic bunding and/or sumps at active crushing and screening area to prevent runoff, depending on site location and topography. • Spill kits in fuel/hydrocarbon storage, use and transfer locations, to ensure timely containment and cleanup of spills. • Diesel engines will be maintained and service on a regular basis and according to the manufacturer's specifications to ensure efficient running (BGP, 2024).
Hydrocarbon contaminated stormwater	Stormwater interaction with refuelling areas or operational areas exposed to spills or leaks		

5.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

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

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

Environmental receptors	Distance from prescribed activity
Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) – Priority Ecological Community (PEC) - Priority 1	Mapped as "present" across the premises. The majority of the PEC within the proposed operational areas of the Bellevue Gold Operation is in a degraded state due to historic mining activities. Present across the premises including category 70 activity area.
Yakabindie calcrete groundwater	Approximately 1.6 km west of the processing area.

assemblage type on Carey palaeodrainage on Yakabindie Station – Priority Ecological Community - Priority 1	Approximately 2.5km south-east of the Westralia Pit.
DBCA Priority Flora • *Grevillea inconspicua* (P4); • *Hibiscus sp.* Perrinvale Station (P1); and • *Goodenia lyrata* (P3).	Within the premises. *Grevillea inconspicua* (*Cue grevillea*) – P4 - Very adjacent to the category 70 activities within 275 m. CPS 9951/1 is authorised to clear this area.
Lake Miranda (salt lake)/surface water drainage/body	Westralia Pit and the proposed in pit TSF are both upstream of Lake Miranda. The center of the processing plant is within 350 m of a flat playa that is connected to Lake Miranda. The Geocortex hydrography layer records this as a section of Lake Miranda itself. The storm water drain for the plant is on the shore of the playa. Greater than 500m from the category 70 operational area.
Underlying groundwater (saline) Within the Goldfields Groundwater area under the *Rights in Water and Irrigation Act 1914*	Fractured rock aquifer with water levels approximately 15 – 30 m below ground level. Salinity between 17,900 mg/L and 90,400 mg/L total dissolved solids. Groundwater within the Project area flows south from the mine area to the Lake Miranda, which acts as a groundwater sink. Groundwater at the lake is typically far shallower than at the mine area and may be less than two meters below the surface. These waters support halophytic vegetation across the lake.
Cultural and heritage receptors	**Distance from prescribed activity**
Aboriginal Heritage Inquiry System (AHIS) Registered Aboriginal Sites throughout prescribed premises and Bellevue Gold Project tenements.	The Bellevue Gold project tenements are located within an area of high cultural heritage significance. There are several registered sites on the Aboriginal Heritage Inquiry System register. The applicant has indicated many of these sites have been mapped by DPLH with large extended boundaries and overlapping large polygons that do not reflect the actual location of the site and completely cover the Project area. A Native Title Agreement (NTA) exists between Golden Spur Pty Ltd parent company Bellevue Gold and Tjiwarl Aboriginal Corporation RNTBC. A co-designed Cultural Heritage Management Plan (CHMP) is to manage future activities. The applicant states that because of consultation with the Aboriginal Consultation Group and additional heritage work, heritage sites' locations and cultural values within the project area are well understood, and that the project footprint has been designed to avoid all known Aboriginal heritage sites.

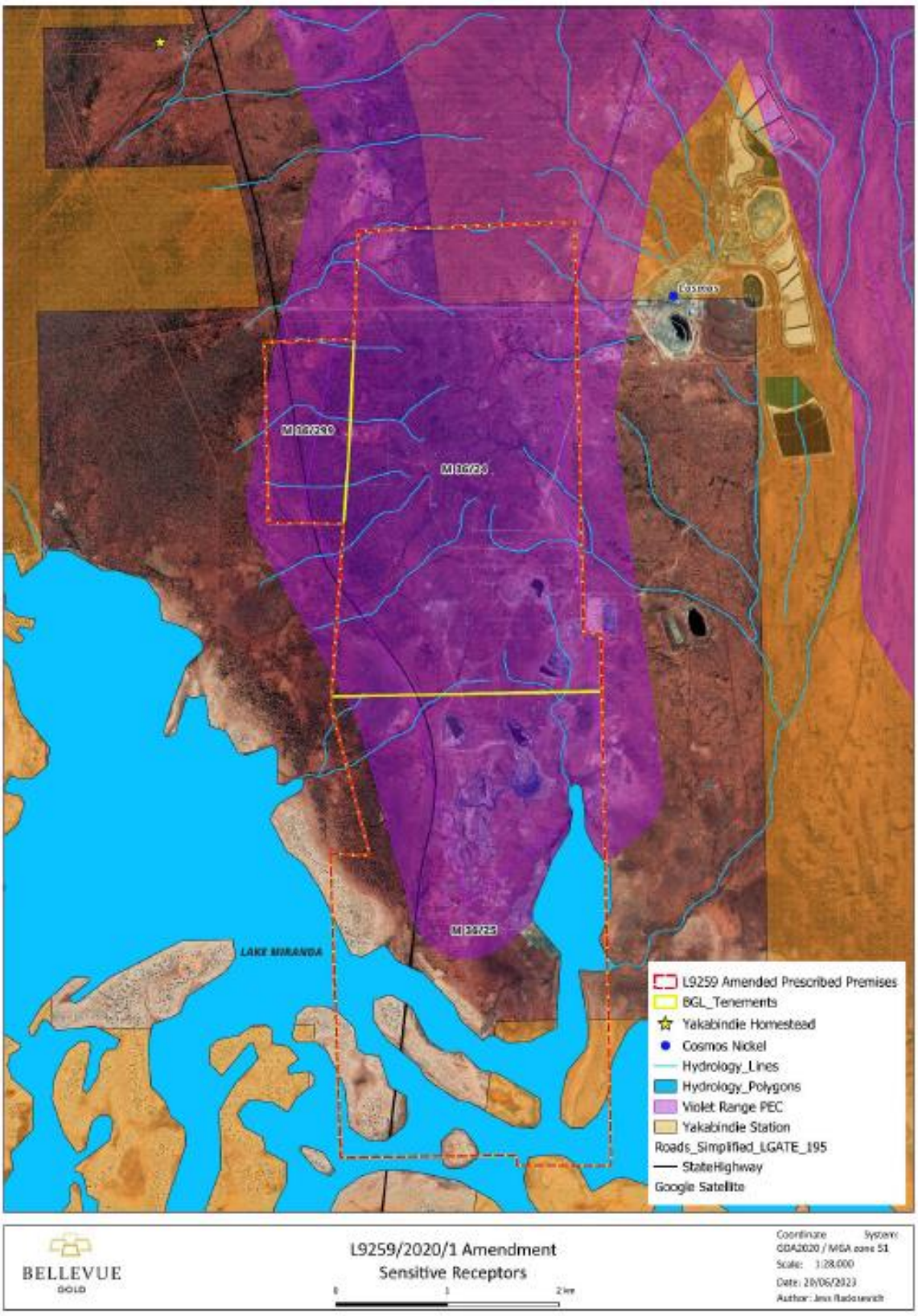


Figure 10 – Violet Range PEC, surface drainage and Lake Miranda location in relation project tenements.

5.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 5.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 5.1), 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. dewatering, putrescible landfill, screening and crushing 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 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								
Construction of dewatering pipelines	Dust	Air/windborne pathway causing impacts to health and amenity	Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	N/A	N/A
	Contaminated sediment laden stormwater Water runoff contaminated by hydrocarbons	Discharge to land causing contamination of overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Lake Miranda	Refer to Section 3.1	C = Slight L = Possible **Low Risk**			
Operation – Category 5 – Process plant								
Operation of: Crushing and screening plant with fine ore storage Grinding and classifying infrastructure Leach and adsorption circuit Gold recovery including carbon regeneration	Dust	Air / windborne pathway causing impacts to health and amenity through smothering of vegetation impeding photosynthesis.	Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 2	Where operational conditions imposed under W6724/2022/1 are considered sufficient they have been transferred to the licence.
	Contaminated sediment laden stormwater	Discharge to land causing contamination of overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Lake Miranda Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 2	Operational conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.

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**				
	Water runoff contaminated by hydrocarbons and process chemicals	Discharge to land causing contamination of overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Lake Miranda Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 2	Operational conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.
Operation of Water Storage dam with raw abstracted groundwater	Saline water	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Lake Miranda Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 2 and 7	Operational conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.
Operation of Water storage dam with process water	Saline water with residual process chemicals and suspended solids.							
Operation of stormwater dam	Fresh to saline water with residual process chemicals and suspended solids.							
Pipelines for carrying saline water and processing liquids/slurries	Fresh to saline water with residual process chemicals and suspended solids.	Spill, leaks and overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Lake Miranda Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 2	Operational conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.
Operation – Category 5 – Vanguard in-pit TSF								
Deposition of tailings into in-pit TSF (Vanguard pit –	Tailings / return water	Spills or leaks from pipelines causing contamination of soil /	Native vegetation including Priority	Refer to Section 3.1	C = Moderate L = Possible	Y	Condition 2	Conditions imposed under W6724/2022/1 considered sufficient and transferred

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**				
Stage 1)		impacts to vegetation and surface water	1 PEC Lake Miranda		**Medium Risk**			to licence.
	Tailings / decant water	Overtopping In-pit TSF	Native vegetation including Priority 1 PEC Lake Miranda	Refer to Section 3.1	C = Moderate L = unlikely **Medium Risk**	Y	Condition 2, 7, 8 and 12	No additional controls required. Conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.
	Leachate	Seepage from base and walls of in-pit TSF causing groundwater mounding reaching root zone of vegetation /soil contamination. Changes in groundwater quality	Groundwater Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	Condition 2, 7, 8, 12 and 15	No additional controls required. Conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.
Operation – Category 6 – Dewatering discharge into pits								
Discharge of saline to hypersaline water (from dewatering of underground mine) within the Westralia Pit and Henderson pit.	Saline to hypersaline water	Seepage through the berm/pit wall, basin floor resulting in surface water runoff or infiltration to groundwater and increased groundwater salinity, mounding and adverse impacts to native vegetation health via root uptake	Native vegetation including Priority 1 PEC Lake Miranda fringing vegetation and ecosystem	Refer to Section 3.1	C = Moderate L = Likely **Medium Risk**	Y	Condition 2, 4, 7, 8, 12, 15 and 24: Condition 4 – installation of seepage interception trench Condition 12 – monitoring of seepage in the seepage collection sump collected from interception trench Condition 15 – addition of four new groundwater monitoring bores	The Delegated Officer considers the risk event of impacts to native vegetation to be 'likely' given the known seepage from the eastern wall and shallow groundwater levels east of the Pit. Given the difficulty in preventing this seepage from occurring, as it likely follows preferential pathways beneath the constructed berm wall, the Delegated Officer has specified the licence holder's interim and long-term controls to ensure the risk is mitigated to an

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**				
							east of Westralia Pit, to monitor SWL and TDS Condition 19 – Vegetation health monitoring east of Westralia Pit Condition 24 – Trigger action response plan to be prepared to detail contingencies for further groundwater mounding	acceptable level. This includes installation of an interception trench as the base of the Pit wall to prevent the seepage from being discharged beyond the immediate vicinity of the Pit, continued groundwater monitoring over an expanded bore network, vegetation health monitoring and development of a contingency or 'trigger action response' plan to manage future groundwater mounding east of the Westralia Pit. With the controls above in place, the Delegated Officer has also determined that the risk can be adequately managed without a limit on groundwater SWL and has removed this requirement at Bore MB01.
		Overtopping of berm wall and pits	Lake Miranda Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 2, 4, 7, 8, 12, 15 and 24	Conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.
		Spills or leaks from pipelines causing contamination of soil / impacts to vegetation	Lake Miranda Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	Y	Condition 2, 4, 7, 8, 12, 15 and 24	Conditions imposed under W6724/2022/1 considered sufficient and transferred to licence.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation - Category 70 - Screening and crushing plant								
Operation of screening and crushing plant at new location, including vehicle and machine movements. Lift-off from stockpiles of unprocessed and processed material.	Dust	Air/windborne pathway potentially causing ecosystem disturbance	Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	Condition 2 – Infrastructure requirements	The Delegated Officer has determined that the Applicant's proposed controls including usage of water cart at the premises for dust suppression is adequate to mitigate potential impacts from the dust emissions from crushing and screening operations. These controls are already conditioned within the licence.
Contaminated stormwater (from chemicals, sediment)	Sediment, fuel or chemical laden stormwater	Overland runoff from operational areas potentially causing impacts to native vegetation health and soil quality	Native vegetation including Priority 1 PEC	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Y	Condition 2 – Infrastructure requirements	The Delegated Officer has determined that the applicant's proposed stormwater controls for the crushing and screening plant are sufficient to prevent the potential contamination of surface water in the creek that flows to Lake Miranda. These controls are already conditioned within the licence.
Spills or leaks during refueling of mobile equipment and storage of fuel	Fuel/ hydrocarbons			Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 2 – Infrastructure requirements	

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

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

6. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6 Consultation

Consultation method	Comments received	Department response
Application 1		
The Tjiwarl Aboriginal Corporation was advised of proposed activities 08 May 2024	Comments received on 11 June 2024. The corporation requested that prior to any works, Golden Spur to furnish the corporation with a scope of works so it can be assessed whether a Heritage Survey will be necessary.	Noted by the Department. The applicant was copied in the response email.
Shire of Leonora, via email on 08 May 2024	No comments received.	N/A
Application 2		
Application advertised on the department's website on 6 July 2024	None received	N/A
Tjiwarl Aboriginal Corporation advised of proposal on 03 July 2024	None received	N/A
Licence Holder was provided with draft amendment on 20 September 2024	Refer to Appendix 1	Refer to Appendix 1

7. 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.

7.1 Summary of amendments

Table 7 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 7 Summary of licence amendments

Condition no.	Proposed amendments
Table on cover page	Category 5 added.
Licence history table	Details of this amendment added.
2, Table 1	Item number included. Operational requirement numbering updated.
2, Table 1	Item 8 to 14 added with operational requirements.
4 and 5	Two conditions removed.
6, Table 4	Proposed pipelines and Westralia Pit interception trench to be constructed and installed.
9, Table 5	Emissions from dewatering corrected, emissions from processing plant and in-pit TSF added.
10, Table 6	Emission and discharge limit added for in-pit TSF and corrected for Westralia Pit.
14, Table 7	Emission and discharge monitoring added for in-pit TSF, flow meter for Westralia Pit seepage recovery. Reference to Vanguard pit removed.
15	Condition from W6724 transferred to the licence.
18, Table 8	Monitoring requirements from W6724 transferred to the licence. Four existing groundwater monitoring bores added to monitoring program.
20	New vegetation monitoring condition added.
21 to 26	Conditions numbering corrected.
24, Table 10	Annual environmental report requirements updated. Interpretation of monitoring data and comparison with baseline data required.
27	New trigger response plan to manage seepage from Westralia Pit.
Figures	Figures 3 to 10 added to the licence. Figure 1 and 2 updated. Included new revised map for the additional location for category 70.

References

1. Bellevue Gold Project (BGP) 2024, Supporting document L9259/2020/1, amendment: crushing location, Perth, Western Australia.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, Guideline: Risk Assessments, Perth, Western Australia.
5. SRK Consulting 2024, *Technical Memorandum – Westralia Pit Groundwater and Surface Monitoring Data*.
6. REC 2024, *Technical Memorandum – WPBE Seepage – Reasoning and Recommendations*.

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

Condition	Summary of Licence Holder's comment	Department's response
2, table 1	The Licence Holder requested to remove tailings to not be left uncovered for more than 3 months and suggested for 18 months.	The delegated officer has accepted and made the requested change after expert consultation.
2, table 1	The Licence Holder requested to remove the note 3 Table 1, Vanguard monitoring bore is not mentioned in Table 1.	The delegated officer has accepted and made the requested change.
4 and 5 (old licence)	The Licence Holder requested to remove the Conditions 4 and 5 in the 21-day package regarding the infrastructure requirements – groundwater monitoring wells, the monitoring bores have been installed.	The delegated officer has accepted and made the requested change.
7, table 4	The Licence Holder requested to remove the carbon regeneration kiln stack, effluent heater stack and gold room furnace stack due to the low volumes of LPG and unlikely to produce significant emissions that would impact to the environment.	The delegated officer has accepted and made the requested change.
8, table 5	The Licence Holder requested the removal of row 3, Table 6, line referring to "Vanguard In-Pit TSF (Stage 1)" Freeboard Limit, or the inclusion of the Note 1 text from W6724/2022/1 which states "Note 1: After time limited operation of the TSF stage 2 is authorised under condition 10, the freeboard requirements for the In-Pit TSF (stage 1) no longer apply, as long as any overflow is diverted to within the TSF stage 2.	The delegated officer has included the note 1 text.
8, table 5	The Licence Holder responded to the clarification regarding the limit of Vanguard in-Pit TSF (Stage 1) as 473.35 mAHD.	The delegated officer considered the comments and updated the condition as required.
8, table 5	The Licence Holder responded to the clarification regarding the limit of Westralia Pit Freeboard limit as 477.15 mAHD.	The delegated officer considered the comments and updated the condition as required.
12, table 6	The Licence Holder requested to remove Weak acid Dissociable cyanide (WAD CN) in emissions and discharge monitoring requirements.	The delegated officer has accepted and made the requested change.
15 (old licence)	The Licence Holder requested to remove the Condition 15 in the 21-day package.	The delegated officer has accepted and made the requested change.
15, table 7	The Licence Holder responded to the clarification regarding the bore logs, construction logs and survey details for the WPBEMB02, WPBEMB03, WPBEMB04 and WPBEMB05	The delegated officer considered the submitted information. No changes to the bore details as drafted in the table is required.
15, table 7	The Licence Holder requested to add "MB05" in the note 1.	The delegated officer has made the requested change.
17, table 9	The Licence Holder responded to the clarification regarding the vegetation monitoring east of Westralia pit.	The delegated officer considered the comments and a new condition is added for the monthly vegetation monitoring. east of Westralia pit.