



## Application for Licence

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

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<b>Licence Number</b>	L3156/2025/1
<b>Applicant</b>	Aurenne Mining Pty Ltd
<b>ACN</b>	168 928 416
<b>EO file number</b>	APP-0029601
<b>Premises</b>	<p>Mt Ida Gold Project; Bottle Creek Premises</p> <p>Part of mining tenements: M 29/150, M 29/151, G 29/29, G 29/30, G 29/31, G 29/32, L 29/137, L 29/145, L 29/153, L 29/154</p> <p>As defined by the premises maps attached to the issued licence</p>
<b>Date of report</b>	19/05/2026 ( <b>FINAL</b> )
<b>Decision</b>	Licence granted

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## 1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the premises. As a result of this assessment, licence L3156/2025/1 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) 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 Assessment summary

On 15 September 2025, the applicant submitted an application for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act). A revised application was submitted to the department on 25 March 2026.

The application is to seek a licence relating to the operation of Category 5 carbon in pulp (CIP) circuit processing plan for the processing of gold bearing ore, with disposal of tailings into an integrated waste landform tailings storage facility (IWL/TSF), and the operation of a Category 64 landfill. at the premises. The premises is approximately 73 km north-west of Menzies, Western Australia.

The premises relates to the categories and assessed production / design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in licence L3156/2025/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in licence L3156/2025/1.

### 2.3 Applicant summary and overview of the premises

Aurenne Mining (Aurenne, or the applicant) is developing the Mt Ida Gold Project (the project) planned to be a 2.7 Mtpa gold mining operation using conventional carbon-in-leach technology. The project is centred around the Bottle Creek and Mt Ida project areas in the Eastern Goldfields, ~70 km north-west of Menzies, and 230 km north-northwest of Kalgoorlie with little existing infrastructure.

Gold at Bottle Creek was discovered in 1983 and mined by Norgold Ltd between 1988 and 1989 but was prematurely shutdown due to a pit wall failure, mill issues, and a declining gold price in 1990. The project produced 93,000 oz Au from two open pits (VB and Boags) in 18 months of operation.

Aurenne Mining's acquisition of the Project tenements occurred mid-2020 and has since consolidated additional tenements to develop a viable mining operation of mining and processing, the Mt Ida Gold Project.

The MIG Project comprises the following project areas:

- Bottle Creek consists of Emu, Southwark, Cascade, VB North, VB, Boags, Single Fin
- Mt Ida consists of Tims Find and Shepherds Bush
- Quinns consists of Forest Belle and Boudie Rat.

Aurenne has now progressed to Stage 3 of the Mt Ida Gold Project includes mining of Emu and  
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VB North pits, processing, and gold smelting with supporting infrastructure for a 24-hour operating workforce with an accommodation village and associated infrastructure.

The application for a licence (September 2025) included the operation of the Category 5 carbon in pulp (CIP) circuit processing plant, along with Category 7 vat or in-situ leaching of metal for the processing of gold bearing ore to gold ore bars, and the disposal of tailings into an integrated waste landform tailings storage facility, and operation of a Category 64 landfill as seen in Table 1.

A revised application was submitted on 25 March 2026, and included the following additional components:

- Increase in plant throughput capacity to 2.7 Mtpa.
- IWL/TSF embankment lifts Stages 6 to 8.
- Additional cyanide storage within the processing plant footprint. This replicates the existing storage and dosing infrastructure and is required given the increase in processing throughput.
- A new Reverse Osmosis plant within the existing processing plant footprint. The brine would be disposed of within the existing process water pond and reused within the processing plant.

**Table 1: Prescribed premises categories**

Prescribed premises category and description	Proposed or existing production or design capacity <sup>1</sup>	Proposed activities, processes, or operations, including any changes to existing operations (if amendment)
Category 5: Processing or beneficiation of metallic or non-metallic ore	Proposed: 2.7 Mtpa	Operation of gold bearing ore processing plant, deposition of tailings into an IWL/TSF and associated infrastructure.
Category 7 – Vat or in situ leaching of metal: premises on which metal is extracted from ore with a chemical solution	Proposed: 2.7 Mtpa	Leaching and adsorption circuit designed to leach gold and silver metal ions into solution through cyanide dissolution, with the resultant metals adsorbed onto activated carbon for mechanical recovery.
Category 64: Class II or III putrescible landfill site	Proposed: 360 m <sup>3</sup> per year	Constructed and operated according to the <i>Environmental Protection (Rural Landfill) Regulations 2002</i>

## 2.4 Category 5 processing plant (W6640/2022/1)

The Bottle Creek processing plant has been constructed on G 29/29 to the east of the Bottle Creek mining area and is oriented north-south, with the run of mine (ROM) pad and primary crusher pocket established on elevated terrain to the north.

The processing plant discharges tailing slurry to an IWL/TSF on G 29/30 to the north, and generally consists of:

- A ROM ore pad accepting delivery of ore by rigid mining trucks of nominal 100 tonne capacity which is stockpiled according to metallurgy and grade and reclaimed by front end loader.
- a single stage crushing circuit with a surge bin, which bypasses excess feed to a crushed ore stockpile for front end loader reclaim.
- a SAG mill with provision for a future pebble crushing circuit.
- mill discharge pumps to a cyclone cluster for classification with underflow able to be

split to the SAG mill or to a Ball mill and overflow passing through trash screen.

- thickening of leach feed before reporting to a carbo in pulp (CIP) circuit consisting of seven mechanically agitated CIP tanks with intertank screens.
- loaded carbon removal from the adsorption circuit by passing slurry over a screen and the carbon acid washed and transferred to an elution column.
- a pressure Zadra-process elution circuit including a carbon regeneration kiln, electrowinning cells, goldroom and goldroom furnace.
- chemical reagent storage (quicklime, sodium cyanide, hydrochloric acid, sodium hydroxide, carbon).
- tailings pumps and piping to the IWL/TSF.

The Bottle Creek Processing Plant is designed for a nominal ore throughput of 2.7 Mtpa configured based on successful commissioning, new mineral reserves and resources and the metallurgical test results (Figure 1 and Figure 2).

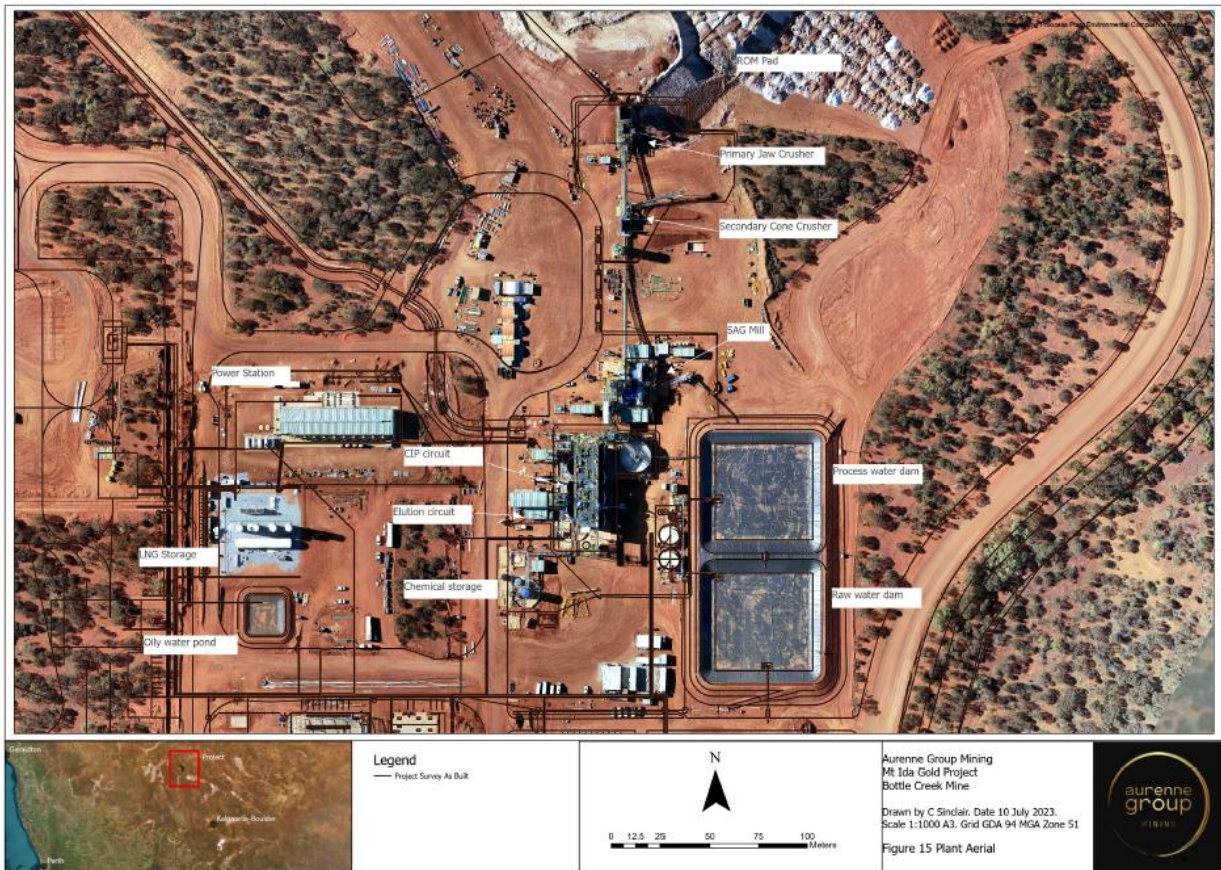
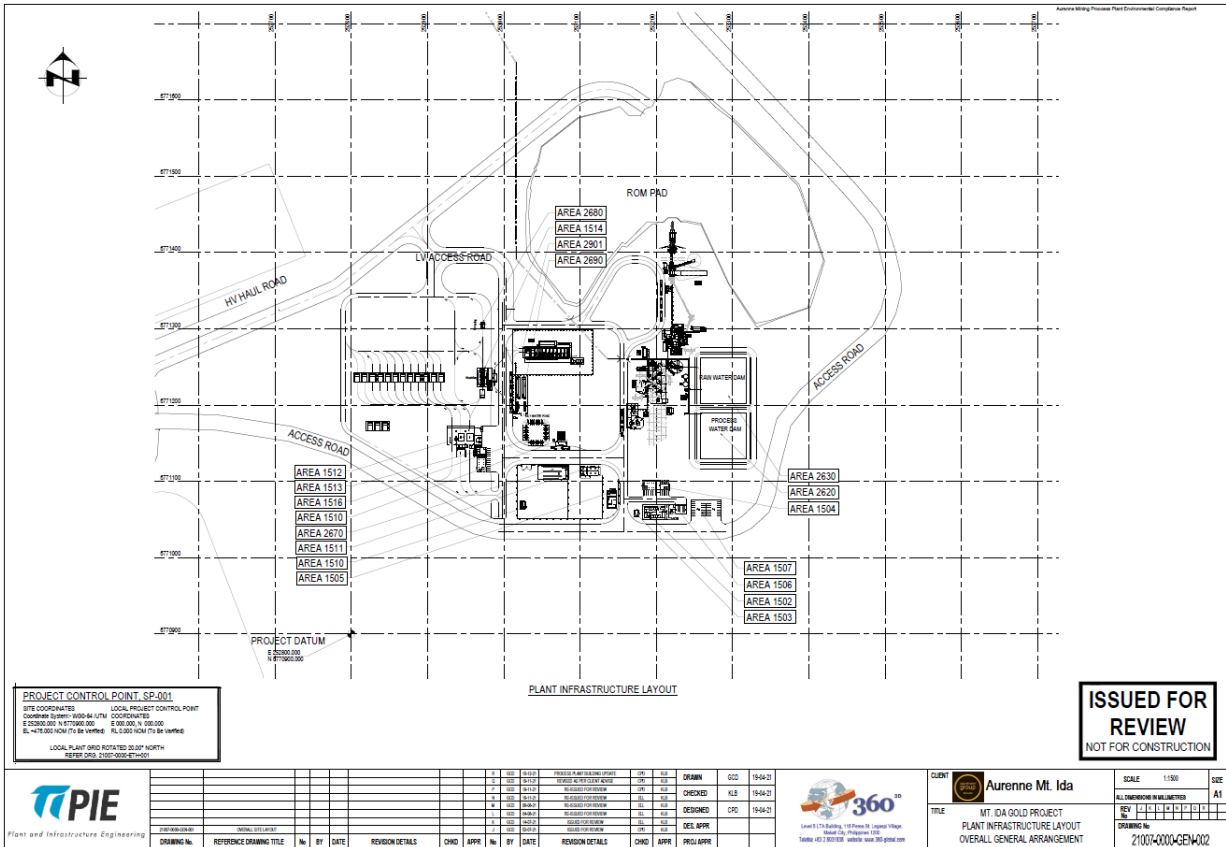


Figure 1: Bottle Creek Mine plant layout



**Figure 2: Processing plant layout**

Compliance reports for the processing plant (along with process water and raw water ponds) were received by the department in June 2023 and following a request for further information were found to be compliant. The commissioning report for the gold processing plant and IWL/TSF was submitted to the department on 10 October 2024 and deemed compliant with works approval conditions on 16 October 2024.

The amount of ore processed and tailings produced since commencement of operations in 2023 (time limited operations under a works approval) is detailed below in Table 2.

**Table 2: Ore processed and tailings production parameters**

Year	Ore production (tonnes)	Tailings solids to TSF (tonnes)	Cumulative tailings solids to TSF (tonnes)	Avg. slurry density (%)	Est. water amount (tonnes)	Est. slurry weight (tonnes)
2023 – 2024	1,206,685	776,179	776,179	45	947,526	1,723,705
2024 - 2025	1,690,000	1,572,031	1,572,031	48.5	1,712,135	3,284,166
2025 – ongoing	2,146,200	1,095,591	1,095,591	43.8	1,401,553	2,497,144

**2.4.1 Process water and raw water pond**

Water is provided to the processing plant via the process water pond which is designed to hold 5,000 m<sup>3</sup> of process water and is constructed from engineered compacted earthen walls and lined with 2 mm HDPE (Figure 3)

The process water pond receives pumped decant return water from the IWL/TSF, overflow from the raw water pond and valved gravity fed supernatant water from the pre leach thickener





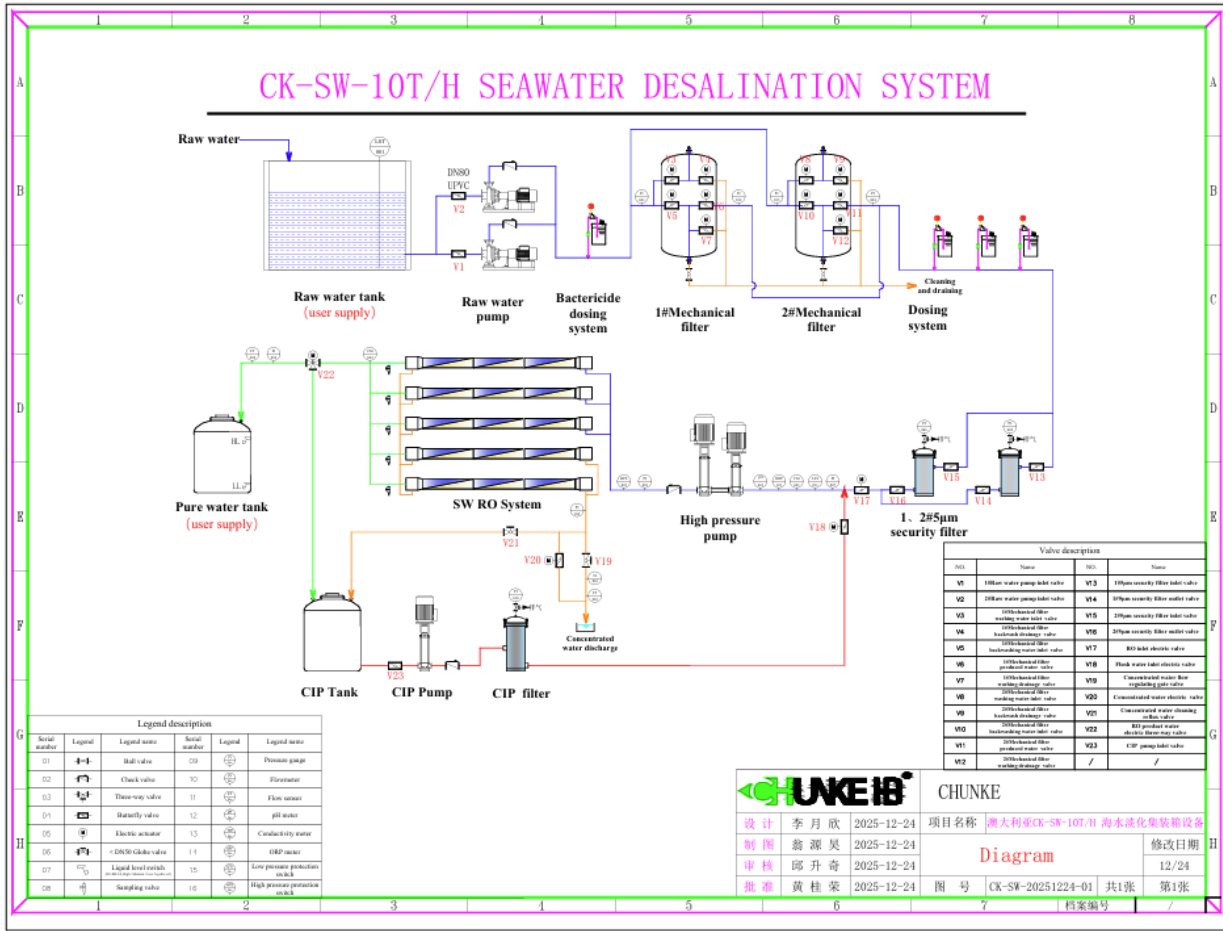


Figure 5: Reverse osmosis plant process flow diagram

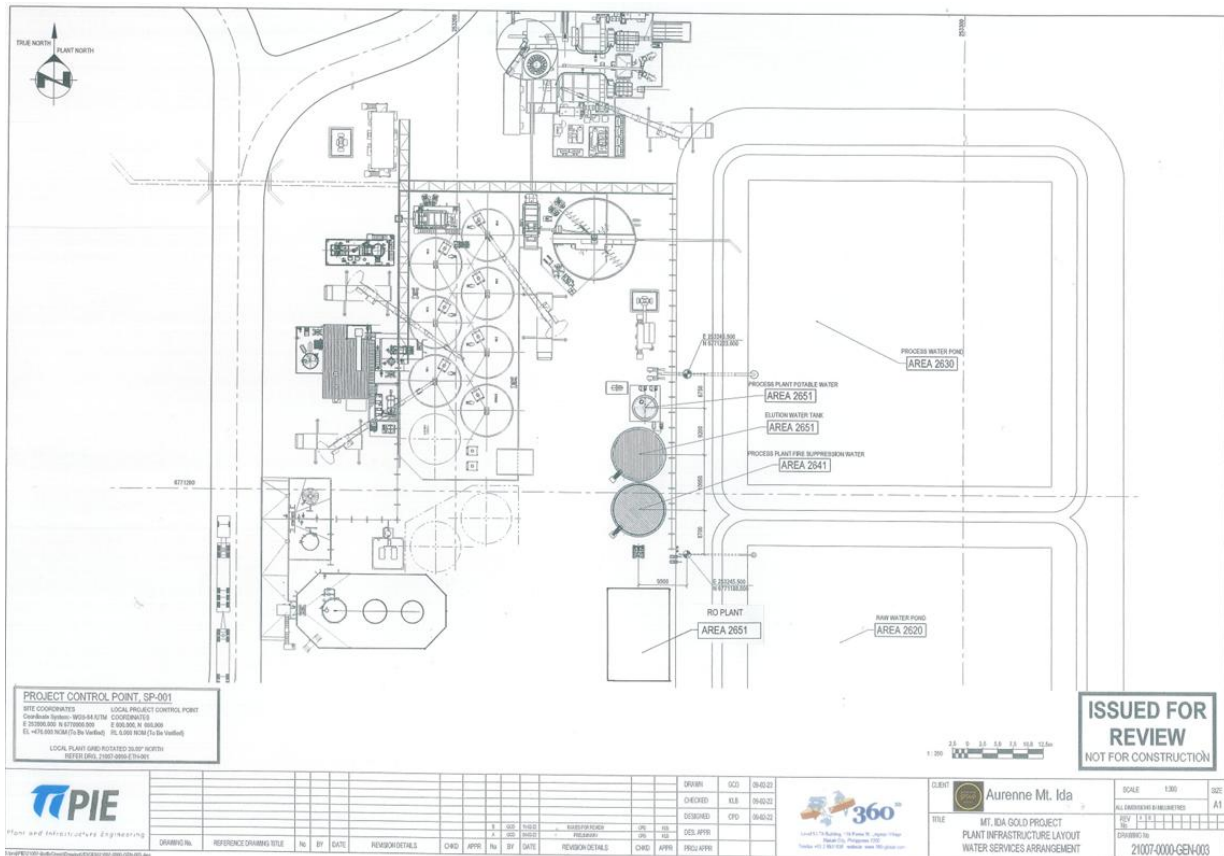


Figure 6: RO plant location within existing processing plant footprint

## 2.6 Category 5 IWL/TSF (W6899/2024/1)

### 2.6.1 Design overview

The integrated waste landform incorporates a tailings storage facility (IWL/TSF) as designed by CMW Geosciences (2021) with Environmental Compliance and Environmental Commissioning Reports submitted to the department in 2023 and 2024.

The design of the IWL/TSF is based on the Australian National Committee on Large Dams Incorporated (ANCOLD) Guidelines (2019) Guidelines on Tailings Dams – Planning, Design, Construction, Operation and Closure.

Tailings characteristics have been tested by the applicant on slurried samples and geochemical assay and the resultant analyses show the material to be non-acid forming (NAF) with a pH range of 7.9 - 8.2.

The applicant states that the cyanide CIP circuit will involve addition of liming agent to keep the pH high to prevent production of hydrogen sulphide (H<sub>2</sub>S) gas, which will buffer the tailings material to maintain relatively low acid producing potential during operations.

The current IWL/TSF has been constructed on G 29/29 to the north of the processing plant (G 29/30) and has been designed with a recalculated storage volume (accounting for stage 6 to 8 lifts as proposed in this licence application assessment) of 7.65 Mt over a 5-year life to June 2027 assuming a minimum tailings in-situ density of 1.5 t/m<sup>3</sup> (dry) and a beach slope of 1%.

The IWL disturbance area is ~49 ha

### 2.6.2 Embankment design and geometry

The starter embankment TSF, up to Stage 5 lift have been within a single cell, circular facility, constructed within a waste dump and designed to store ~6 Mt of tailings. The maximum starter embankment height (up to Stage 5) is 28 m. A typical cross-section is shown in Figure 7.

The IWL/TSF has design slopes of 1(V):2(H) upstream and 1(V):3(H) downstream, with a minimum crest width of 13 m (upstream and downstream zones). The compacted upstream zone (clayey material) has a minimum width of 5 m including the crest of the embankment.

Mining vehicles used to carry out construction and maintenance were and will be selected to suit dimensions. The upstream embankment crest has a 2% cross-fall towards the upstream side, 0.5 m high mine waste safety bund (windrow) at the downstream crest, and above ground tailings pipeline at the upstream crest.

The decant causeway has design slopes of 1:1.5 (V: H) and a nominal 6 m crest width. The crest of the decant causeway has a 0.5 m minimum high windrows on both sides of the accessway. Breaks in the windrow on the low side will allow surface water to run off.

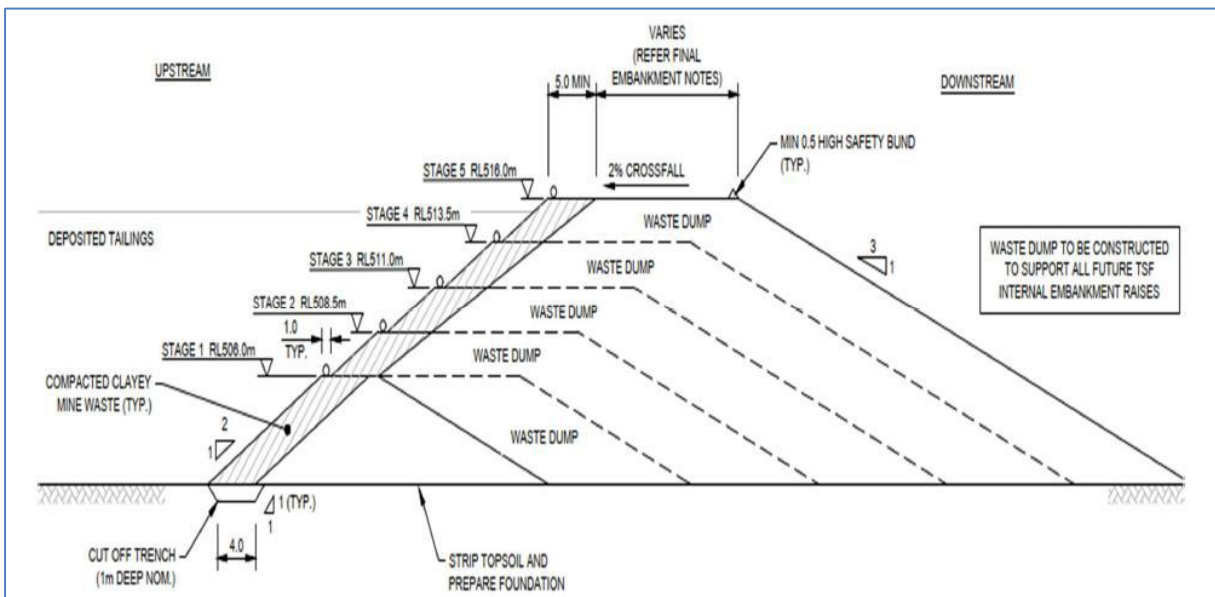


Figure 7: IWL/TSF design cross-section

### 2.6.3 Structure properties

The IWL/TSF embankments are constructed out of waste sourced from mining operations. The perimeter embankment is zoned with an upstream zone of clay mine waste materials and a downstream zone of mine waste. The clayey mine waste material used in the upstream zone is predominantly clayey gravels and clayey saprolite materials below the laterite / hardpan zones within the pit(s).

Visual assessment of the pit walls by the applicant and consultants indicated that these materials are somewhat resistant to erosion and are nondispersive.

The clayey materials and mine waste were respectively classified as clayey gravel and well graded mine waste (sandy gravel with cobbles, minor fines) and are considered unlikely to liquefy from dynamic loadings or seismic activities. To reduced embankment permeability, the upstream zone clayey material has a minimum fines content of 20%. Laboratory tests to determine strength parameters inferred a dense consistency of the clay materials, and mine waste when compacted.

#### 2.6.4 Decant structure

Surface water is removed from the IWL/TSF by a pontoon mounted decant pump located within a rock-ring type central decant structure. Return water is pumped directly to the process plant for reuse. Pipeline location is shown in general arrangement (Figure 8). Pipelines are constructed from HDPE and placed in an unlined trench and within a pipe-type culvert as it passes under the site access road as it approaches the processing plant.

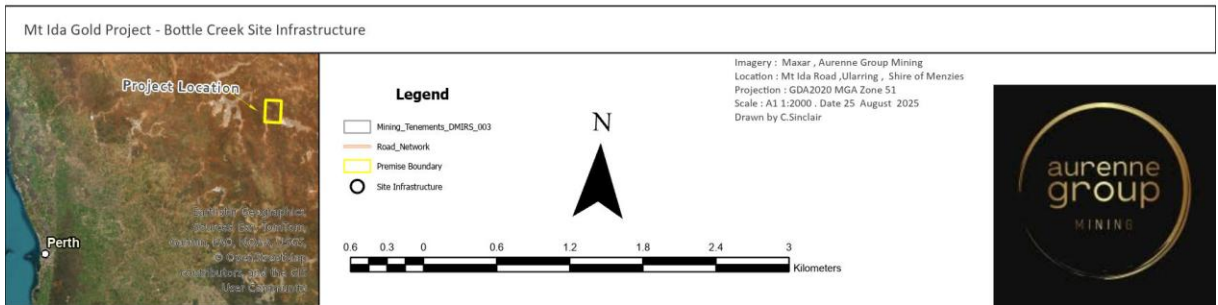
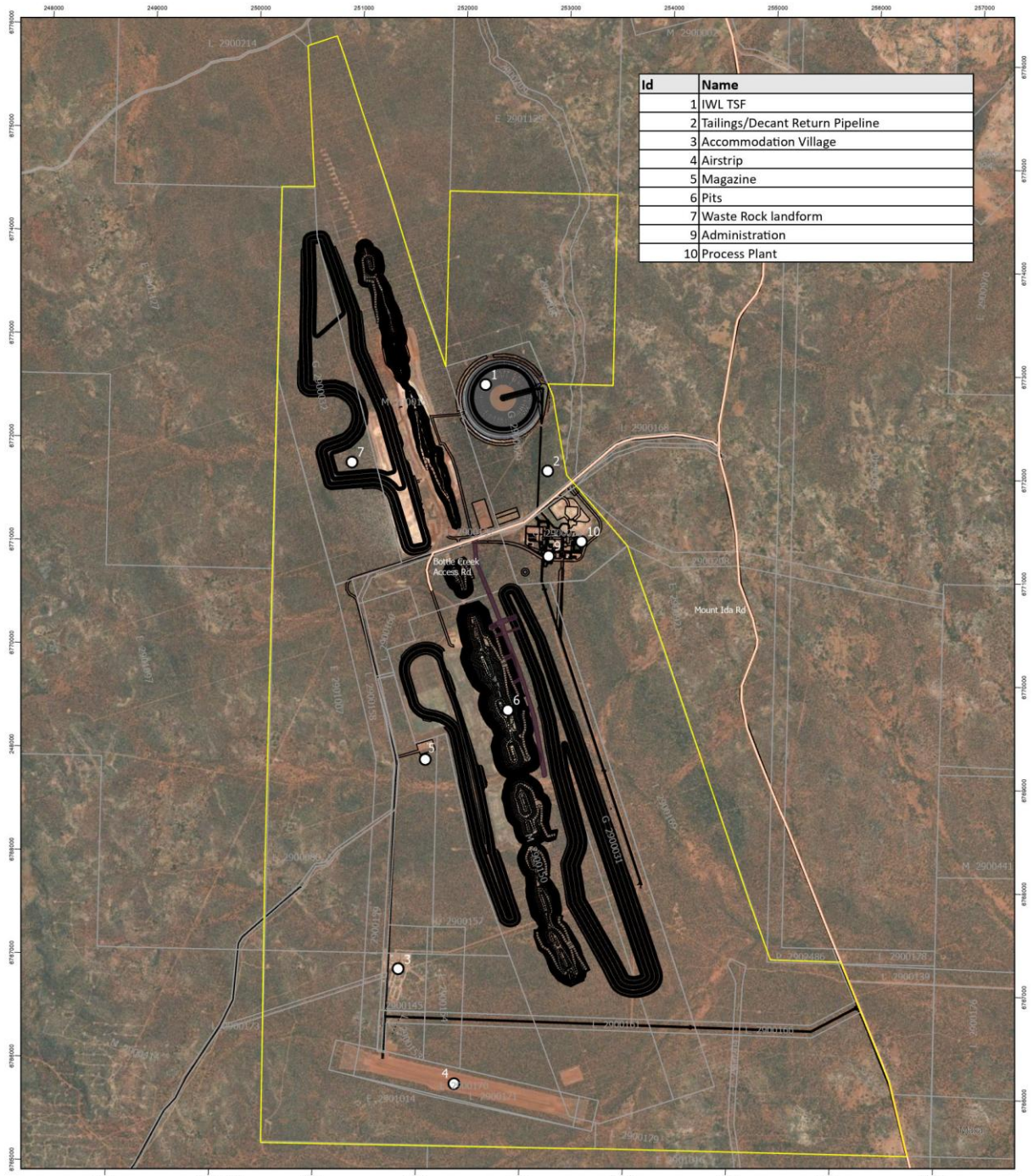


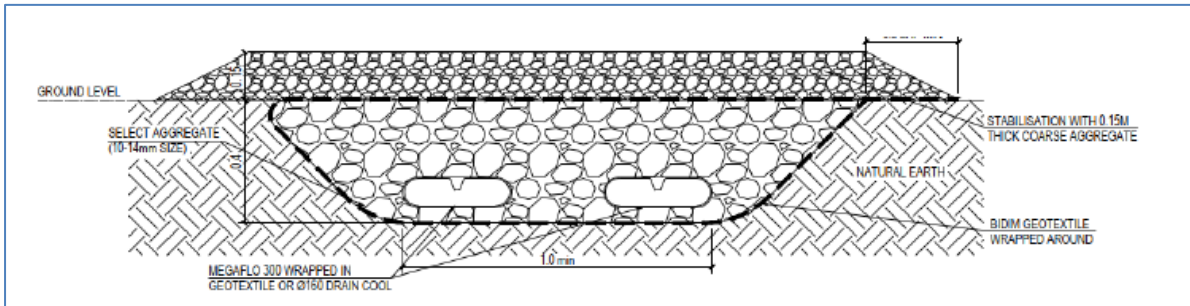
Figure 8: Mt Ida Gold Project – Bottle Creek site infrastructure

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### 2.6.5 Underdrainage

The underdrainage leachate collection lines comprise of two parallel lines of Megaflo 300 wrapped in geotextile or 160 mm Draincoil. These are covered by 10-14 mm size select aggregate wrapped in Bidim A34 geotextile and stabilised using 0.15 m thick coarse aggregate. The aggregates and geotextile provide a filter around the underdrainage pipework. The stabilisation rock provides protection against erosion (Figure 9).

The underdrainage leachate collection is constructed at a 5 m nominal distance from the upstream toe of the IWL embankment. At the underdrainage collection sump, a bore pump with minimum 3 L/s design capacity is installed.



**Figure 9: Underdrainage design**

### 2.6.6 Monitoring

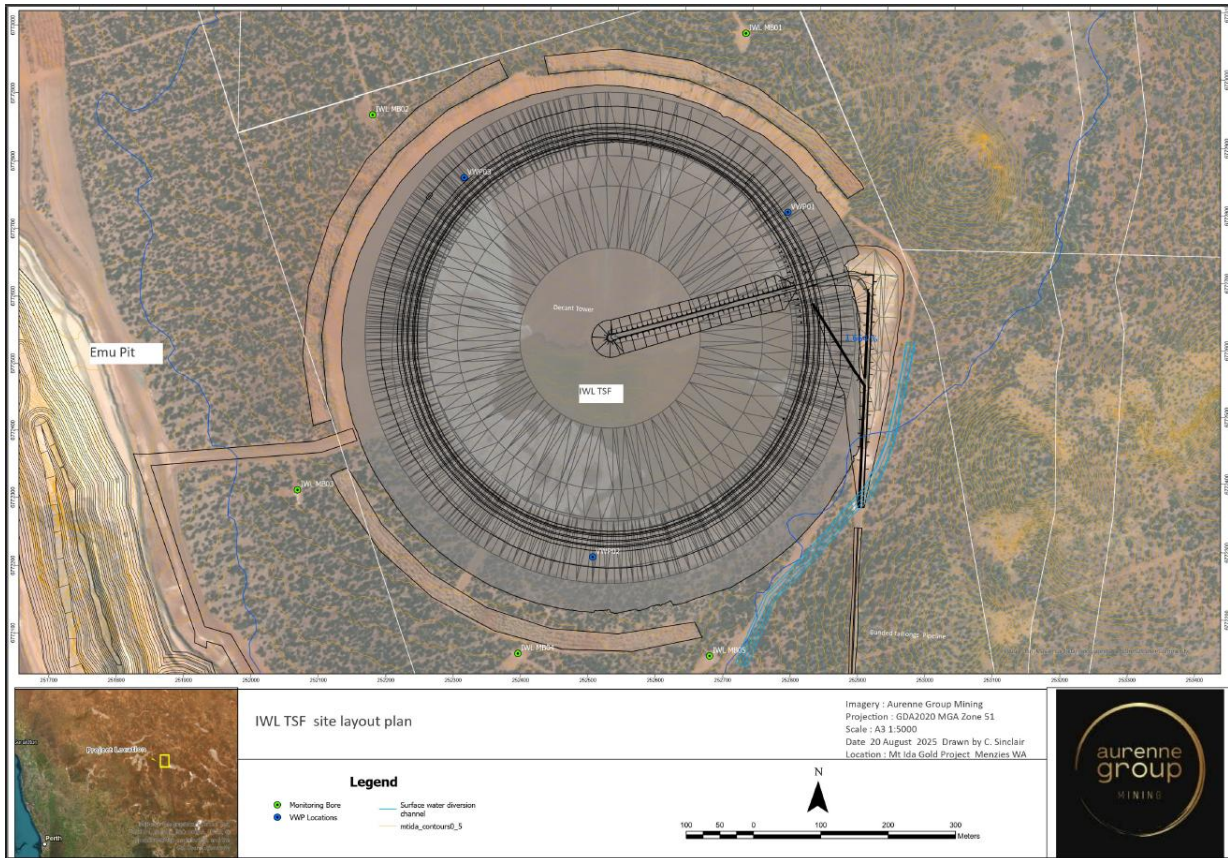
The TSF has 5 monitoring bores installed around the facility and 3 piezometers installed in the embankment (Figure 10).

The network of groundwater monitoring bores around the perimeter of the IWL/TSF were installed in accordance with ASTM D5092/D5092M-16, and monitor groundwater levels and groundwater quality, particularly in downgradient locations.

Monitoring parameters and frequency will be implemented in accordance with the conditions of the applicable licence. Routine monitoring data will be reviewed to identify any trends in groundwater levels or quality that may indicate seepage or changes in groundwater conditions.

The applicant does not anticipate groundwater recovery due to the recovery and reuse of decant water from the IWL/TSF. However, should monitoring indicate sustained groundwater level increases or changes attributable to IWL/TSF operations, a groundwater recovery or management response will be developed as required.

In addition to groundwater monitoring, daily inspections of the IWL facility, embankments and pipelines will be undertaken during construction and operation. Water sampling will be conducted in accordance with standard QA/QC procedures and analysed by NATA accredited laboratories.



**Figure 10: IWL/TSF monitoring bores and VWP locations**

### 2.6.7 Tailing delivery and return water pipelines

The IWL/TSF incorporates a system for delivering tailings slurry and returning reclaimed water to the processing plant.

The tailings and decant return water pipelines run in a direct line north from the Bottle Creek Processing Plant to the IWL TSF. The pipelines are situated on the upstream crest of the embankment.

The pipelines are constructed from HDPE (polyethylene) and meet Australian Standards AS/NZS 2033, 4129, 4130, and 4131. Specifically, the pipes used are 315 SDR17 PN10 PE100 and 160 SDR17 PN10 PE100.

The original rock-ring decant structure was replaced with a central concrete decant tower surrounded by rock and geotextile. This design allows for the use of a submersible pump on a winch for safer maintenance. Reclaimed water is pumped directly back to the process plant for reuse.

The supernatant pond is to be kept within and around the central decant structure and away from the perimeter embankments. The decant pond size must remain equal to or less than 25% of the tailings surface area

Several management and monitoring systems have been implemented to ensure the safe operation of the pipelines.

- Trenches and Diversion Bunds:** The tailings and decant return pipelines are located within bunding to contain any potential spills or leaks. The bund is 1,349 m long with a total capacity of 3,235 kl. This capacity is sufficient to contain potential spills between the six-hourly inspections.

- **Flow Meters:** Emerson magnetic flow meters are fitted on both the tailings and decant return pipelines to record flow rate and pressure. These are installed at each end of the pipelines.
- **Telemetry / Process Monitoring:** A supervisory control and data acquisition (SCADA) system (FactoryTalk) analyses real-time data from the flow meters. This information is displayed in the plant control room, which is manned 24/7, allowing for quick identification of variations in flow pressure.
- **Leak Detection / Monitoring System:** The telemetry system is set to trigger an operator alarm and automatically shut off the pumping systems if flow rates vary by more than 5% for 10 minutes or more than 10% for two minutes. The system also initiates an alarm when pressure drops.
- **Shut-off Valves:** The system includes automatic shut-off capabilities linked to the telemetry monitoring.
- **Inspections Schedule:** Visual inspections of the IWL/TSF, including the pipelines, are conducted every six to twelve hours by Aurene process plant staff to ensure operational integrity.
- **Deposition Strategy:** Tailings are discharged cyclically from multiple spigots on the upstream perimeter embankment crest in thin layers (not exceeding 300 mm) to promote drying (Figure 11).

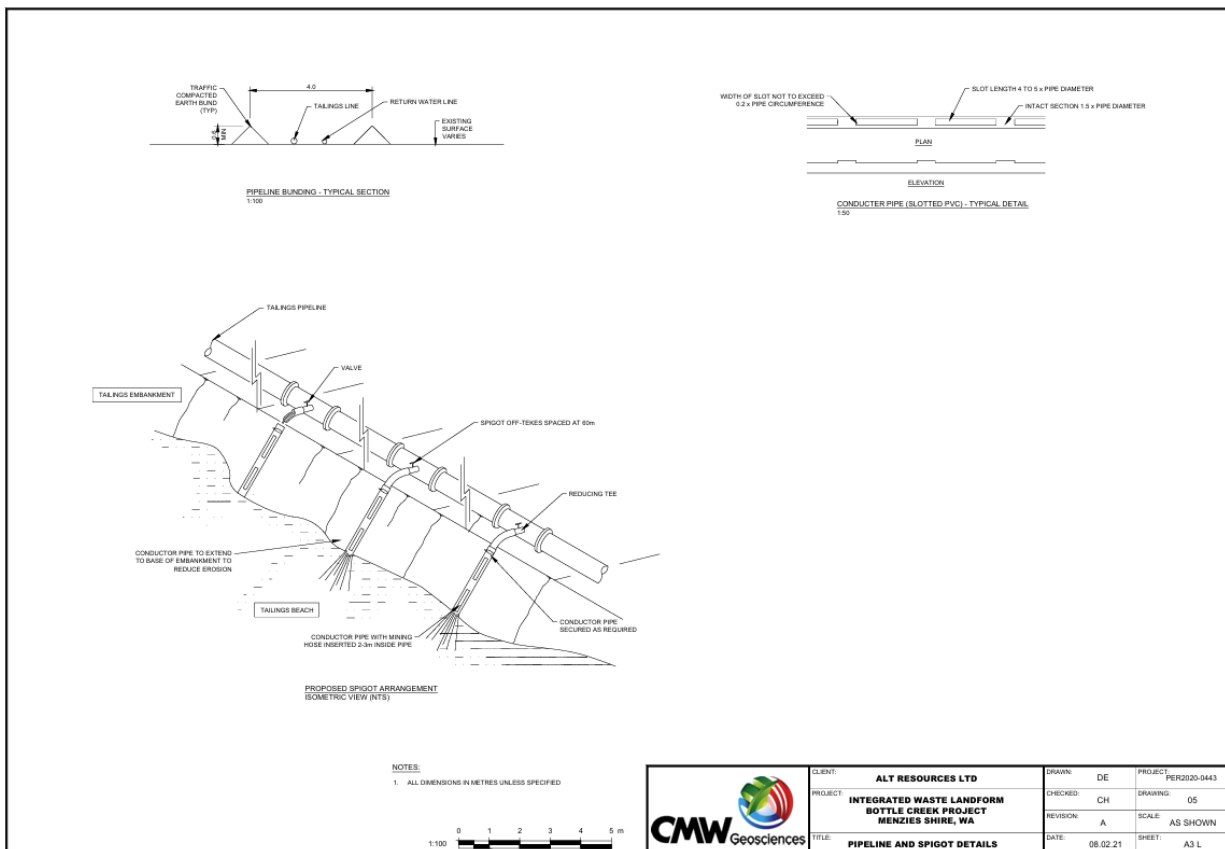


Figure 11: Pipeline and TSF spigot details

## 2.7 Proposed TSF raise stages 6 to 8

In the revised licence application submission (March 2026) the applicant seeks approval for the construction of three additional raises to the existing IWL/TSF (Stages 6 - 8), and for amendment Licence L3156/2025/1

of the prescribed premises boundary to incorporate the expanded TSF footprint, associated infrastructure, and other prescribed activities relevant to the project.

The applicant seeks to commence construction of the following TSF raises:

- **IWL/TSF Stage 6:** raise from 510 mRL to 513 mRL.
- **IWL/TSF Stage 7:** raise from 513 mRL to 516 mRL.
- **IWL/TSF Stage 8:** raise from 516 mRL to 520 mRL.

The original design of the IWL/TSF Stages 1 – 5 was informed by CMW Geosciences (2021). CMW Geosciences has subsequently prepared a revised engineering design and construction specification for IWL TSF Stages 6 – 8, which forms the design basis for the works proposed under this application. Timing of the planned embankment raises is summarised in Table 3.

**Table 3: IWL/TSF embankment raises 6 to 8 schedule**

Component	Construction commencement	Construction complete	Height
Lift 6	June 2026	August 2026	513 mRL
Lift 7	August 2026	November 2026	516 mRL
Lift 8	November 2026	June 2027	520 mRL

### 2.7.1 TSF stages 6 – 8 design

The IWL TSF Stages 6–8 will be constructed as an extension of the existing facility on G29/29 and L 29/151, increasing the crest elevation from RL 510 m to RL 520 m over subsequent lifts between June and November 2026 with three additional raises comprising lifts of 3 m, 3 m, and 4 m in height to achieve a final crest level of RL 520 m AHD

The raises provide approximately 3.4 Mm<sup>3</sup> of additional storage capacity, supporting continued operation under approved processing scenarios. The IWL TSF Stage 6 - 8 will increase the disturbance area by approximately 12 ha.

### 2.7.2 TSF stage 6 – 8 embankment geometry

The IWL TSF embankment has design slopes of 1(V):2(H) upstream and 1(V):3(H) downstream, with a minimum crest width of 13 m (upstream and downstream zones). The compacted upstream zone (clay) will have a minimum width of 5 m including the crest of the embankment (Figure 12). Mining vehicles used to carry out construction and maintenance shall be selected to suit dimensions.

The upstream embankment crest will have a 2% cross fall towards the upstream side, 0.5 m (minimum) high mine waste safety bund (windrow) at the downstream crest, and above ground tailings pipeline at the upstream crest.

The decant causeway has design slopes of 1:1.5 (V: H) and a nominal 6 m crest width. The crest of the decant causeway will have 0.5 m minimum high windrows on both sides of the accessway. Breaks in the windrow on the low side will allow surface water to run off.

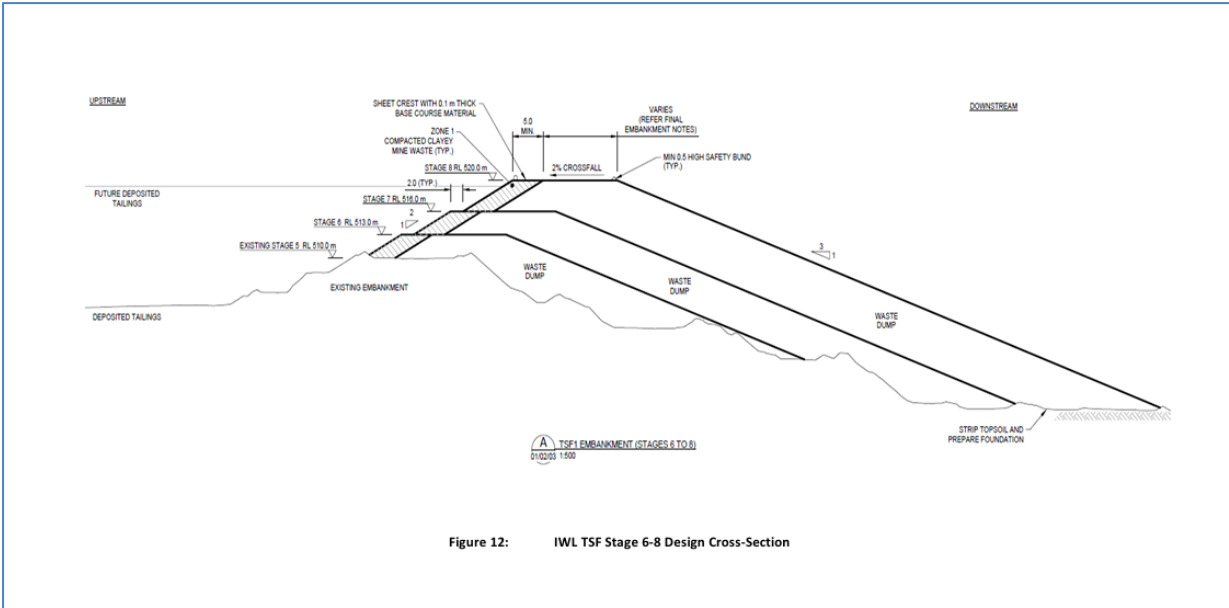


Figure 12: IWL TSF Stage 6-8 Design Cross-Section

**Figure 12: IWL/TSF Stage 6 -8 design cross section**

### 2.7.3 Water recovery system

Water will be recovered via a central decant system with a minimum recovery capacity of 4,932 m<sup>3</sup>/day (206 m<sup>3</sup>/hour) and returned directly to the process plant.

The Stage 6 – 8 of the IWL/TSF has been designed to maintain a minimum total freeboard of 0.7 m, comprising operational freeboard (300 mm), beach freeboard (200 mm), and storm storage allowance for the 1 in 100-year AEP, 72-hour rainfall event, consistent with ANCOLD (2019) requirements for a High C consequence category facility (refer to section 2.7.4).

Return water will be pumped directly to the process plant for reuse. From time to time, surface water will be removed from IWL/TSF by a pontoon mounted decant pumps to assist the central decant tower pump. Pipelines are/will be constructed from HDPE and placed in an unlined trench and within a pipe type culvert as it passes under the site access road as it approaches the processing plant.

### 2.7.4 Freeboard assessment

The IWL/TSF has been designed to temporarily store runoff from a 1 in 100-year annual exceedance probability (AEP), 72-hour storm event on the surface of the facility, consistent with ANCOLD (2019) guidance for a High C consequence category facility.

The IWL/TSF provides a minimum total freeboard of 0.7 m, comprising:

- Operational freeboard: 300 mm (vertical separation between the tailings beach and embankment crest).
- Beach freeboard: 200 mm.
- Storm storage allowance: equivalent to the 1 in 100-year AEP, 72-hour rainfall depth of 228 mm. Site specific Intensity–Frequency–Duration (IFD) data from the applicant indicate that a 1 in 100-year AEP, 72-hour storm event would generate a rainfall depth of approximately 228 mm.

Assuming a conservative runoff coefficient of 1.0 over the IWL catchment area (approximately 36 ha), this equates to a stormwater volume of approximately 82,000 m<sup>3</sup>.

ANCOLD (2019) also recommends consideration of wave run-up associated with a 1 in 10-year

AEP wind event for facilities with a High C consequence category.

For the IWL/TSF, perimeter tailings deposition and an anticipated beach slope of approximately 1% provide separation between the supernatant pond and the embankment, such that wave run-up is not expected to reach the embankment under normal operating conditions.

At full supply level, the available freeboard provides an additional storage capacity of approximately 300,000 m<sup>3</sup>, which exceeds the estimated storage volume associated with the probable maximum precipitation (PMP) event (approximately 231,000 m<sup>3</sup>).

### 2.7.5 Tailings physical properties

Tailings physical properties adopted for the design of IWL/TSF Stages 6 – 8 are based on laboratory testing and geotechnical assessment undertaken by Western Geotechnical Laboratory Services and incorporated into the design by CMW Geosciences.

The design assumes an average tailings slurry density of approximately 60% solids by weight, reflecting the proposed installation of additional thickening infrastructure within the processing plant (separate works approval W3162/2025/1, issued 20 April 2026). The engineering properties of the tailings adopted for the IWL/TSF Stages 6 - 8 are summarised in Table 4.

The increased slurry density represents an improvement on the previously deposited tailings density (approximately 45% solids) and is expected to reduce the volume of slurry discharged to the TSF, improve tailings beach development, enhance water recovery, and increase overall storage efficiency.

**Table 4: Tailings physical characteristics**

Property	Physical Properties
Soil Particle Density	2.7 t/m <sup>3</sup>
Average Slurry Density	60% solids w/w
Tailings Density	Dry density range 1.50 t/m <sup>3</sup> to 1.6 t/m <sup>3</sup>
Moisture Content	25%
Particle Size Distribution	Tailings classified as non-plastic silt with sand with 92% fines (i.e. material passing a 75-micron sieve)
Cohesion	0 kPa
Friction Angle	33°
Hydraulic Conductivity	1 x 10 <sup>-7</sup> m/s

### 2.7.6 Tailings chemical properties

Tailings discharged to IWL/TSF Stages 1 – 5 were characterised by Graeme Campbell and Associates (2021). The tailings were classified as Non-Acid Forming (NAF), with very low sulphide sulphur content and mildly alkaline, hypersaline tailings water.

Cyanide management within the CIP circuit includes lime addition to maintain elevated pH, further reducing any potential for acid generation. Metallurgical testwork and mine scheduling have identified that future processing will include varying proportions of oxide, transitional and sulphide ores.

Tailings slurry samples representative of these blends were geochemically characterised by

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Pendragon. The assessment concluded that:

- Tailings generated from oxide–sulphide blends are non-acid forming to potentially acid forming with low sulphur content.
- Any acid generation potential is effectively mitigated by the high alkalinity of the process water and lime addition within the CIP circuit.
- Leachate chemistry is dominated by salinity rather than acidity, with metals present in stable geochemical forms.

These findings have been incorporated into the design and operational assumptions for IWL/TSF Stages 6 – 8 and confirm the suitability of the facility for the proposed tailings streams.

## 2.8 Category 7 Vat leaching of metal (W6640/2022/1)

The leaching and adsorption circuit is designed to leach the contained gold and silver metal ions into solution through cyanide dissolution, with the resultant metals adsorbed onto activated carbon for mechanical recovery (Figure 13, and Figure 14).

The Mt Ida leach circuit is a hybrid carbon in pulp (CIP) circuit comprised of one leach tank and six adsorption tanks of equal size 890 m<sup>3</sup> capacity. The residence time is 26 hours.

After being raised to a pulp density of 55% solids in the pre-leach thickener, pulp is transferred to a leach feed box via the thickener underflow pumps where cyanide dosing occurs. The leach feed box also receives goldroom spillage from the gold room sump pump, elution area spillage from the elution area sump pump and barren eluate.

Cyanide dosed pulp is then introduced to the leach tank where precious metals dissolution occurs. The circuit operates as a counter current flow circuit, with slurry flowing from tank one to tank seven, progressively contacting activated carbon, which is transferred counter currently via intertank screens and pumps from tank seven to tank one.

Loaded carbon is recovered from Tank 2, the first adsorption tank, and screened to recover the carbon, which is then transferred to the elution circuit. Regenerated and fresh carbon is pumped into the circuit at Tank 7. The leached barren slurry from Tank 7 is pumped to the tailings hopper after passing through the carbon safety screen.

The CIP area is a concrete floored and bunded facility with a bund capacity of 110% of the largest CIP tank. The bunded area has design provision for two sumps which are cleared by electric submersible sump pumps, returning material to adsorption tank 2 or 7. All losses from the CIP circuit are therefore contained within the CIP area. The CIP bunded area, sumps and pumps are subject to routine shift inspection for spillage and sump clearance. Spillage is routinely hosed into sumps to minimise metal losses.

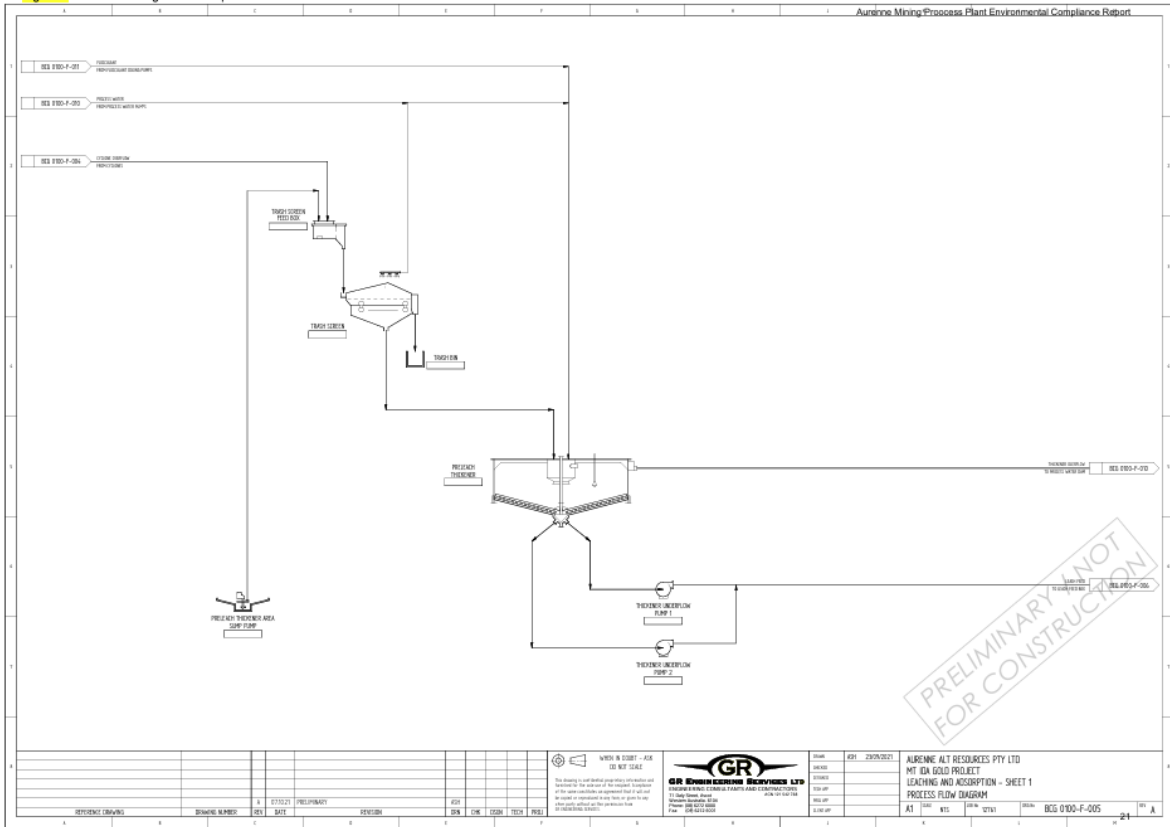


Figure 13: Leaching and absorption circuit (part 1)

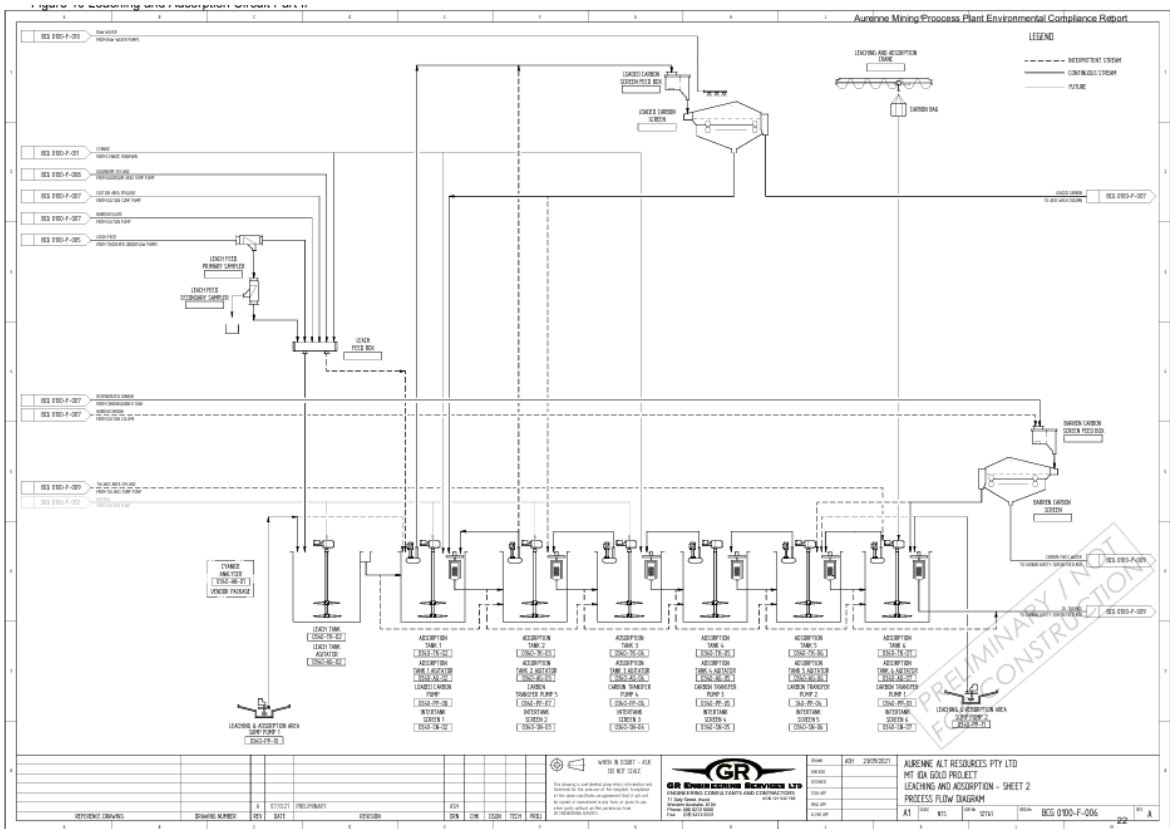


Figure 14: Leaching and absorption circuit (part 2)

### 2.8.1 Elution circuit with gold and silver recovery to dore

The recovered carbon is screened with the under flowing slurry returning to CIP Tank 1. The carbon is stored in a hopper until 6 tonnes is collected, when it is discharged into an acid wash column, where a weak 3% HCL acid solution is used to clean the pores of the activated carbon prior to the elution stage. The used acidic solution reports to the tails hopper.

Approximately 900 m<sup>3</sup> of hydrochloric acid is used per elution strip in the acid wash.

Cleaned carbon is transferred to the elution column. In a separate elution tank, the eluate is mixed consisting of fresh water, barren eluate, sodium hydroxide (to raise the pH) and cyanide (to put the gold back into solution).

This mixture is pumped through the through heat exchangers and the elution column, heated by the LNG fired elution heater so that the liquid is brought up to a temperature of 90 degrees. Once this temperature is reached, the liquid is also circulated through the electro-winning cells, which plate the gold on to the cathode plates. This cycle is continued until the eluate solution is devoid of gold. The barren eluate is pumped to the eluate tank to be used as makeup. The carbon is transferred to the regeneration kiln feed hopper, and slowly brought up to a temperature to drive off any fluid or impurities on the carbon before being discharged into a quenching tank. The regenerated carbon is then sent back to the CIP circuit via a drainage screen to CIP tank seven.

Sulphonic acid is used occasionally in this circuit to clean the pipes and heat exchangers. This area has a sump pump which pumps any spillage back to the CIP leach feed distribution box.

### 2.8.2 Electrowinning and gold room

Material plated onto the cathodes on the electro-winning cells is cleaned off the cathode plates and flows to a settling cone. The material from the settling cone is removed from the bottom of the cone and dried in a drying oven to remove moisture.

The dried material is then placed in the furnace with measured amounts of flux materials – silica, soda ash, borax, and sodium nitrate. The furnace is then heated to approximately 1,200 degrees. As the gold and silver bearing material melts, the fluxes aid the separation of the heavier gold from the other material by improving the viscosity of the melt and assisting in purifying this.

Once the molten separation has had time to occur, the furnace is tilted into the ingot moulds, which are filled by the slag material on the top of the furnace, and the gold at the bottom. The slag material, once cooled, is returned to the grinding mill so any remnant gold can be recovered. This area has a sump pump which returns any spillage or wash down to the CIP leach feed distribution box, after passing through a gold trap for security reasons.

### 2.8.3 Reagent use and management

Reagent mixing and distribution process flow is shown in Figure 16 and reagents and chemicals commonly used in the processing plant are:

**Quicklime** (80% calcium oxide) is used to modify ore pH and is stored in a 100-tonne steel silo adjacent to the mill feed conveyor. The quicklime is delivered by road tanker and loaded pneumatically to the silo every 5 days approximately. The quicklime silo has a filter on top (baghouse) to relieve air introduced into the silo during filling and ensure no quicklime escapes to the atmosphere. The system bottom feeds the CaO to the ore on the mill feed conveyor via a mixing arrangement.

**Cyanide** (sodium cyanide) will be delivered by truck in liquid form as 29% CN by 16 m<sup>3</sup> isotainer and transferred to a 140 m<sup>3</sup> holding tank. Cyanide solution is pumped as required to the leach circuit using a variable speed pump via stainless steel piping specifically designed for cyanide

distribution and containment. The cyanide storage tank of 140 m<sup>3</sup> capacity and the caustic soda tank of 30 m<sup>3</sup> capacity are contained in a common concrete bund of 168 m<sup>3</sup> capacity designed to contain the largest tank (cyanide) to conform to the international Cyanide Management Code (ICMC) 120% requirement.

**Caustic soda** (sodium hydroxide) Liquid caustic as 50% NaOH will be delivered by truck in 16 m<sup>3</sup> isotainers and transferred to a 30 m<sup>3</sup> storage tank located in the common cyanide – caustic bundled reagents area. The caustic tank is dual walled and will deliver caustic to the elution circuit via positive displacement pumps.

**Hydrochloric acid** (HCL) as 28% HCL will be delivered to site truck in 16 m<sup>3</sup> isotainer and transferred to a 30 m<sup>3</sup> tank dual walled tank and bund situated in a separate area from caustic and cyanide storage. The HCL bund volume is designed as 110% containment or 33 m<sup>3</sup> (Figure 15). The hydrochloric acid will be delivered to the circuit via metering pump and (PVC) pipelines conforming to engineering standards.

**Activated carbon** is delivered to site in plastic lined bulka boxes and stored undercover in the site warehouse until required.

**Grinding media** is delivered to site in media bulka bags or in 44-gallon drums (205 L). These are stored in the site warehouse or maintenance yard.

**Flocculant** is delivered as a dry powder in 1 tonne packages of 40 x 25 kg bags. Bags are emptied to the flocculant mixing system which prepares a flocculant solution for use in the pre-leach thickener. The flocculant mixing system is located inside the contiguous CIP – thickener bunding. This area has a dedicated sump and electric vertical spindle sump recovery pump which discharges to the thickener or the CIP circuit.

All other chemicals (and hydrocarbon and fuels) transport, storage and use will be according to and regulated under Dangerous Goods Licence.



**Figure 15: Indicative reagent or chemical storage (hydrochloric acid tank bunding)**

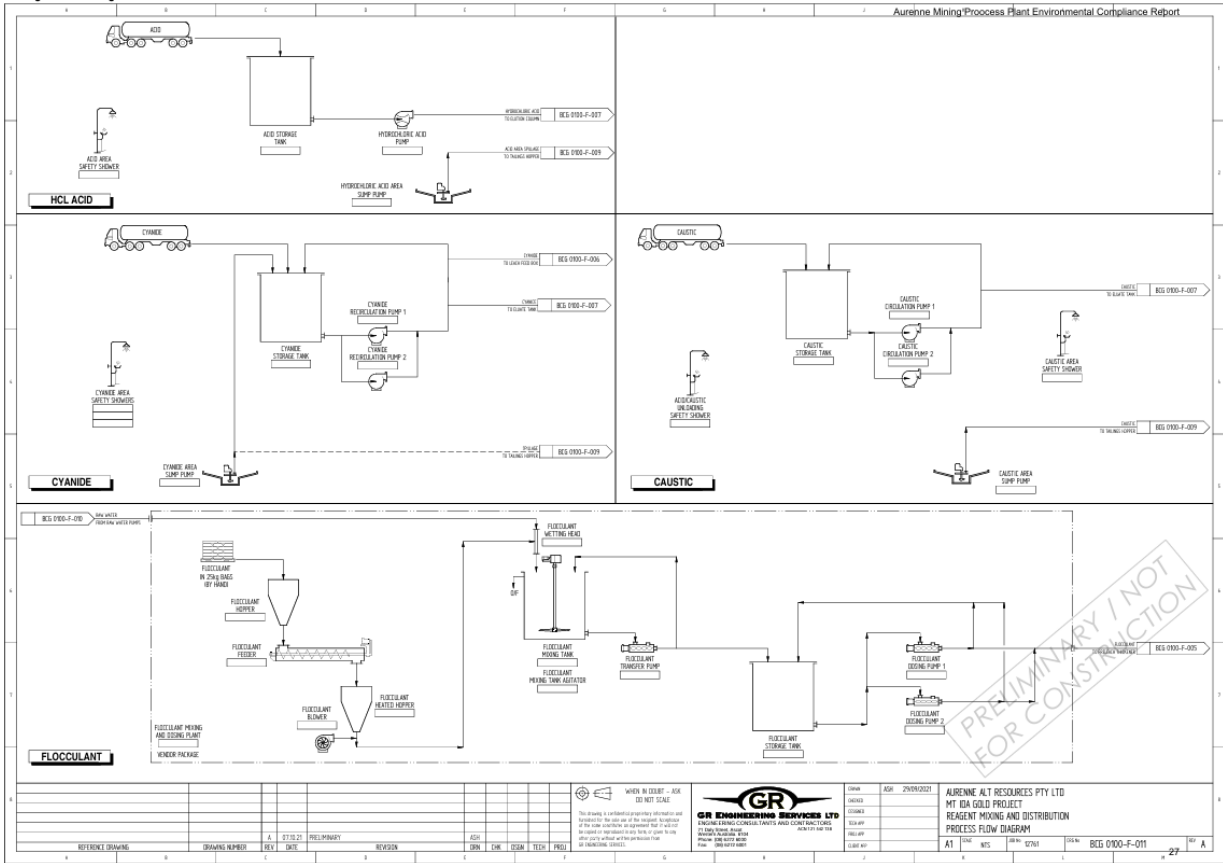


Figure 16: Reagent use process flow diagram (PFD)

2.8.4 Additional cyanide storage within the processing plant footprint

As part of this licence application, the applicant proposes to construct two additional 150 kL tanks (or equivalent) for the storage of cyanide (Figure 17).

The new tanks will be designed as copies of the existing tank, modified to accept 150 kL (to a maximum total capacity of 300 kL) and the system amended to meet AS4452 as required. The installation of additional continuous bunding will meet recent amendments to AS4452.

The new tanks will be hard connected to the existing tank, so that existing distribution pumping and piping to the process plant will be unchanged and continue to be via the existing tank. The new tanks will be storage only and not used for distribution.

The applicant states that the existing CN receive area / apron will not be modified and will continue to be the only receive area.

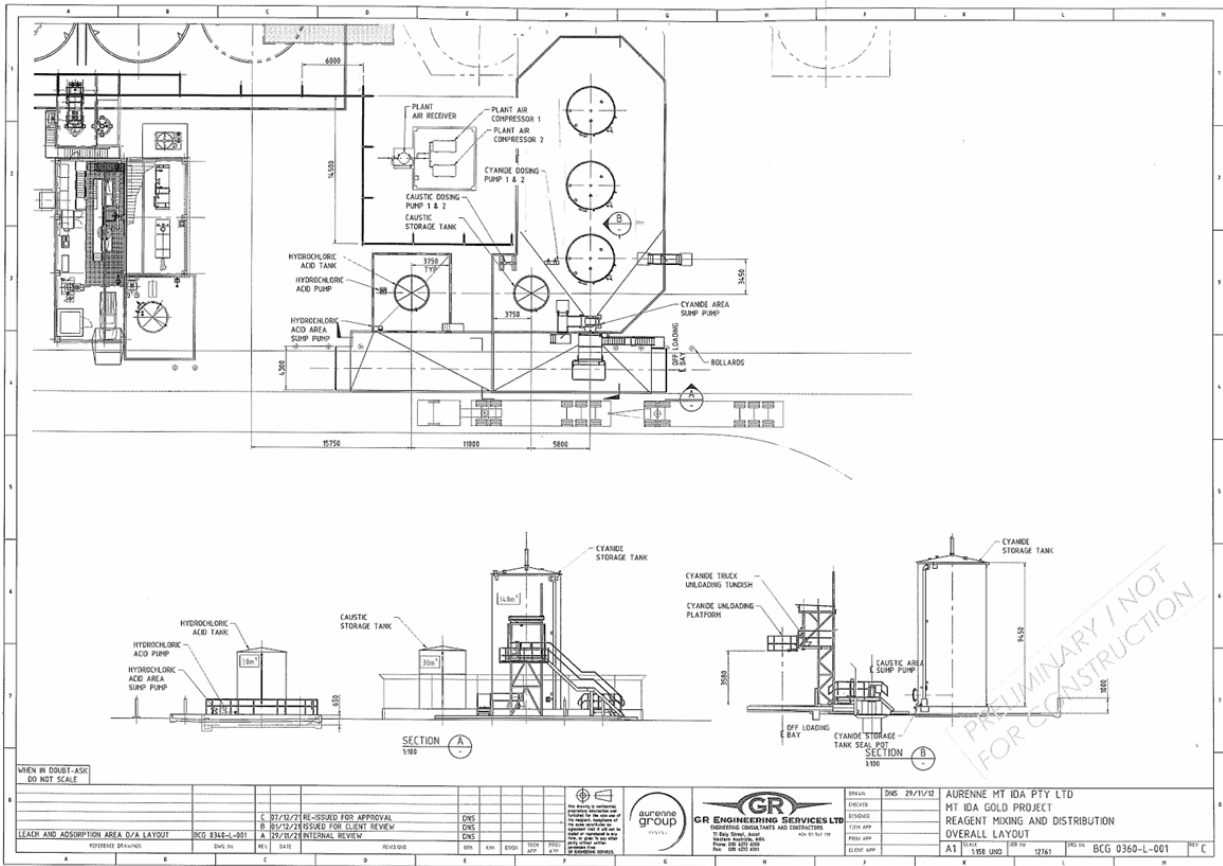


Figure 17: Reagent mixing and distribution layout with additional cyanide storage

## 2.9 Category 64 landfill (W6640/2022/1)

The Category 64 village landfill was constructed under the requirements of works approval W6640/2022/1. The applicant provided a compliance report to the department on 9 January 2023.

The site of the village landfill is approximately 175 m long bearing east-west, and 60 m wide bearing north-south. It has an area of approximately 1 ha (Figure 18, and Figure 19).

The site is fully secured by a rigid steel fence approximately 1.6 m high.

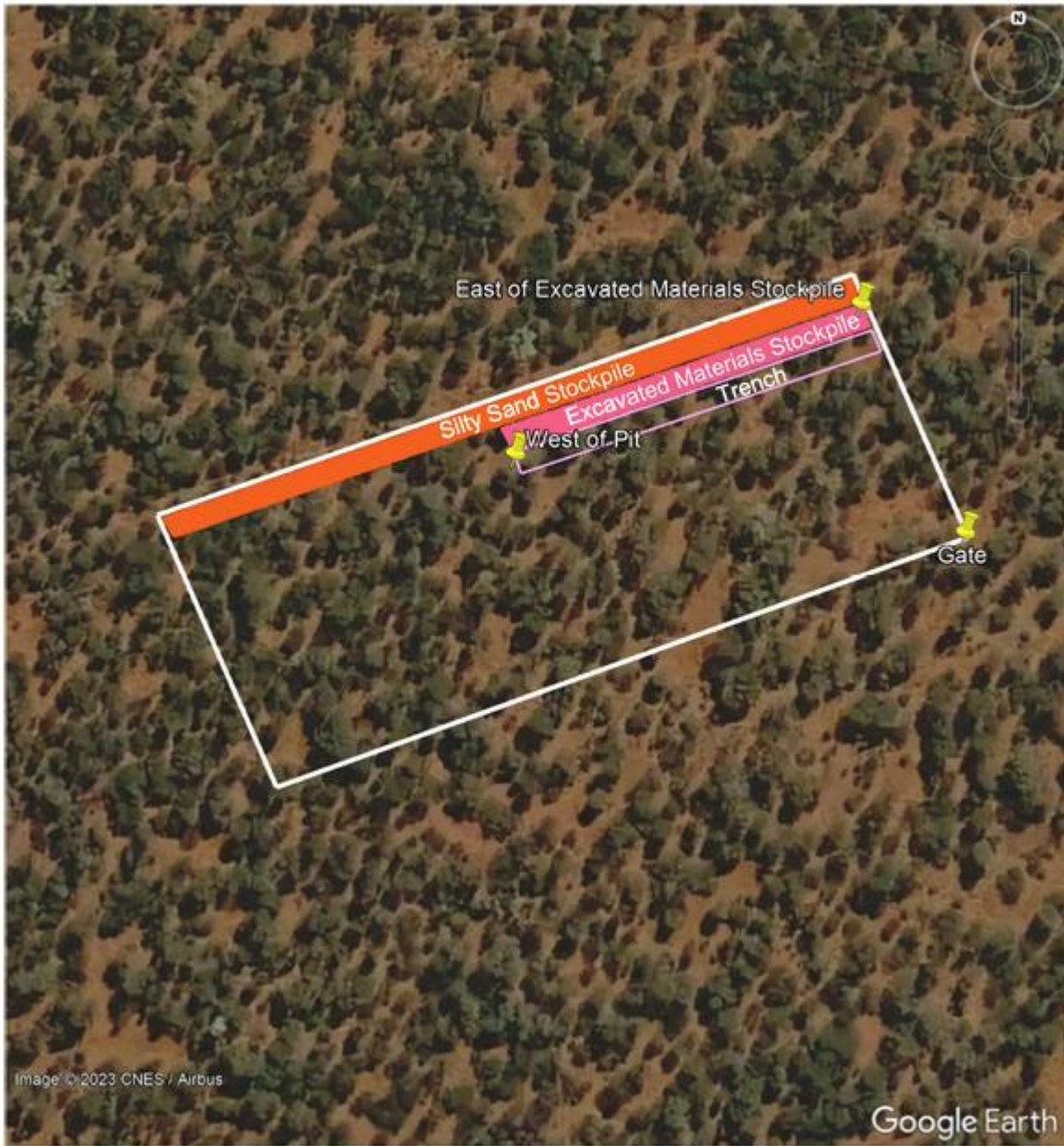
A landfill trench measured approximately 90 m long, 2 m deep, with a 3 m wide has been constructed in the northeast of the site. The volume of the trench is estimated at 900 m<sup>3</sup>.

Hazardous waste will not be accepted at the landfill. The workshop will have a laydown area for temporary storage of hazardous waste that will be taken offsite for recycling or disposal.

A review of available aerial photographs of the village landfill site indicates no permanent or perennial watercourse within 100 m of the site boundary.



**Figure 18: Bottle Creek landfill location**



**Figure 19: Bottle Creek landfill site layout**

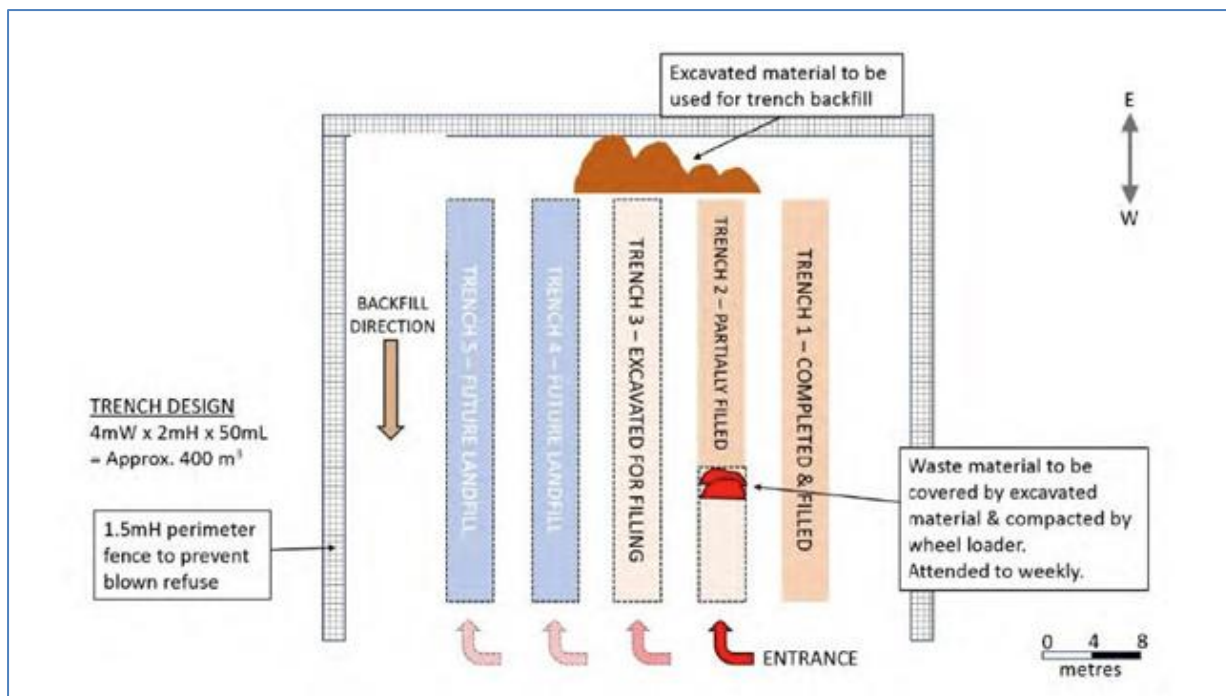


Figure 20: landfill design and operation

## 2.10 Groundwater

Groundwater occurs in weathered and fractured rock aquifers associated with the Raeside Fractured Rock Aquifer (north) and the Rebecca Fractured Rock Aquifer, with the Rebecca palaeochannel underlying the Bottle Creek drainage line.

Standing groundwater levels are 28.9 to 44.3 m below ground level, generally semi-confined to confined, indicating limited interaction with surface processes.

Groundwater quality is generally brackish to highly saline.

- **pH:** circum-neutral to alkaline (most bores <8; some pit waters up to ~9).
- **Salinity/TDS:** ranges from marginally saline (~500–1,000 mg/L TDS) to highly saline (10,000–35,000 mg/L TDS) in several bores and open pits.
- **Major ions:** elevated chloride, sulfate, sodium and potassium, characteristic of Na-Cl type waters.

Based on the above the department believes that groundwater is naturally poor quality, deep, saline and geologically contained, with low sensitivity to minor surface disturbances.

The potential for groundwater quality impacts associated with the proposed ongoing operation of the processing plant has been assessed with consideration of the local hydrogeological setting, baseline groundwater conditions, and the design and operational controls incorporated into the proposal.

Future operations of the project include the discharge of high-density tailings (60% solid) which the applicant believes will promote improved consolidation and reduced permeability within the TSF, further limiting seepage potential over the operational life of the facility.

Within the processing plant, equipment is located in a fully bunded and lined containment area designed to capture any spills or leaks and direct them to sumps for recovery back into the process circuit. This secondary containment greatly reduces the potential for process fluids to enter surrounding soils. Tailings and process pipelines are fitted with flow monitoring and rupture detection systems capable of identifying both gradual leaks and sudden failures, with

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alarms and shutdown procedures allowing rapid response to minimise release volumes.

The sensitivity of the groundwater resource is low, as groundwater quality is naturally poor and generally unsuitable for potable or agricultural use without treatment. There are no public drinking water source areas, groundwater-dependent ecosystems or known third-party groundwater users in proximity to the site. Groundwater is primarily used on site for industrial purposes.

A network of groundwater monitoring bores installed downgradient of key infrastructure provides an early warning system to detect any changes in groundwater level or quality. The applicant believes that this monitoring, combined with the depth to groundwater, engineered containment measures and reduced water flux to the TSF, ensures that any unforeseen impacts would be localised and detectable.

## 2.11 Surface water

The project area is located in an arid to semi-arid environment characterised by low annual rainfall, high evaporation rates, and an absence of permanent surface water bodies. Surface water occurs only episodically following significant rainfall events. Drainage within the project area is defined by shallow, poorly incised ephemeral drainage lines that form part of the upper catchment of Bottle Creek.

Bottle Creek flows intermittently and ultimately drains toward Lake Ballard, a large internally draining salt lake approximately 20 km downstream of the project.

Local drainage lines are broad and discontinuous, with extensive floodplains and subdued gradients. These features, combined with dense native vegetation, limit flow velocities and promote infiltration and evaporation rather than sustained surface runoff.

The project area is not located within a proclaimed surface water management area, and no permanent creeks, wetlands or riparian ecosystems occur within or adjacent to the proposed disturbance footprint. Existing mining activities in the area have previously modified some local surface water pathways, and formal surface water management structures are already in place.

## 2.12 Department of Mines, Petroleum and Explorations (DMPE)

The Mt Ida Gold Project – Bottle Creek, whole of site, has been transitioned to Mine Development and Closure Proposal (MDCP) guidelines as part of assessment of MP Reg ID 500796.

A further MDCP amendment (MDCP Reg ID 207206) was approved on 16 April 2026 with the issued Approval Statement AS-000817 v2.0 the final source of truth for DMPE approvals.

The CIP processing plant is an approved activity and was assessed for a capacity of between 2.0 – 2.5 Mtpa. The current approved height of IWL/TSF is RL498, consisting of 6 lifts, however DMPE have been advised by Aurene Mining Pty Ltd of their intention to submit a MDCP amendment seeking additional TSF lifts. This will be assessed in due course.

The landfill activities are consistent with DMPE approvals.

All approved activities were assessed and deemed to meet DMPE environmental objectives. Standard environmental and closure outcomes have been imposed to manage any non-compliance with said DMPE environmental objectives.

## 2.13 Other approvals

A clearing permit (NVCP CPS 9383/3) has been approved for 1,000 ha. A licence to take groundwater has been granted under Section 5C of the RIWI Act by DWER.

The groundwater licence provides an annual water entitlement of 1.5 GL and authorises the  
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taking of water within the project tenements for processing and dust suppression and mining camp purposes. The applicant indicate that this licence may be amended to increase allowance and purposes.

### 3. Risk assessment

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

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

#### 3.1 Source-pathways and receptors

##### 3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 5 below. Table 5 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

**Table 5: Proposed applicant controls**

Emission	Sources	Potential pathways	Proposed controls
<b>Construction</b>			
Dust	Earthworks and ground preparation for <ul style="list-style-type: none"> <li>IWL TSF raises</li> <li>Additional gold processing infrastructure</li> </ul>	Air/windborne pathway causing poor vegetation health/death for threatened flora	<ul style="list-style-type: none"> <li>Dust generated by clearing and ground preparation, and during operations will be controlled using groundwater carried in water carts and infrastructure-mounted water spray nozzles.</li> <li>During periods of high winds, earthworks and topsoil handling will be restricted if dust cannot be adequately controlled.</li> </ul>
		Air/windborne pathway causing impacts to malleefowl mounds during breeding season (1 September to 31 January)	<ul style="list-style-type: none"> <li>The premises will operate under a Malleefowl Management Plan E-PLA- 005 which includes the following:                             <ul style="list-style-type: none"> <li>Gather baseline information, including spatial data regarding malleefowl within the project area.</li> <li>Record location of malleefowl sightings and active malleefowl mounds and any mortalities of protected or listed fauna.</li> <li>Liaise with DBCA.</li> <li>Undertake training and</li> </ul> </li> </ul>

Emission	Sources	Potential pathways	Proposed controls
			awareness of fauna management.
<b>Operation</b>			
<b>Processing plant and process water ponds</b>			
<p>Spills/leaks of process water contaminated with environmentally hazardous materials (metalloids, cyanide, processing plant reagents)</p> <p>Contaminated surface water run off</p>	Operation of the processing plant	Direct discharge to land causing vegetation poor health/death for threatened flora and adjacent native vegetation	<ul style="list-style-type: none"> <li>• Carbon in Pulp (CIP) circuit to be located on a concrete floor and bunded with a capacity of 110% of the largest CIP tank.</li> <li>• Stormwater from the process plant and plant area will be directed to spoon and V-drains established as part of the site earthworks and road construction, directing internal stormwater to staged sedimentation sumps to allow deposition of suspended material before discharge to the natural water courses.</li> <li>• Sumps inspected daily and surplus water pumped into the process water pond with sediment disposed in the IWL/TSF.</li> <li>• Chemicals and hydrocarbons to be stored within double walled or bunded containment, designed to minimise the risk of contamination to the surrounding environment by containing any spilled products.</li> <li>• Spill response equipment will be available on each maintenance/service vehicle.</li> <li>• Routine shift inspection for spillage and sump clearance. Recording of spills and incidents.</li> <li>• Four groundwater monitoring bores installed surrounding the processing plant/ROM/workshop.</li> </ul>
Dust		Air/windborne pathway causing poor vegetation health/death for threatened flora	<ul style="list-style-type: none"> <li>• Dust suppression using saline groundwater carried in water carts and infrastructure-mounted water spray nozzles.</li> <li>• During periods of high wind, topsoil handling will be restricted if dust cannot be adequately controlled.</li> <li>• Biennial remote sensing of vegetation condition.</li> </ul>
Water	Process water	Seepage through	<ul style="list-style-type: none"> <li>• No pathway. Pond is lined with high</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
contaminated with environmentally hazardous materials (metalloids, cyanide, processing plant reagents).	pond (to accept decant return water from IWL TSF)	base and embankments to soil and groundwater causing vegetation poor health/death	density polyethylene (HDPE) 2mm. <ul style="list-style-type: none"> <li>Inspected daily.</li> <li>Biennial remote sensing of vegetation condition.</li> </ul>
		Overtopping and direct discharge to land causing vegetation poor health/death	<ul style="list-style-type: none"> <li>Process water pond can be switched to pump back to the IWL/TSF.</li> <li>Process control alarms for loss of containment.</li> <li>Designed and constructed with a lined overflow emergency sump.</li> <li>500 mm freeboard to be maintained at all times.</li> <li>Inspected daily and monitored for overflow.</li> </ul>
Hypersaline dewater (from pit lakes and eventually from mine dewater) potentially contaminated with metalloids	Raw water pond (raw water obtained from existing pit lakes and eventually mine dewater)	Seepage through base and embankments to soil and groundwater causing vegetation poor health/death	<ul style="list-style-type: none"> <li>No pathway. Pond is lined with high density polyethylene (HDPE) 2mm.</li> <li>Inspected daily.</li> <li>Biennial remote sensing of vegetation condition.</li> </ul>
		Overtopping and direct discharge to land causing vegetation poor health/death	<ul style="list-style-type: none"> <li>Raw water pond overtops into the process water pond.</li> <li>500 mm freeboard to be maintained at all times.</li> <li>Inspected daily and monitored for overflow.</li> </ul>
<b>IWL / TSF</b>			
Tailings and contaminated water (metalloids, cyanide)	Discharge and storage of tailings in the IWL TSF	Seepage through base and embankments to soil and groundwater causing vegetation poor health/death and groundwater contamination	<ul style="list-style-type: none"> <li>Underdrainage system by gravity to a collection tower.</li> <li>Decant water will be collected from the IWL/TSF via the decant tower and removed from the TSF by a pontoon mounted decant pump. Return water will be pumped directly to the process plant for reuse.</li> <li>Five groundwater monitoring bores installed surrounding the IWL/TSF.</li> <li>Three pairs of vibrating wire piezometers installed in embankments.</li> <li>Biennial remote sensing of</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
			vegetation condition, including baseline monitoring. <ul style="list-style-type: none"> <li>• Daily inspection of the IWL/TSF.</li> </ul>
		Overtopping and direct discharge to land causing vegetation poor health/death	<ul style="list-style-type: none"> <li>• Designed to accommodate a 1:100 yr. AEP, 72-hour duration storm event.</li> <li>• The total freeboard for the IWL TSF will be 0.7 m which includes:                             <ul style="list-style-type: none"> <li>○ 0.3 m operational freeboard;</li> <li>○ 0.2 m beach freeboard;</li> <li>○ And nominally 0.2 m allowance for a 1 in 100 year or 1% average exceedance probability (AEP) 72-hour storm event</li> </ul> </li> <li>• Daily inspection of IWL freeboard.</li> </ul>
		Pipeline leak/rupture and direct discharge to land causing vegetation poor health/death	<ul style="list-style-type: none"> <li>• Pipelines constructed from HDPE and placed in an unlined trench and within a pipe-type culvert as it passes under the site access road as it approaches the processing plant.</li> <li>• Pipelines constructed and installed to Australian Standards AS4130 and AS413 and Plastics Industry Pipe Association of Australia Limited (PIPA) Guideline POP003.</li> <li>• Transfer pipelines are connected to the processing plant control system which monitors pressure in pipelines. In the event of an immediate drop in pressure within a pipeline, an alarm will be activated to notify mill control operators. The plant will be shut down immediately and to stop the flow.</li> <li>• Pipelines to be visually inspected daily – return water &amp; tailings pipelines.</li> <li>• Pipelines to be stored in trenches sufficient to contain spillages between routine inspections.</li> </ul>
		Contaminated stormwater run-off	No controls proposed.
Dust from tailings beaches		Air/windborne pathway causing poor vegetation	<ul style="list-style-type: none"> <li>• No sensitive human receptors located within 50 km of the</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
		health/death for threatened flora	<p>premises.</p> <ul style="list-style-type: none"> <li>Consistent deposition around the TSF to prevent tailings excessively drying out and lifting off.</li> </ul>
<b>Pit dewatering (ancillary to prescribed activities)</b>			
Hypersaline water, potentially contaminated with environmentally hazardous materials (metalloids).	Dewatering of existing pit lakes for dust suppression.	Over-spraying of saline dewater for dust suppression causing vegetation poor health/death.	Biennial remote sensing of vegetation condition.
<b>Landfill operations</b>			
Dust	Operation of a category 64 landfill	Air/windborne pathway causing impacts to adjacent threatened flora and native vegetation	<ul style="list-style-type: none"> <li>Water cart to be used as required.</li> </ul>
		Air/windborne pathway causing impacts to health and amenity	<ul style="list-style-type: none"> <li>Waste to be placed in trenches and covered on a weekly basis.</li> <li>The applicant indicates that a fence placed around the landfill will act as a barrier to windblown waste.</li> <li>Any waste that is blown outside of the landfill will be returned to the tipping area at least once every month.</li> </ul>
Windblown waste		Fauna access/scavenging	<ul style="list-style-type: none"> <li>Fence to be placed around the boundary of the landfill to ensure barrier in place to prevent fauna from accessing the waste material.</li> <li>Gates kept closed when no access required.</li> <li>Daily inspections.</li> <li>Waste covered weekly. Frequency of waste covering to be increased if fauna observed trapped in trenches or scavenging.</li> </ul>
Leachate		Seepage through base and embankments to soil and groundwater	<p>No controls proposed.</p> <ul style="list-style-type: none"> <li>The applicant has indicated that the waste facility has been "sited on higher ground, approximately 26 - 44</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
		causing vegetation poor health/death and groundwater contamination	m above groundwater level".

### 3.1.2 Receptors

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

Table 6 and Figure 21 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

**Table 6: Sensitive human and environmental receptors and distance from prescribed activity**

Environmental receptors	Distance from prescribed activity
RIWI Goldfields Groundwater Area	Standing groundwater levels vary between 28.9 and 44.3 below surface within a semi-confined to confined aquifer.  Marginal (500 mg/L) to hypersaline (35,000 mg/L) depending on area.  Most groundwater sources, excluding the Walling Rock BIF Bore, have elevated concentrations of sulfate (between 530 mg/L and 4,460 mg/L SO <sub>4</sub> ), chloride (between 1,020 mg/L and 14,300 mg/L Cl), sodium (between 678 mg/L and 6,970 mg/L) and potassium (between 20 mg/L and 246 mg/L).
<u>Threatened ecological community:</u>  Perrinvale / Walling vegetation complex (Priority 1)	2.3 km west of prescribed premises boundary.
<u>Threatened fauna</u>  Priority: Long-tailed dunnart ( <i>Sminthopsis longicaudata</i> )  Malleefowl ( <i>Leipoa ocellata</i> )	Long-nosed dunnart 1.8 km west of premises boundary.  Malleefowl 2.5 km west of the premises boundary.
<u>Priority Flora</u>  Priority 1 flora - <i>Jacksonia lanicarpa</i>  One Priority 1 ( <i>Drosera eremaea</i> ), two Priority 3 ( <i>Calotis</i> sp. Perrinvale Station (R.J. Cranfield 7096), <i>Calytrix hislopii</i> ), and two Priority 4 ( <i>Hemigenia exilis</i> , <i>Lepidosperma lyonsii</i> ).	Within the prescribed premises boundary.  The taking of Priority flora ( <i>Jacksonia lanicarpa</i> P1) will be regulated under NVCP CPS 9383 and Department of Biodiversity, Conservation and Attractions (DBCA) has been advised of the presence of a Priority flora".  As identified by NatureMap (2021) and the Protected Matters Search Tool (DAWE 2021).

<p>Ephemeral creek lines</p>	<p>On-site within project area.</p> <p>The proposed Project area lies in the headwaters of Bottle Creek, which drains to Lake Ballard.</p> <p>Lake Ballard is an internally drained, intermittent salt lake in the wider Raeside-Ponton catchment and has substantial environmental values and has been nominated Nationally Important Wetland (RAMSAR listing).</p> <p>Due to the distance to Lake Ballard, the project activities are unlikely to have a negative impact on the water quality or quantity, and therefore the environmental values of the lake.</p>
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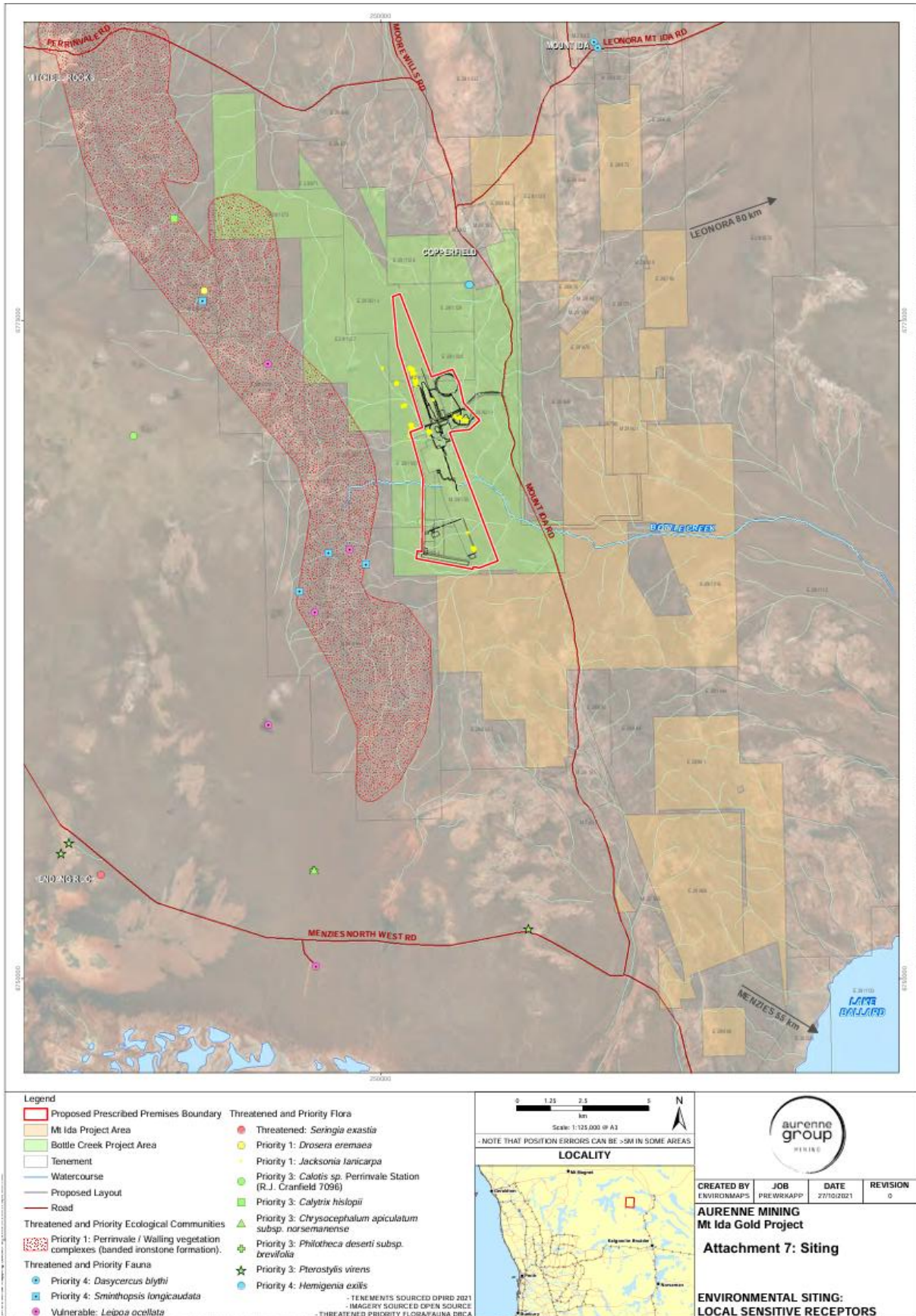


Figure 21: Distance to sensitive receptors

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## 3.2 Risk ratings

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

Where the applicant 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 applicant'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 applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 7.

Licence L3156/2025/1 that accompanies this decision report authorises emissions associated with the operation of the premises i.e. Category 5, Category 7 and Category 64 activities.

The conditions in the issued licence, as outlined in Table 7 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

**Table 7: Risk assessment of potential emissions and discharges from the premises during construction and operation**

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
<b>Construction</b>								
Earthworks and ground preparation for <ul style="list-style-type: none"> <li>IWL TSF raises</li> <li>Additional gold processing infrastructure</li> </ul>	Dust	Air / windborne pathway causing impacts to health and amenity	Priority flora Malleefowl 2.5 km west of the prescribed premises.	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 8 Authorised discharge point	The applicant will use a water cart for dust suppression and condition 8 of the licence allows dust suppression as an authorised discharge point.
<b>Operation of processing plant and process water pond</b>								
Operation of the processing plant	Spills / leaks of process water contaminated with environmentally hazardous materials (metalloids, cyanide, processing plant reagents).  Contaminated surface water run-off.	Direct discharge to land causing vegetation poor health/death for threatened flora and adjacent native vegetation.	Priority flora within prescribed premises ( <i>Jacksonia lanicarpa</i> ) Adjacent native vegetation Nearby threatened fauna (reliant on vegetation)	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Condition 1 Infrastructure and equipment requirements  Condition 9 - 11 Management of hydrocarbon spills and stormwater.	N/A
	Dust	Air / windborne pathway causing poor vegetation health/death for threatened flora	Threatened flora Malleefowl 2.5 km west of the prescribed premises.	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 8 Authorised discharge point	The applicant will use a water cart for dust suppression and condition 8 allows dust suppression as an authorised discharge point.
Process water pond	Water contaminated with environmentally hazardous materials (metalloids, cyanide, processing plant reagents).	Overtopping and direct discharge to land causing vegetation poor health/death.	Priority flora within prescribed premises ( <i>Jacksonia lanicarpa</i> ) Adjacent native	Refer to Section 3.1	C = Moderate L = Possible <b>Medium Risk</b>	Y	Condition 1 Infrastructure and equipment requirements  Condition 8 Emission and discharge	The Delegated Officer considers that the applicant proposed controls to manage overtopping are

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			vegetation Nearby threatened fauna (reliant on vegetation)				Condition 24 Monitoring of vegetation health	acceptable and has included these within the licence as regulatory controls.
Raw water pond (raw water obtained from existing pit lakes and eventually mine dewater)	Hypersaline dewater (firstly from pit lakes and eventually from mine dewater) potentially contaminated with metalloids	Overtopping and direct discharge to land causing vegetation poor health/death	Priority flora within prescribed premises ( <i>Jacksonia lanicarpa</i> ) Adjacent native vegetation Nearby threatened fauna (reliant on vegetation)	Refer to Section 3.1	C = Moderate L = Possible <b>Medium Risk</b>	Y	Condition 1 Infrastructure and equipment requirements Condition 8 Emission and discharge Condition 24 Monitoring of vegetation health	The licence also includes monitoring conditions and ongoing assessment of vegetation health.
<b>Operation of tailings storage facility</b>								
Discharge and storage of tailings in the TSF	Tailings and contaminated water (metalloids, cyanide)	Seepage through base and embankments to soil and groundwater causing vegetation poor health / death and groundwater contamination	Threatened flora on-site. Adjacent native vegetation. Underlying soil and groundwater.	Refer to Section 3.1	C = Moderate L = Possible <b>Medium Risk</b>	Y	Condition 1 Infrastructure and equipment requirements Condition 18 Monitoring of TSF water balance Condition 19 Monitoring of groundwater Condition 24 Vegetation health assessment	Conditions in the licence include ensuring decant pond size is managed and changes in seepage conditions or sudden change in standing water level are monitored and resolved.
		Overtopping of TSF and direct discharge to land causing vegetation poor health / death.	Threatened flora on-site. Adjacent native vegetation. Underlying soil and groundwater.	Refer to Section 3.1	C = Moderate L = Possible <b>Medium Risk</b>	Y	Condition 1 Infrastructure and equipment requirements Condition 18 Monitoring of TSF water balance Condition 24 Vegetation health assessment	Freeboard size is set in the licence, and conditions are included for the management of decant pond size and ongoing reporting on TSF water balance and vegetation health.
		Pipeline leak / rupture and direct	Threatened flora	Refer to	C = Moderate	Y	Condition 1 Infrastructure and equipment	Inspection of pipelines is

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		discharge to land causing vegetation poor health / death.	on-site. Adjacent native vegetation. Underlying soils and groundwater.	Section 3.1	L = Possible <b>Medium Risk</b>		requirements Condition 19 Monitoring of groundwater	included as a condition in the licence. Pipelines are fitted with telemetry and leak detection.
	Dust from tailings beaches	Air / windborne pathway causing poor vegetation health/death for threatened flora	Threatened flora Malleefowl 2.5 km west of the prescribed premises.	Refer to Section 3.1	C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1 Infrastructure and equipment requirements	Applicant state that tailing deposition will be performed around the entire TSF to keep dust generation to a minimum.
<b>Discharge of RO brine and pit dewatering (ancillary to prescribed activities)</b>								
Discharge of hypersaline brine from reverse osmosis plant into pit lakes and dewatering of existing pit lakes for dust suppression	Hypersaline water, potentially contaminated with environmentally hazardous materials (metalloids)	Over-spraying of saline dewater for dust suppression causing vegetation poor health/death	Priority flora within prescribed premises ( <i>Jacksonia lanicarpa</i> ) Adjacent native vegetation Nearby threatened fauna (reliant on vegetation) Nearby ephemeral creek lines	Refer to Section 3.1	C = Moderate L = Possible <b>Medium Risk</b>	Y	Condition 8 Emission and discharges Condition 24 Vegetation health assessment	Decant water, RO plant brine and pit lake/mine dewater/bore water can only be discharged to authorised locations.  Vegetation health will be assessed and reported once every two years.
<b>Operation of landfill</b>								
Operation of category 64 landfill	Dust	Air / windborne pathway causing impacts to adjacent threatened flora and native vegetation	Threatened flora on-site Adjacent native vegetation	Refer to Section 3.1	C = Slight L = Unlikely <b>Medium Risk</b>	Y	Condition 1 Infrastructure and equipment requirements	Waste will be covered weekly and stockpiled will be watered down to reduce dust emissions
	Leachate	Seepage through base and embankments to	Threatened flora on-site	Refer to Section 3.1	C = Minor L = Unlikely	Y	N/A	Depth to groundwater in the vicinity of the

Risk events					Risk rating <sup>1</sup> C = consequence L = likelihood	Applicant controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls / DWER comments
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
		soil and groundwater causing vegetation poor health / death and groundwater contamination	Adjacent native vegetation  Underlying soils and groundwater		<b>Medium Risk</b>			landfill is between 26 and 44 metres.
	Windblown waste	Air / windborne pathway causing impacts to native vegetation or attracting fauna.	Adjacent native vegetation  Fauna access/scavenging	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Condition 1 Infrastructure and equipment requirements  Condition 12 Windblown waste	Conditions are included in the licence to control windblown waste.

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

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

## 4. Consultation

Table 8 provides a summary of the consultation undertaken by the department.

**Table 8: Consultation**

Consultation method	Comments received	Department response
Application advertised on the department's website on 30 March 2026	None received	N/A
Local Government Authority - Shire of Menzies advised of proposal 7 April 2026	None received	N/A
Department of Mines, Petroleum and Exploration (DMPE) advised of proposal 7 April 2026	DMPE replied on 17 April 2026 advising that all approved activities were assessed and deemed to meet DMPE environmental objectives.  Standard environmental and closure outcomes have been imposed within the Mining Proposal to manage any non-compliance with said DMPE environmental objectives.  Refer to section 2.12	Noted
Applicant was provided with draft documents on 7 May 2026.	Applicant responded to draft package on 13 May 2026.  Refer to Appendix 1	Refer to Appendix 1

## 5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

## References

1. Aurene Mining 2023, *Mt Ida Gold Project Stage 1 Works Approval Process Plant Environmental Compliance Report*, West Perth, Western Australia.
2. Aurene Mining 2024, *Mt Ida Gold Stage 1 Works Approval Process Plant and Integrated Waste Landform Commissioning Report*, West Perth, Western Australia.
3. Aurene Mining 2025, *Mt Ida Gold Project Licence Application – Supporting Information and TSF Annex*, West Perth, Western Australia.
4. Aurene Mining 2026, *Mt Ida Gold Project IWL/TSF Stage 6-8 Works Approval Application – Supporting Information*, West Perth, Western Australia.
5. CMW Geosciences Pty Ltd 2021, *Integrated Waste Landform Tailings Storage Facility Bottle Creek Project, WA – Design Report*, Perth, Western Australia.
6. CMW Geosciences Pty Ltd 2023, *Integrated Waste Landform (IWL) Tailings Storage Facility (TSF) Mt Ida Gold Project – Construction Completion Report*, Perth, Western Australia.
7. CMW Geosciences Pty Ltd 2023, *Stage 1 Works Approval Integrated Waste Landform Tailings Storage Facility Critical Containment Infrastructure Report*, Perth, Western Australia.
8. CMW Geosciences Pty Ltd 2026, *Mt Ida Gold Project - Design of IWLTSF Stage 6 to Stage 8 Raises*, Wembley, Western Australia.
9. Graeme Campbell & Associates Pty Ltd 2021, *Geochemical Assessment of Tailings Slurry Samples – Mt Ida Gold Project*, Perth, Western Australia.
10. Green Values Australia 2025, *Mt Ida Project – Phase 3 Mining Proposal Application*, Perth, Western Australia
11. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
12. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
13. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
14. Hydrologia 2026, *Mt Ida Gold Project, Stage 3 Bottle Creek – Surface Water Assessment*, Perth, Western Australia.
15. Pendragon Environmental Solutions (Pendragon) 2026, *Mt Ida Gold Project Bottle Creek Mining and Processing Sulphide Tailings Characterisation, Revision No 2*, Floreat, Western Australia

## Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
Cover page	<p>Category 5: Aurene requests that the throughput in the licence is to be increased to 2.7 Mtpa from 2.2 Mtpa.</p> <p>Justification: Throughput and reserves are set to increase for the foreseeable future.</p>	<p>The department accepts the applicant's request to increase the Category 5 assessed throughput in the licence from 2.2 Mtpa to 2.7 Mtpa.</p> <p>This decision report recognises that the Mt Ida Gold Project processing plant has been designed for, and can support, increasing throughput within an expanded operational envelope, with upgrades and additional infrastructure proposed and assessed as part of the application. This includes improvements to processing efficiency (e.g. increased slurry density to ~60% solids), additional reagent storage, and supporting infrastructure upgrades that enable higher production rates without materially increasing environmental risk.</p> <p>This decision report also demonstrates that tailings management capacity has been expanded through the approved Stage 6 – 8 TSF raises, providing additional storage volume (~3.4 Mm<sup>3</sup>) and supporting continued and increased processing throughput over the life of the operation.</p> <p>Importantly, the department's risk assessment concludes that emissions and discharges associated with processing operations (Category 5 activities) are manageable and remain at acceptable risk levels when subject to the prescribed design, operational controls, and monitoring conditions included in the licence.</p>
<p>Condition 1 Item 1 - <i>Integrated waste landform and tailings storage facility (IWL / TSF),</i> provision (b)</p>	<p>Aurene requests that the 5% decant requirement is reassessed for an increase to 25%.</p> <p>Justification: Tailings fines at Mount Ida Operations are mostly clay, very dispersive that naturally forms a flat beach, creating a larger pond. As Aurene are also required to maintain adequate freeboard for a 1 in 100 AEP Aurene believe that of the two controls, maintaining freeboard in the TSF is of greater importance for managing environmental</p>	<p>The department accepts the applicant's request to increase the allowable decant pond area from 5% to 25% of the total tailings surface area.</p> <p>This decision report demonstrates that water management within the TSF is based on an integrated system of decant recovery, reuse, and freeboard control, rather than reliance on a fixed pond size alone. The department notes that the high rate of water recovery, combined with continuous reuse in processing, reduces the likelihood of uncontrolled pond growth and supports ongoing management of water levels within the TSF.</p> <p>This decision report further confirms that the TSF has been designed in accordance with ANCOLD (2019) guidance to maintain a minimum total freeboard of 0.7 m, including allowances for operational requirements, beach development, and a 1 in 100-year AEP, 72-hour rainfall event. This freeboard provision represents the primary control for preventing overtopping and associated environmental impacts.</p> <p>The department acknowledges the applicant's justification that the fine-grained and dispersive nature of tailings at the premises may limit beach development and result in a larger supernatant pond. This is consistent with the understanding in this decision report that tailings characteristics influence deposition behaviour and water distribution across the TSF.</p> <p>Therefore, allowing an increased decant pond area of up to 25% does not materially increase environmental risk, provided that freeboard requirements and water management controls continue to be met.</p>

Condition	Summary of applicant's comment	Department's response
	<p>impact risks.</p>	<p>Accordingly, the licence will be amended to reflect a revised decant pond limit of <math>\leq 25\%</math> of the total tailings surface area, with freeboard and monitoring requirements retained as the primary environmental protection controls.</p>
<p>Condition 5 (Table 3)</p>	<p>RO Plant: Aurene requests removal of specific PPM (e) and TDS (f) amounts.</p> <p>Justification: The information expressed in this table has come from the specifications of the plant manufacturer. The purpose of inclusion of this information with our application was for information purposes only, we request that (e) and (f) are removed from the table. Aurene have the skills in house to adequately run the plant as per the manufacturer's specifications and troubleshoot if any issues arise.</p> <p>Cyanide Storage: Aurene requests that the wording for (a) be "2 x 150 kL tanks or equivalent."</p> <p>Justification: The specific tank(s) are yet to be purchased and there may need to be some flexibility in tank volume capacity, but not total volume of cyanide managed and stored on site.</p>	<p>The department accepts the applicant's request to remove the specific TDS input and output specifications from the RO plant construction requirements.</p> <p>This decision report identifies the RO plant as a minor ancillary component of the overall processing system, with relatively low throughput when compared to the broader site water balance, including TSF decant recovery and process water storage. The assessment notes that the RO plant brine stream is returned to the process water pond and reused within the processing circuit, meaning it is contained within the existing closed-loop water management system and does not introduce a new discharge pathway or increase environmental risk.</p> <p>Importantly, environmental risk associated with the RO plant is not dependent on achieving specific feed or TDS concentrations, but rather on containment of process streams within lined and controlled infrastructure (e.g. process water pond), reuse of water within the processing circuit, and implementation of existing operational and monitoring controls governing emissions and discharges.</p> <p>Given that the specified TDS values were derived from manufacturer specifications and are not environmental performance limits, the RO plant discharge is retained within the closed-loop processing system, and environmental risks are appropriately managed through containment and reuse rather than specific water quality setpoints, the department considers that inclusion of prescriptive TDS input/output values in the licence is not necessary for environmental regulation.</p> <p>Accordingly, the licence will be amended to remove the specified TDS parameters, with broader operational requirements and existing environmental controls considered sufficient to manage risks associated with the RO plant.</p> <p>The department accepts the applicant's request to amend the wording of the cyanide storage requirement to "2 x 150 kL tanks or equivalent".</p> <p>This decision report assesses the additional cyanide storage as an increase in storage capacity to support processing throughput, rather than a change in the nature of the activity or environmental risk profile. The assessment highlights that environmental risk associated with cyanide storage is primarily managed through compliance with relevant standards (e.g. AS/NZS 4452), storage within engineered bunding with sufficient containment capacity (<math>\geq 110-120\%</math> of the largest tank), and integration within an existing controlled reagent storage area with established handling and operational procedures.</p> <p>The department therefore considers that environmental risk is governed by total storage volume, containment integrity, and compliance with design and operational standards, rather than the precise configuration or individual size of tanks. On this basis, the requested wording change to "2 x 150 kL tanks or equivalent" is acceptable, as it allows procurement flexibility while maintaining the intended storage capacity and ensuring that environmental risks are appropriately controlled.</p>
<p>Condition 7</p>	<p>Aurene requests that the</p>	<p>The department accepts the applicant's request to amend the wording to allow certification by a suitably qualified</p>

Condition	Summary of applicant's comment	Department's response
	<p>specificity of engineer be removed or changed from 'Geotechnical' or 'Civil' engineer to 'Engineer' or 'Metallurgical or Processing Engineer'.</p> <p>Justification: Aurene has engineers in-house which can conduct the checks required after construction for efficiency and compliance requirements.</p>	<p>"engineer", rather than limiting this requirement to a 'geotechnical' or 'civil' engineer. A corresponding definition is included in the Definitions section of the licence to provide greater context to engineer certification requirements.</p> <p>This decision report demonstrates that compliance reporting requirements are intended to verify that infrastructure has been constructed in accordance with approved design specifications and is fit for purpose, rather than to prescribe a specific engineering discipline where this is not critical to environmental risk management. The assessment recognises that the proposal includes a range of infrastructure types across the premises (e.g. processing plant equipment, pipelines, reagent storage and ancillary systems), many of which are operational or process-related rather than purely geotechnical or civil in nature.</p> <p>The department also notes that the applicant has demonstrated management systems, operational capability, and in-house technical expertise to operate and maintain the facility, and that different infrastructure components may reasonably require review by engineers with different specialisations (e.g. processing, or mechanical), and flexibility in the type of suitably qualified engineer does not materially increase environmental risk, provided that the certifying individual is appropriately qualified and experienced for the relevant infrastructure. Importantly, where geotechnical certification is critical to environmental risk management (e.g. TSF embankment integrity and critical containment infrastructure), this requirement remains explicitly specified and is not affected by this proposed change.</p> <p>On this basis, the department considers that allowing certification by a suitably qualified "engineer" is appropriate and consistent with the risk-based approach outlined in this decision report.</p>
<p>Former condition 19 (including Table 5) and condition 20 (related to decant water monitoring)</p>	<p>Aurene requests that these are removed.</p> <p>Justification: testing of decant water monthly which is regularly recycled through the plant is not going to produce useful data for monitoring potential environmental impacts as this water is in a controlled closed system.</p>	<p>The department accepts the applicant's request to remove Condition 19 (including Table 5) and Condition 20 relating to decant water monitoring from the licence.</p> <p>This decision report identifies that decant water generated within the TSF is recovered and returned to the processing plant for reuse as part of a closed-loop water management system. The assessment further demonstrates that this water stream is contained entirely within engineered infrastructure (TSF, pipelines, and lined process water pond) and does not constitute a direct discharge to the environment under normal operating conditions.</p> <p>This decision report also confirms that environmental risks associated with the TSF and process water system are primarily managed through containment controls (lined ponds, bunding, TSF design and underdrainage systems), operational controls (decant recovery, water reuse, and freeboard management), and monitoring of environmental receptors, particularly groundwater and vegetation health, which provide a more direct and reliable indication of any potential off-site impacts.</p> <p>On this basis, removal of Condition 19 (including Table 5) and Condition 20 does not reduce the department's ability to assess or manage environmental risk, as key risks are already addressed through infrastructure requirements, operational controls, and receptor-based monitoring.</p>
<p>Condition 24 (Table 6):</p>	<p>Aurene requests that Vegetation Condition Monitoring for IWL/TSF surrounding vegetation within</p>	<p>The department accepts the applicant's request to amend the vegetation condition monitoring frequency from annually to biennially.</p> <p>This decision report identifies vegetation monitoring as an indicator-based monitoring control, intended to supplement</p>

Condition	Summary of applicant's comment	Department's response
	<p>500 m becomes a biennial (once every two years) occurrence.</p> <p>Justification: Weekly and monthly checks through visual and chemical analysis (groundwater and tailings) already take place.</p> <p>Aurrene believes that a biennial Vegetation Condition Monitoring event will not significantly increase environmental impact with current controls in place.</p>	<p>primary controls rather than act as the sole mechanism for identifying potential impacts. This assessment demonstrates that environmental risks to vegetation surrounding the IWL/TSF are already managed through a combination of engineered containment controls (TSF design, freeboard management, lined process water pond), operational controls (decant water recovery and reuse, dust suppression, inspection regimes), and regular monitoring of key pathways, particularly groundwater monitoring and TSF water balance monitoring.</p> <p>This decision report further highlights that groundwater monitoring bores located around the TSF provide an early warning system for any changes in water levels or quality associated with TSF operations, and routine inspections and operational monitoring are undertaken at a much higher frequency (daily, weekly, and monthly), addressing potential issues prior to manifestation as vegetation stress.</p> <p>In this context, vegetation health monitoring is considered a lagging indicator of environmental impact, and the department acknowledges that reducing the frequency of this monitoring will not materially affect the overall environmental risk profile, given the presence of more sensitive and frequent monitoring controls. Additionally, the environmental setting described in this decision report supports a lower monitoring frequency, noting that groundwater is deep, saline, and of low sensitivity, and the likelihood of rapid or widespread vegetation impacts is reduced under the controlled operational conditions at the premises.</p> <p>On balance, the department considers that existing controls and monitoring programs provide sufficient and timely detection of potential impacts, and biennial vegetation condition monitoring remains appropriate to confirm longer-term environmental performance without compromising environmental protection.</p>