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	L7750/2001/10
Licence Holder	Evolution Mining (Mungari) Pty Ltd
ACN	002 124 745
File Number	APP-0030521
Premises	Mungari Gold Project COOLGARDIE WA 6429 Legal description – Part mining tenements M15/829, M15/830, M15/1741, M15/1408, M15/1287, M15/688, L15/228, L15/246, L15/227 and M15/1407 As defined in Schedule 2 of the Revised Licence
Date of Report	12 December 2025
Decision	Revised licence granted

Table of Contents

1. Decision summary

Licence L7750/2001/10 is held by Evolution Mining (Mungari) Pty Ltd (Licence Holder) for the Mungari Gold Project (the Premises), located within part of mining tenements M15/829, M15/830, M15/1741, M15/1408, M15/1287, M15/688, L15/228, L15/246, L15/227 and M15/1407. Licence L7750/2001/10 permits the processing and beneficiation of ore (Category 5), mine dewatering (Category 6), screening of material (Category 12) and putrescible landfill (Category 89).

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during construction and operation of the Premises. As a result of this assessment, Revised Licence L7750/2001/10 has been granted.

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

2. Scope of assessment

2.1 Regulatory framework

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

2.2 Application summary

On 22 August 2025, the Licence Holder submitted an application to the department to amend Licence L7750/2001/10 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Inclusion of the Cutters Ridge In-pit Tailings Storage Facility (TSF) and an associated expansion of the premises boundary, assessed and approved under works approval W6862/2023/1;
- Inclusion of the Mungari TSF Cell 4 Stage 3, assessed and approved under works approval W6364/2020/1;
- Inclusion of the expanded Mungari Processing Plant, assessed and approved under works approval W6803/2023/1 and
- Inclusion of construction and operation requirements for Mungari TSF Cells 3 and 4, stages 4-10 embankment raises, not previously assessed.

This amendment is limited only to the changes as listed above. No changes to the aspects of the existing Licence relating to the design or throughput capacity of the existing categories has been proposed.

2.2.1 Works Approval W6862/2023/1 – Cutters Ridge In-Pit TSF

Works approval summary

On 12 October 2023, Evolution Mining (Mungari) Pty Ltd submitted an application for a works approval to convert the Cutters Ridge Pit into an in-pit TSF (CRIPTSF) for the deposition of tailings. The CRIPTSF is located on mining tenement M15/1827, approximately 6 km west of the Mungari processing plant and consists of two existing pits that have ceased mining operations (Stage 2 and Stage 3).

The CRIPTSF was constructed with a water reclamation decant system including a skid mounted pump and floating suction turret and a monitoring network of six groundwater bores to monitor both the shallow and deep aquifers. A tailings and return water pipeline were also constructed, connecting the CRIPTSF to the Mungari processing plant. The pipelines are located alongside the existing haul road with containment bunds along both sides of the pipeline corridor.

For most of the operations (initial stage), tailings will be deposited from a single discharge point at one end of each Stage 2 and Stage 3 pit. During the last few months of operations (final stage), tailings will be deposited into each pit from up to three discharge points.

Compliance

On 14 August 2024, an Environmental Compliance Report was submitted to the department to demonstrate compliance with the construction requirements associated with the groundwater monitoring bores. On 1 November 2024, compliance with conditions 2 and 5 of works approval W6862/2023/1 was determined. It was noted that the four bores (MB-04D, MB04-S, MB06-D, and MB06S) had been relocated from the original approved location due to access constraints.

On 23 March 2025, an Environmental Compliance Report was submitted to the department to demonstrate compliance with construction requirements associated with the tailings and decant return pipelines and TSF pond decant system. On 7 October 2025, after a desktop assessment and review of the report, the construction of the infrastructure was found partially compliant. Instead of the initially proposed floating pontoon-mounted pump, a skid mounted pump and a floating suction turret was installed instead. Additionally, the Stage 3 pump has not yet been installed as it is to be relocated once deposition into Stage 2 has been completed.

Characteristics of tailings

Geochemical testing of tailings from the Mungari processing plant (fed by White Foil and Frog's Leg pits) confirmed the presence of hypersaline water with Total Dissolved Solids (TDS) ranging from 183,231 to 200,320 mg/L and slightly alkaline pH levels. These values are comparable to local groundwater but show higher concentrations of selenium (up to 780 µg/L) and arsenic (up to 240 µg/L).

Physical testing of the tailings material showed it to be fine-grained, low-plasticity clayey silt, capable of achieving a dry density of 1.3 t/m^3 during operations, and final settled dry density of between about 1.6 and 1.7 t/m3 post operations. Water balance modelling indicated that seepage losses would be minimal based on the pit wall and pit floor permeability of 5.0 x 10^{-8} m/sec/m^2, and the proposed water recovery system is expected to reclaim 85% of slurry water for reuse in the Mungari plant. The tailings fed to the CRIPTSF have the following properties listed in Table 1.

Table 1: Tailings properties

Parameter	Value
Total dissolved solids (TDS)	183,231 to 200,320 mg/L
Solids content	55%
pH	7.1 to 7.4
Deposited density	1.3 t/m^3 (dry density, conservatively adopted)

Parameter	Value
Weak Acid Dissociable Cyanide (WAD CN)	50 mg/L
Total cyanide (CN)	200mg/L

2.2.2 Works Approval W6364/2020/1 – Mungari TSF Cell 4 Stage 3

On February 2020, the Licence Holder submitted an application for a works approval for the construction of a new TSF Cell 3 and Cell 4.

The TSF is a conventional rectangular paddock-style facility, comprising two cells separated by a cell-dividing causeway. Each cell consists of a decant causeway and a central decant tower, from which supernatant water is pumped from the TSF to the processing plant via a decant return system for re-use.

The TSF was constructed adjacent to the west of existing TSF1 and 2 and covered a total footprint area of 197.1 ha. The anticipated tailings storage capacity of the TSF is 25 Mt. Construction was proposed to be undertaken in ten stages over a ten-year period (Table 2). Each stage comprised an embankment lift, providing an annual tailings storage capacity of approximately 2.5 Mt.

Stage 1 consisted of the development of a low permeability soil liner, multi-zoned perimeter embankment and a starter embankment. Stage 2 comprised of the development of a downstream lift, followed by a centreline lift in Stage 3. Proposed upstream lifts will be constructed from Stages 4 to 10.

Stages 1-3 for TSF Cell 3 have been constructed and operations are authorised under the existing licence L7750/2001/10. Stages 1-3 for TSF Cell 4 have also been constructed under works approval W6364/2020/1, however the existing licence only authorises operation up to stage 2. This licence amendment includes the operation of TSF Cell 4 Stage 3 and the construction and operation of stages 4-10 for TSF Cells 3 and 4. Table 2 shows the specifications for historical and future stages.

Table 2: Staged TSF construction

Stage	Deposition Period	Tonnage (Mt)	Cumulative Tonnage (Mt)	Achieved Average Densities (t/m^3)	Crest Elevation	Crest Raise Height (m)
1	Year 1 **(completed)**	~2.5	2.5	1.30	347.4	Max 4.4
2	Year 2 **(completed)**	~2.5	5.0	1.34	349.1	1.70
3	Year 3 **(completed)**	~2.5	7.5	1.36	350.7	1.60
4	Year 4	~2.5	10.0	1.38	352.4	1.65
5/6	Years 5 & 6	~5	15	1.39	355.8	1.70
7/8	Years 7 & 8	~5	20.0	1.39	359.4	1.80
9/10	Years 9 & 10	~5	25.0	1.39	363.2	1.90

Compliance

A Critical Containment Construction Report was submitted to the department on 5 June 2025 for the construction of TSF Cell 4 Stage 3. On 19 June 2025, the department found the construction of the lift to be compliant with relevant construction conditions. The outstanding requirement of the piezometer installation was also addressed in this report and found as compliant with the works approval conditions.

2.2.3 Works Approval W6803/2023/1 – Mungari Mill Upgrade

Works approval summary

On 31 March 2023, the Licence Holder submitted an application for a works approval to undertake construction, commissioning and time-limited operations of upgrades to the Mungari Mill and associated infrastructure. Mungari Gold Operations currently extracts oxide, transitional and fresh ore from open pits and underground mines in the region, which is then processed at the Mungari Processing Plant (Mungari Mill). The purpose of the upgrade was to allow for the increased throughput to 5.0 million tonnes per annum (Mtpa). Ore treated at the plant will include ore from the existing operations mines, Frog's leg, RHP, Raleigh and Kundana underground mines and Paradigm open pit.

The additional tailings produced at the processing plant will be distributed approximately evenly between the existing TSF cells 3 and 4 (constructed under works approval W6364/2020/1) and the Cutters Ridge In Pit TSF (constructed under works approval W6862/2023/1).

Compliance

The Licence Holder submitted an Environmental Compliance Report on 25 March 2025 to address compliance with the construction requirements associated with the mill upgrade. Compliance was determined by the department on 24 October 2025 with the noting of a few minor deviations from the work approval conditions. These deviations included a change to the leach tank's location, as well as the water service tanks and caustic dosing pump not being installed due to the determination of existing infrastructure being sufficient. Additionally, the second pump for hydrochloric acid was not installed due to there being an upgrade to the existing pump instead.

2.2.4 Mungari TSF Cells 3 and 4 – Stages 4-10

The proposed upstream lifts (stages 4-10) for TSF Cells 3 and 4 have been included in this licence amendment. The proposed works are intended to facilitate tailings deposition of approximately 25 Mt over a 10-year mine life. The main design enhancement is the use of tailings material, rather than solely borrow material, for partial construction of the embankments. The Licence Holder has stated that suitability testing, conducted on the tails material, confirms their appropriateness for use in embankment construction.

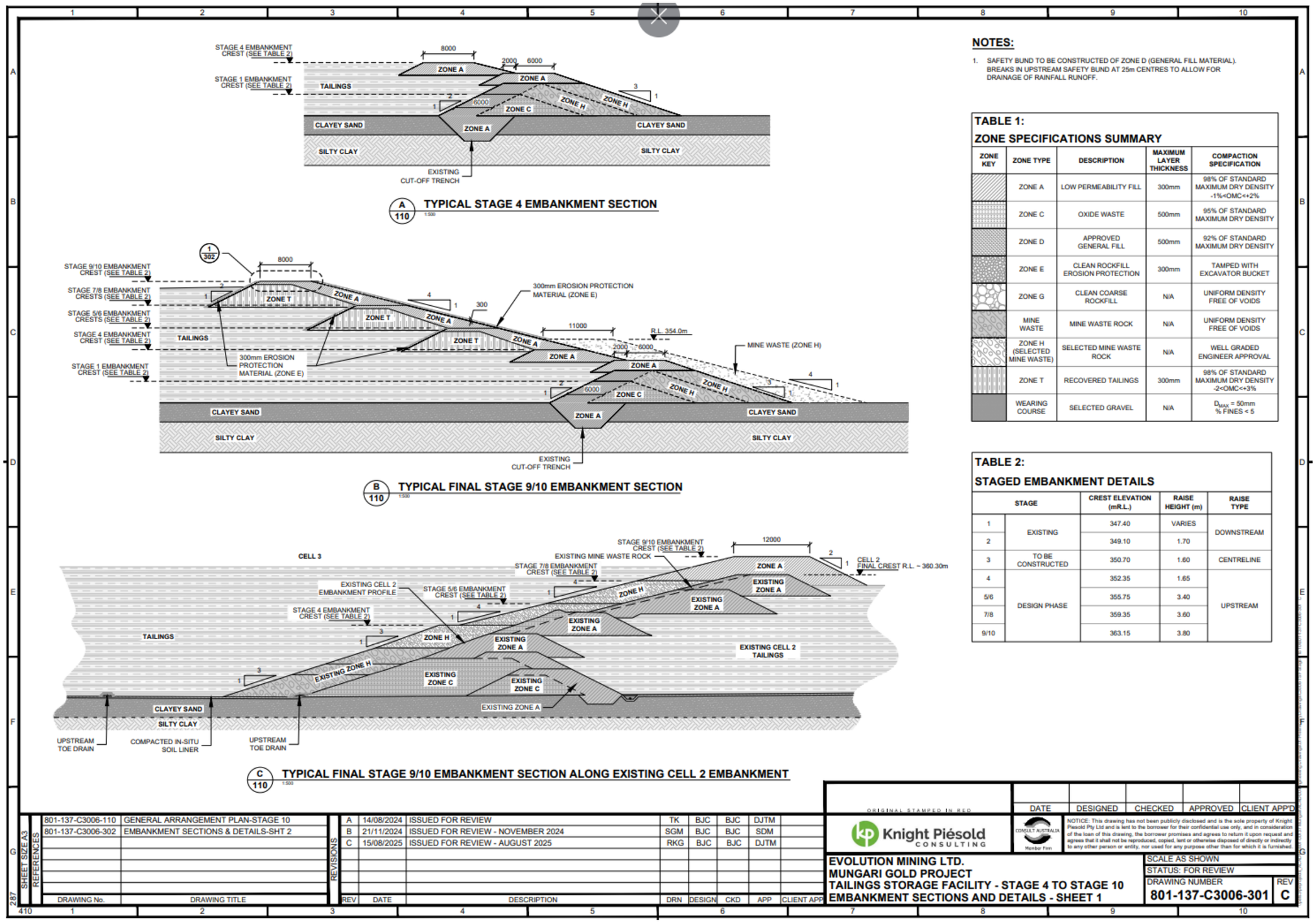
The stage 4 through to stage 10 embankments will be built via upstream construction methods, with an upstream slope of 2H:1V and downstream slope of 4H:1V, reaching crest RL363.15 m at Stage 10. The divider embankment and decant causeways will be raised at each stage as shown in Figures 2 and 3. During stage 5 additional fill is proposed to be placed to widen the bench to 10 m and flatten the Stage 5 embankment slope to 1V:4H. A crest width of 8 m will be provided for each stage. Figures 1 to 5 show the embankment design and associated details.

Since the embankments will be constructed in stages, the Licence Holder has proposed the monitoring of the performance of the tailings to allow the timing of future embankment stages to be modified to suit the measured performance of the tailings in the storage facility.

Seepage and water balance

The key components of the existing seepage control system include a low-permeability liner across the TSF basin, a cut-off trench excavated along the upstream toe of the main embankments to reduce seepage, and an underdrainage collection system. This system consists of a circular piped drainage system beneath each supernatant pond which reports to a centrally located underdrainage sump. The design consists of three toe drains, constructed along the upstream toe of the perimeter embankments. The purpose of the drains is to reduce the phreatic surface in the tailings mass adjacent to the embankments to improve stability and reduce seepage and promote the drying and consolidation of the tailings. Four toe drain collection sumps located in the internal corners of each cell will collect solution from the toe drains and collected solution is abstracted by a pump.

Water balance modelling was developed to manage and predict water flows throughout the operational life of the premises. The model estimates tailings settlement densities, filling rates for tailings solids, supernatant pond volumes under various rainfall conditions and assesses water recovery and losses. The inputs incorporated include water in tailings slurry from the processing plant and rainfall runoff from the tailings and pond surface. Outputs from the TSF included evaporation losses, water returned to the plant and seepage losses. The results from the modelling show that the TSF has sufficient capacity to manage stormwater, including during extreme events, while maintaining regulatory freeboard.



NOTES:

1. SAFETY BUND TO BE CONSTRUCTED OF ZONE D (GENERAL FILL MATERIAL). BREAKS IN UPSTREAM SAFETY BUND AT 25m CENTRES TO ALLOW FOR DRAINAGE OF RAINFALL RUNOFF.

TABLE 1:
ZONE SPECIFICATIONS SUMMARY

ZONE KEY	ZONE TYPE	DESCRIPTION	MAXIMUM LAYER THICKNESS	COMPACTION SPECIFICATION
	ZONE A	LOW PERMEABILITY FILL	300mm	98% OF STANDARD MAXIMUM DRY DENSITY -1%<OMC<+2%
	ZONE C	OXIDE WASTE	500mm	95% OF STANDARD MAXIMUM DRY DENSITY
	ZONE D	APPROVED GENERAL FILL	500mm	92% OF STANDARD MAXIMUM DRY DENSITY
	ZONE E	CLEAN ROCKFILL EROSION PROTECTION	300mm	TAMPED WITH EXCAVATOR BUCKET
	ZONE G	CLEAN COARSE ROCKFILL	N/A	UNIFORM DENSITY FREE OF VOIDS
	MINE WASTE	MINE WASTE ROCK	N/A	UNIFORM DENSITY FREE OF VOIDS
	ZONE H (SELECTED MINE WASTE)	SELECTED MINE WASTE ROCK	N/A	WELL GRADED ENGINEER APPROVAL
	ZONE T	RECOVERED TAILINGS	300mm	98% OF STANDARD MAXIMUM DRY DENSITY -2<OMC<+3%
	WEARING COURSE	SELECTED GRAVEL	N/A	D_{MAX} = 50mm % FINES < 5

TABLE 2:
STAGED EMBANKMENT DETAILS

STAGE		CREST ELEVATION (mR.L.)	RAISE HEIGHT (m)	RAISE TYPE
1	EXISTING	347.40	VARIES	DOWNSTREAM
2		349.10	1.70	
3	TO BE CONSTRUCTED	350.70	1.60	CENTRELINE
4	DESIGN PHASE	352.35	1.65	UPSTREAM
5/6		355.75	3.40	
7/8		359.35	3.60	
9/10		363.15	3.80	

REFERENCES	DRAWING No.	DRAWING TITLE
SHEET SIZE A3	801-137-C3006-110	GENERAL ARRANGEMENT PLAN-STAGE 10
	801-137-C3006-302	EMBANKMENT SECTIONS & DETAILS-SHT 2

REVISIONS	REV	DATE	DESCRIPTION	DRN	DESIGN	CKD	APP	CLIENT APP
	A	14/08/2024	ISSUED FOR REVIEW	TK	BJC	BJC	DJTM	
	B	21/11/2024	ISSUED FOR REVIEW - NOVEMBER 2024	SGM	BJC	BJC	SDM	
	C	15/08/2025	ISSUED FOR REVIEW - AUGUST 2025	RKG	BJC	BJC	DJTM	

ORIGINAL STAMPED IN RED

	DATE	DESIGNED	CHECKED	APPROVED	CLIENT APP'D

Knight Piésold CONSULTING

CONSULT AUSTRALIA Member Firm

EVOLUTION MINING LTD.
MUNGARI GOLD PROJECT
TAILINGS STORAGE FACILITY - STAGE 4 TO STAGE 10
EMBANKMENT SECTIONS AND DETAILS - SHEET 1

SCALE AS SHOWN
STATUS: FOR REVIEW
DRAWING NUMBER 801-137-C3006-301
REV C

Figure 1: Embankment sections and details

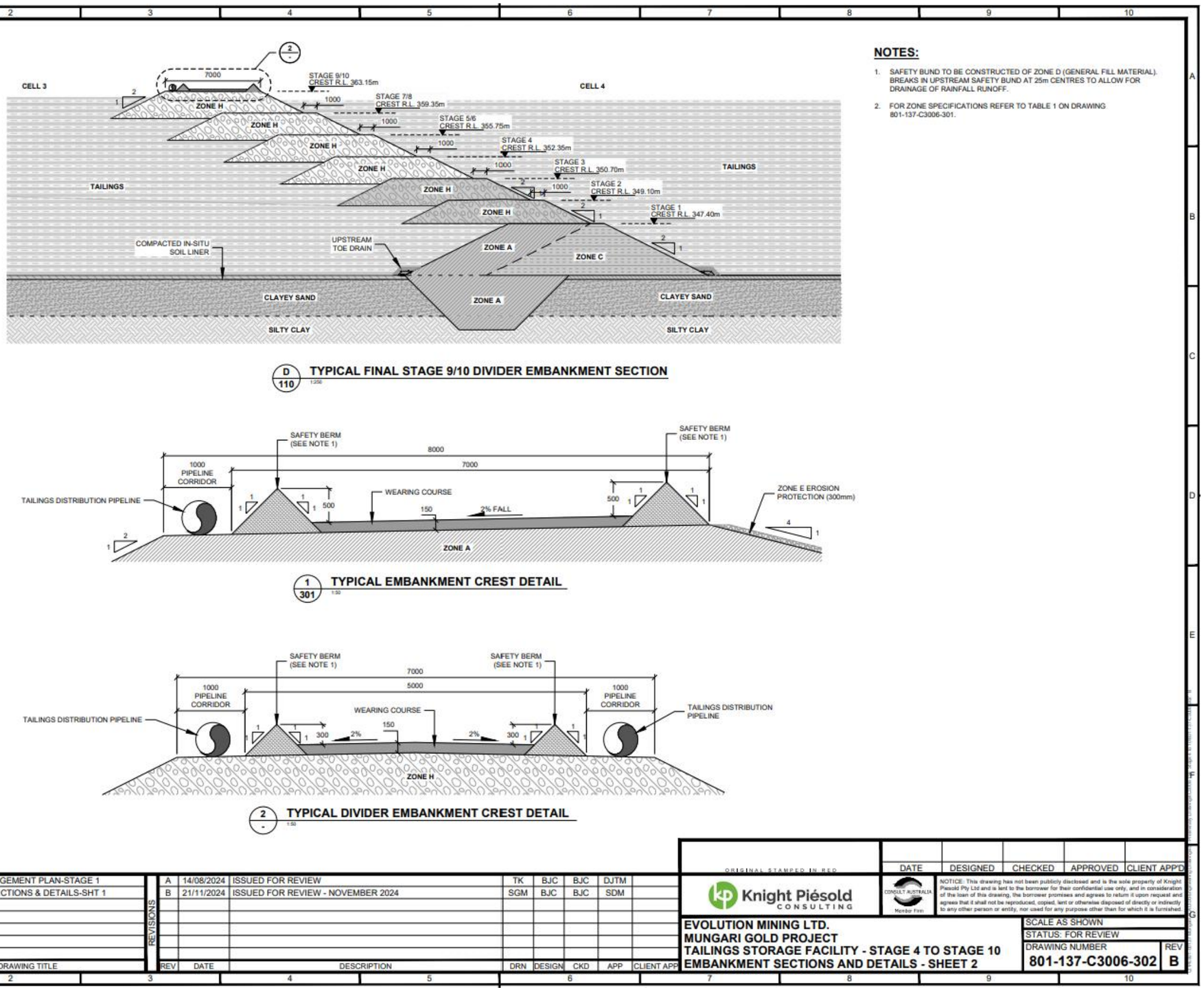


Figure 2: Divider embankment and crest details

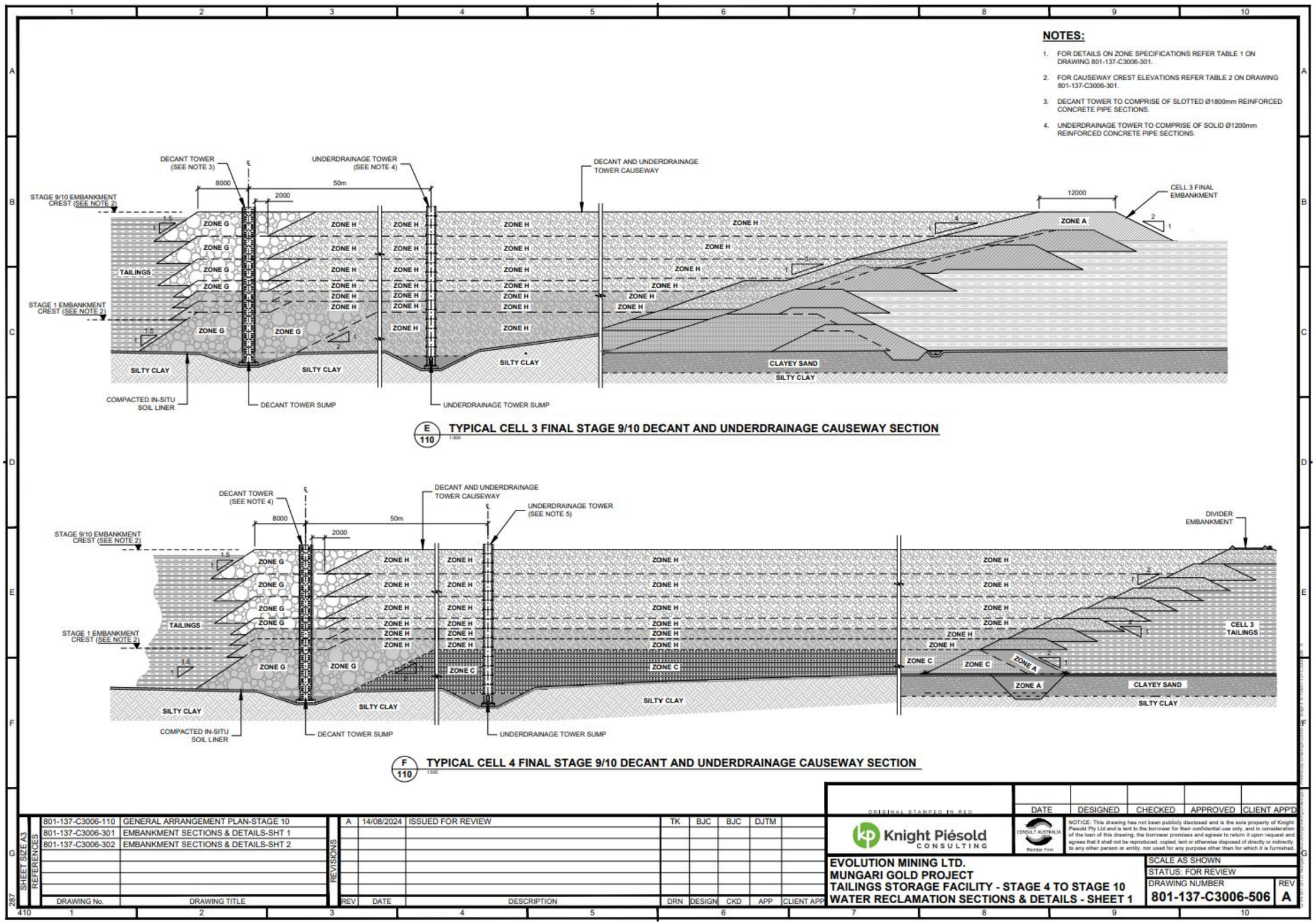


Figure 3: Decant and underdrainage causeway section

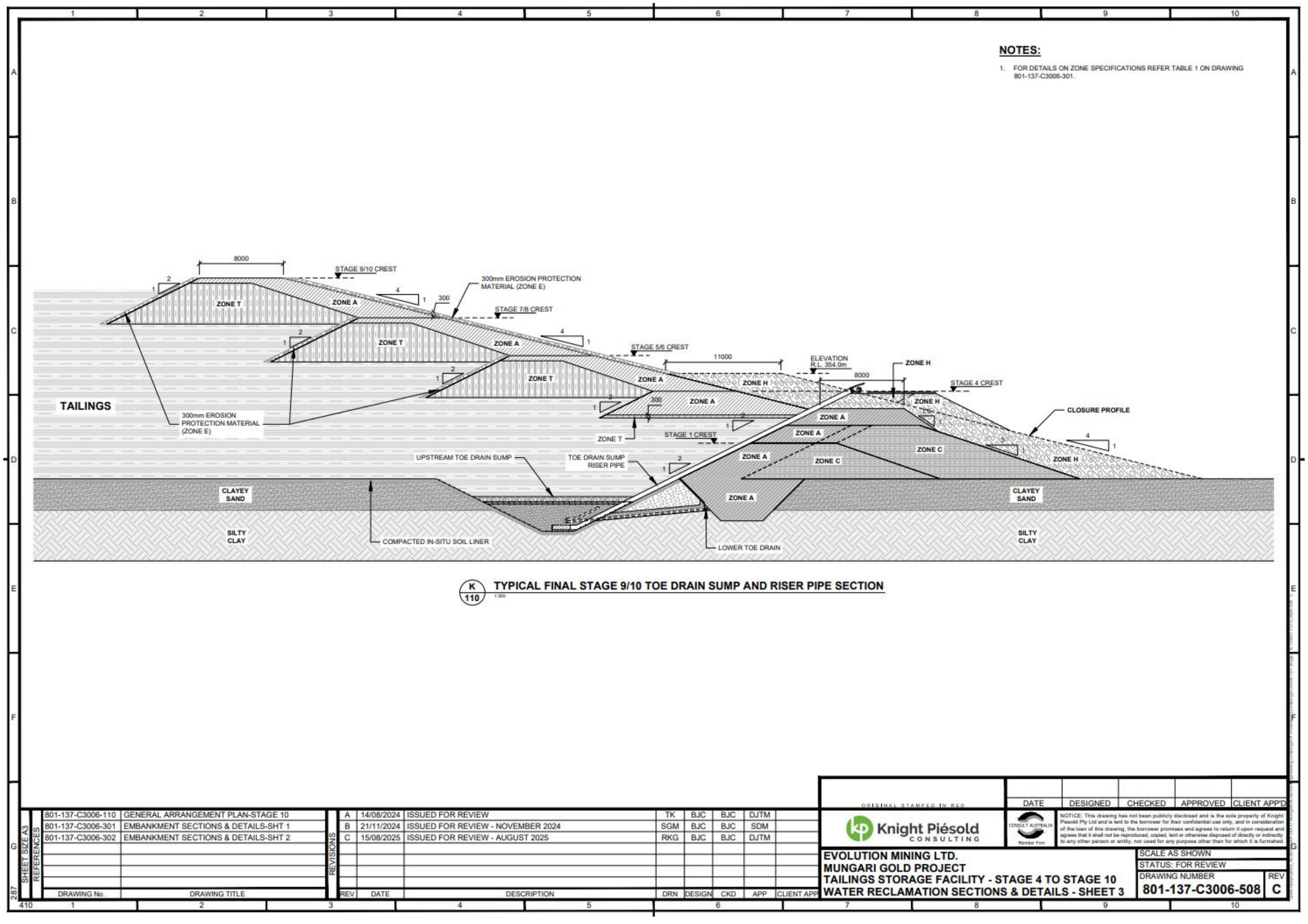
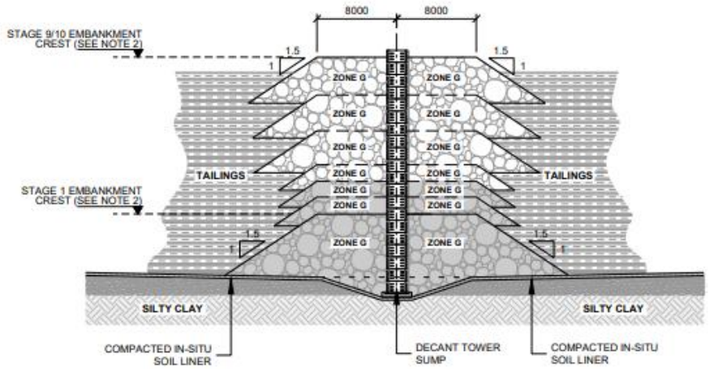


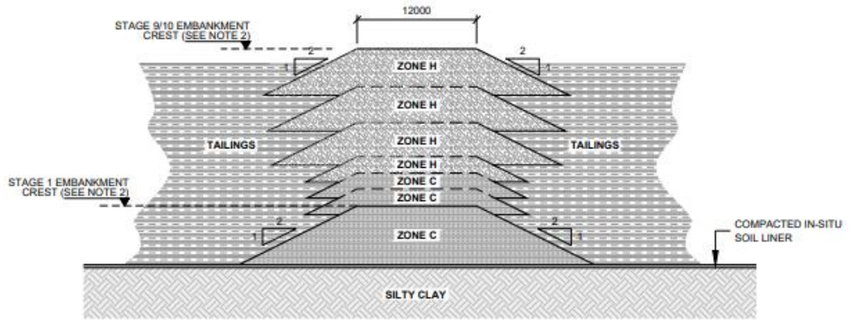
Figure 4: Toe drain sump and riser pipe section



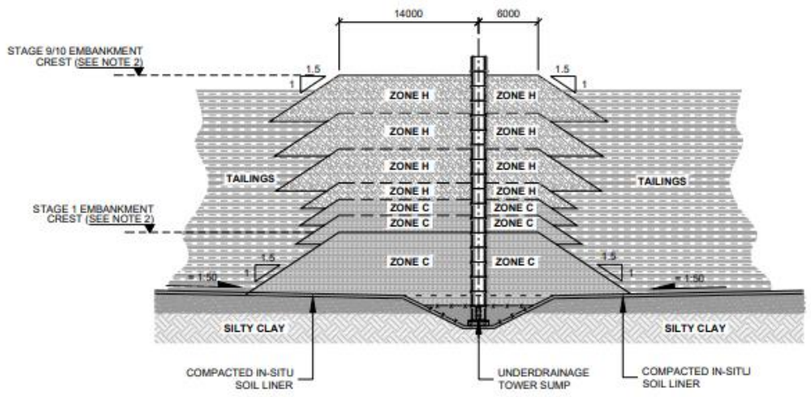
G/110 TYPICAL FINAL STAGE 9/10 DECANT TOWER SECTION
1:500

NOTES:

1. FOR DETAILS ON ZONE SPECIFICATIONS REFER TABLE 1 ON DRAWING 801-137-C3006-301.
2. FOR CAUSEWAY CREST ELEVATIONS REFER TABLE 2 ON DRAWING 801-137-C3006-301.
3. DECANT TOWER TO COMPRISE OF SLOTTED Ø1800mm REINFORCED CONCRETE PIPE SECTIONS.
4. UNDERDRAINAGE TOWER TO COMPRISE OF SOLID Ø1200mm REINFORCED CONCRETE PIPE SECTIONS.



J/110 TYPICAL FINAL STAGE 9/10 DECANT AND UNDERDRAINAGE TOWER CAUSEWAY SECTION
1:500



H/110 TYPICAL FINAL STAGE 9/10 UNDERDRAINAGE TOWER SECTION
1:500

SHEET SIZE A3 REFERENCES			REVISIONS									
	801-137-C3006-110	GENERAL ARRANGEMENT PLAN-STAGE 10	A	14/08/2024	ISSUED FOR REVIEW	TK	BJC	BJC	DJTM			
	801-137-C3006-301	EMBANKMENT SECTIONS & DETAILS-SHT 1										
	801-137-C3006-302	EMBANKMENT SECTIONS & DETAILS-SHT 2										
	DRAWING No.	DRAWING TITLE	REV	DATE	DESCRIPTION	DRN	DESIGN	CKD	APP	CLIENT APP		

ORIGINAL STAMPED IN RED

	DATE	DESIGNED	CHECKED	APPROVED	CLIENT APP'D

Knight Piésold CONSULTING

CONSULT AUSTRALIA Member Firm

EVOLUTION MINING LTD.
MUNGARI GOLD PROJECT
TAILINGS STORAGE FACILITY - STAGE 4 TO STAGE 10
WATER RECLAMATION SECTIONS & DETAILS - SHEET 2

SCALE AS SHOWN
STATUS: FOR REVIEW
DRAWING NUMBER 801-137-C3006-507
REV A

Figure 5: Underdrainage and decant tower section

3. Legislative context

3.1 Mining Act 1978

The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), now Department of Mines, Petroleum and Exploration (DMPE), approved the Mining Proposal for the CRIPTSF (REG ID 120616) on 14 December 2023 under the *Mining Act 1978*. DMPE conducted a geotechnical assessment review process and assigned CRIPTSF a hazard category of "Low – Category 3."

DMPE also approved a mining proposal related to the Mungari Mill upgrade on 23 June 2023 (REG ID 117914). An application was submitted to DMPE on 06 June 2025 for TSF Cells 3 and 4 stages 4-10 (REG ID 500639). This application was then approved on 28 August 2025.

3.2 Aboriginal Heritage Act 1972 / Native Title Act 1993

The Marlinyu Ghoorlie people (Tribunal file no. WC2017/007 - registered) are the Native Title claimants of the area as determined under the *Native Title Act 1993*. The Maduwongga people were also Native Title claimants but have since had this claim deregistered (Tribunal file no. WC2017/001-deregistered). Evolution Mining currently have Native Title agreements in place with both the Marlinyu Ghoorlie people and the Maduwongga people. Ongoing consultation is undertaken with both groups in relation to all upcoming projects including the Mungari Mill Upgrade.

Department of Planning, Lands and Heritage (DPLH) were advised of the proposal to convert the Cutter Ridge Pit into an in-pit tailings storage facility for the deposition of tailings (W6862/2023/1). DPLH provided comments regarding the proposal on 5 January 2024. DPLH advised that the proposed clearance and infrastructure area intersects with the public boundary (but not actual boundary) of Aboriginal Lodged Place ID 34415 (Pulyinyaminya Cave). DPLH stated the proposed works would not have any impact on the cave and therefore no approvals under the *Aboriginal Heritage Act 1972* (AH Act) would be required. Additionally, due to the limited Aboriginal heritage surveys that have been conducted over the entirety of the pipeline, the applicant should be aware of the obligations under the Act should previously unreported Aboriginal heritage come to light.

During the assessment of the Mungari Mill upgrade under Works Approval W6803/2023/1, DPLH was contacted due to the premises overlapping with five Aboriginal Sites and Heritage places under the AH Act. DPLH advised that the Eastern Waste Landform Area intersects with Aboriginal heritage place ID 18384 (Kopai Lakes). Based on information held by DPLH, no approvals under the AH Act are required. Both claimants (Marlinyu Ghoorlie and Maduwongga) were advised of the proposal during the assessment of the Mungari Mill upgrade and no comments were made. The Kurrawang Aboriginal Community, located 9.51 km from the premises, contacted the department regarding the proposal on 4 July 2023. The Kurrawang Aborignal Community advised that they had some concerns regarding the proposal which were addressed in Appendix 2 of the W6803/2023/1 decision report.

It is noted that the Licence Holder is required to meet its obligations under the AH Act which is a separate regulatory process to that of applying for a licence amendment under Part V of the EP Act. The granting of the amendment does not remove the obligation which Evolution Mining (Mungari) Pty Ltd has under the under the AH Act.

4. 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.

4.1 Source-pathways and receptors

4.1.1 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			
Dust	Earthworks, vehicle movements and construction of stages 4-10 for Mungari TSF Cells 3 and 4	Air/windborne pathway	Watercart retained onsite, wetting down of roads and stockpiles when required.
Operation			
Decant water and/or tailings spill	Operation failure of decant pipeline and/or tailings delivery pipeline (spills/leaks)	Direct discharge/runoff	• Pipeline operated within containment trench. • Telemetered flow meters on both the decant and tailings slurry lines • Daily inspections of pipeline integrity • Scour pits along the length of the pipeline with sufficient volume to contain 24hrs of flow • Pipeline to be double walled along sections where seasonal rainfall is possible • Operations managed in accordance with TSF Operating Manual. • In the event of a spill, the Spill Management Procedure will be followed.

Emission	Sources	Potential pathways	Proposed controls
	Deposition of tailings at the Cutters Ridge In-Pit TSF	Seepage through base of pit	• Low permeability pit base • Daily inspection of TSF, decant system and TSF perimeter • Monitoring the water recovery and the corresponding size of the decant pond and dry beach, by quarterly drone surveys or similar. • Groundwater monitoring bores and monitoring program. • Seepage modelling. • Supernatant water pond maintained at lowest level reasonably practical via pumping back to the Mungari Mill. • The TSF perimeter inspected on a daily basis for any signs of seepage as a requirement of the TSF Maintenance Program. • Vegetation monitoring at the TSF vicinity is carried out to identify any seepage risks.
Decant water and/or tailings spill	Deposition of tailings at the Cutters Ridge In-Pit TSF	Seepage through base of pit	
		Overtopping of the pit	• A minimum freeboard limit of 500mm is maintained in TSFs to prevent overtopping and account for the risk of high rainfall / flood events. • Ability to decrease deposition flowrate by increasing flowrate to other TSF Cells or Cutters Ridge TSF. • TSF Cells volume availability is known and is recorded regularly when actively discharging. • Daily visual inspection of freeboard level. • Decant water return network. • In the event of a tailings spill, the Spill Management Procedure will be followed. • Operations managed in accordance with TSF Operating Manual • Sufficient stormwater storage capacity of TSF to accommodate all design storm event including 1:100-year AEP, 72-hour storm event.

Emission	Sources	Potential pathways	Proposed controls
Tailings	Operation of a new dual stage pumping system and associated pipelines	Spills/leaks	• The applicant has advised that in the event of a tailings spill: • Bunding and v-drains will assist to contain the spill and the isolation valves will be turned on by the person inspecting the pipeline; • Repairs will be carried out on the pipeline and any bunding that may have been damaged will be reconstructed to the standard by the service crew; • Earthmoving equipment will be used by the service crew to remove contaminated soil. Soil sampling will be carried out by the Mungari Environment Department to assess the extent of the contamination; • Incident reports will be provided in accordance with Section 72 of the *Environmental Protection Act 1986* should any environmental harm occur; and • Rehabilitation of the affected area will be carried out by the licence holders Environmental Department if required.
Tailings	Operation of a new dual stage pumping system and associated pipelines	Spills/leaks	
Contaminated stormwater	Deposition of tailings at the Cutters Ridge In-Pit TSF	Stormwater runoff around Cutters Ridge In-Pit TSF and overtopping	• Bunding constructed around infrastructure • Stormwater storage capacity to accommodate a 1:100-year AEP, 72- hour storm event (~0.2m) • Maintain minimum total freeboard of 0.5m (between stormwater level and minimum pit rim level) • Adequate uncleared buffer zones retained between disturbed areas and natural drainage lines.
Dust	Stockpiles of ore, crushing/ mills/ screening, conveyors / transfer points. Loading of material onto the haul trucks. The movement of vehicles. Wind erosion from surfaces such as the waste dump, the ROM pad and roads.	Air / windborne pathway	Dust will be controlled on an as-needs basis by application of water from a water cart. A water cart will be available on site for this purpose. Implementing a progressive rehabilitation program will also reduce the risk of dust generation. **Dust suppression measures using water sprays and other means will be used in the event that:** • High levels of dust are observed. • Strong winds and dry conditions make dust generation likely; or • Complaints about dust are received.

Emission	Sources	Potential pathways	Proposed controls
			Dust suppression fitted to infrastructure in the processing plant include: • Water fogging system for crusher; • Water sprays at end of conveyor onto main ore stockpile; and • Skirtings on conveyors
Air emissions	Gas (LPG) Fuel fired burning equipment (including kilns)	Air / windborne pathway	• Regular dust suppression of dust producing areas; and • Assaying of ore and waste samples to determine dust composition if required.
Contaminated stormwater	Runoff contaminated stormwater from ore stockpiles into surrounding environment	Overland runoff during high rainfall events potentially causing flow into adjacent environment	• Adequate uncleared buffer zones retained between disturbed areas and natural drainage lines; • Upstream surface water diversion; • Minimising disturbance and vehicle movements through the existing tracks; • Storage areas (chemicals, hydrocarbons etc.) located away from, or bunded off from, external surface water flows and flooding; • Sediment laden surface water runoff captured by earth bunding around the perimeter of infrastructure areas, and either discharged (slowly allowing settling) or evaporated / infiltrated on site; and • Bunding including the retaining embankment of the TSF, will be well compacted in layers to limit sediment run-off from face erosion. • Site inspections and regular informal visual checks to ensure appropriate mitigation measures and controls are implemented, and that they are operational and effective.

Emission	Sources	Potential pathways	Proposed controls
Spills / leaks of hydrocarbons and chemicals	Storage of chemicals (new cyanide tank and caustic dosing pump) Hydrocarbon spills or leaks from vehicle and equipment use, or maintenance activities.	Leaching through soil profile to groundwater	• The applicant has advised that in the event of a chemical spill: • The source will be stopped immediately and the spill will be contained with additional bunding from the spill kit that will be in the vicinity; • Any contaminated soil will be removed and disposed of appropriately by the service crew; • Soil and water sampling will be carried out by the Mungari Environment Department to assess the extent of the contamination. Incident reports will be provided in accordance with Section 72 of the *Environmental Protection Act 1986*; • A Spill Management Procedure exists onsite • Chemicals and reagents should be stored in areas with a holding capacity of 110%; • All chemicals and reagents storage areas are required to have spill kits and all chemicals are required to be correctly labelled. Monitoring and housekeeping is carried out regularly; • Pumps and pipelines are inspected and serviced regularly; • Chemical management is included in inductions, training and awareness onsite; • Chemicals may be disposed of offsite by an external provider; • Significant chemical spills leading to environmental harm are reported to relevant authorities within one business day; and • Trained Emergency Response Team onsite.
Spills / leaks of hydrocarbons and chemicals	Storage of chemicals (new cyanide tank and caustic dosing pump) Hydrocarbon spills or leaks from vehicle and equipment use, or maintenance activities.	Leaching through soil profile to groundwater	

4.1.2 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 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 4: Sensitive human and environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Native vegetation / priority flora	**Three vegetation zones identified with Premises:** • Eucalyptus open woodland; • Chenopod shrubland; and • Acacia open shrubland Priority flora *Notisia intonsa* found within Premises boundary, however, no Threatened or Priority flora were identified within the survey area during a detailed flora / vegetation survey undertaken by Botanic Consulting (Botanica 2021)
Priority fauna 22 threatened species have the potential to occur within the area including the Leipoa ocellata (Malleefowl)	Botanic 2021 survey identified a total of 264 terrestrial vertebrate fauna taxa within a 40km radius of the survey area, consisting of 149 bird, 32 mammal, 76 reptile and six amphibian taxa. Botanica 2021 survey found the following significant fauna species potentially occurring in the area: • Grey Falcon (Threatened); • Malleefowl (Threatened); and • Peregrine Falcon.
Underlying groundwater (non-potable purposes)	<u>Groundwater depth</u> The depth to the regional water table ranges from less than 5 m in some playa-lake environments to more than 40 m in elevated areas. The depth to groundwater is greater than 10 m in the CRIPTSF area. <u>Groundwater quality</u> Groundwater in this area is mainly saline to hypersaline, with values ranging around 150,000 mg/L to 250,000 mg/L TDS and pH levels ranging from slightly acidic to neutral. Regional groundwater recharge occurs primarily through up-flowing hydraulic gradient from underlying aquifers,with minimal direct infiltration occurring via rainfall. After periods of intense rainfall, minor perched aquifers may form in the upper saprolite horizon. <u>Nearby groundwater users</u> There are no known other groundwater users within 2km of the proposed activities.

Surface water	Unnamed salt lake - 0.5 km south West Lake - 0.7 km west Cattle Swamp - 2.1 km south Kurrawang Lake - 1.5 km south Kopai Lake - 2.2 km east Greta Lake - 3.1 km northeast Kurrawang White Lake - 5.8 km north east
Cultural receptors	**Distance from activity / prescribed premises**
Aboriginal heritage sites: 1. Kopai Lakes (18384) 2. Mungari TSF – Artefacts / scatter (38309) 3. PIIRA TUKURR – Mythological (846) 4. Mungari 2 – Artefacts / scatter (22897) 5. Pulyinyaminya Cave – Artefacts / scatter, Ceremonial, Rockshelter, Named Place, Natural Feature, Plant Resource (34415) 6. Mungari 1 – Artefacts / scatter (22896) 7. Mungari 8 – Artefacts / scatter (22903) 8. Mungari 5 – Artefacts / scatter (22900) 9. Mungari 4 – Artefacts / scatter (22899)	All items are located within the prescribed premises or within a 1 km buffer of the prescribed premises boundary. The Pulyinyaminya Cave (Item 5) overlaps the CRIPTSF location. This Aboriginal site is listed as a restricted location. However, the Department of Planning, Lands and Heritage (DPLH) has informed DWER that the activities intersects the public boundary of the Pulyinyaminya Cave, but not the actual boundary. DPLH has stated that the CRIPTSF is believed to not have any impact on the Aboriginal site.

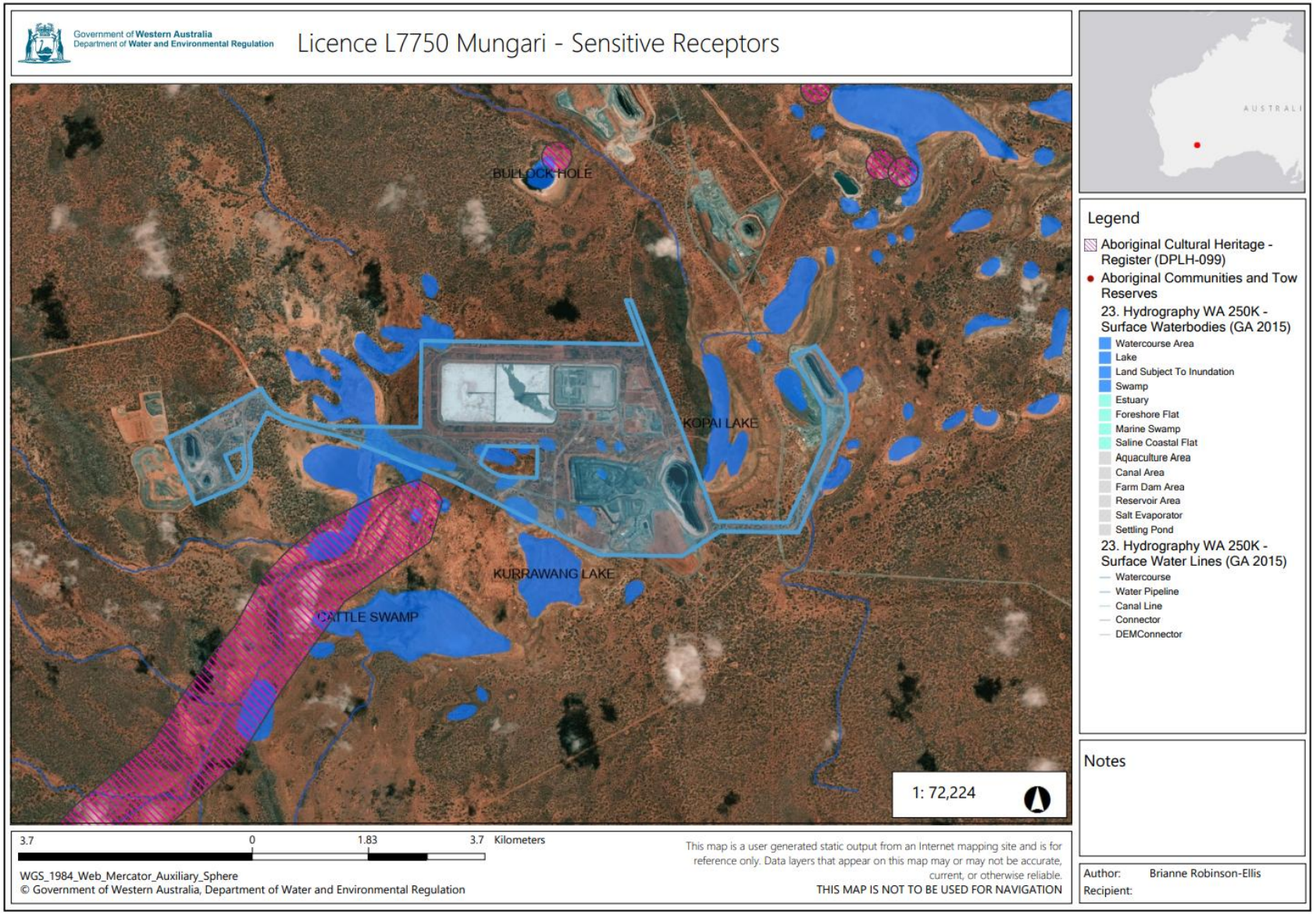


Figure 6: Distance to sensitive receptors

Licence: L7750/2001/10

4.2 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 4.1. 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 4.1), 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 L7750/2001/10 that accompanies this Amendment Report authorises emissions associated with the construction and operation of the Premises i.e. operation of the expanded Mungari processing Plant, Cutters Ridge In-Pit Tailings Storage Facility and Mungari TSF Cell 4 Stage 3. Additionally, the construction and operation of Mungari TSF Cells 3 and 4 Stages 4 to 10.

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

Table 5. Risk assessment of potential emissions and discharges from the Premises during construction and operation

Risk Event					**Risk rating[1]** **C = consequence** **L = likelihood**	**Licence Holder's controls sufficient?**	**Conditions[2] of licence**	**Justification for additional regulatory controls/ DWER comments**
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Construction								
Construction of TSF raises (stages 4 – 10 for Cell 3 and 4)	Dust	**Pathway:** Air/windborne pathway **Impact:** Health and amenity	Priority vegetation within the premises boundary	Refer to Section 5.1	C = Slight L = Unlikely **Low Risk**	Y	N/A	Conditions for the management of dust emissions already exist on the Licence. No additional regulatory controls are required.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls/ DWER comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation								
Operation of ore processing plant and associated infrastructure	Dust	**Pathway:** Air/windborne pathway **Impact:** Health and amenity	Priority vegetation within the premises boundary	Refer to Section 5.1	C = Slight L = Unlikely **Low Risk**	Y	**Condition 6**	Condition 6 relates to the operation of Mungari Mill and ensures that: • dust suppression sprays are operated at the ROM feed hopper, transfer points and on product stockpiles. • ore is wetted down prior to crushing and that a water cart is always available to manage dust emissions.
Stockpiles of ore, crushing/ mills/ screening, conveyors / transfer points	Sediment laden stormwater	**Pathway:** Overland runoff **Impact:** Ecosystem disturbance or impact to surface water quality	Surface water features (including salt lakes)	Refer to Section 5.1	C = Minor L = Unlikely **Medium Risk**	Y	**Condition 6**	Condition 6 relates to the operation of Mungari Mill and ensures that: • potentially contaminated stormwater is captured and prevented from being released into the environment. • the stormwater diversion trench is inspected on a weekly basis, pumped out after rainfall events to remove excess sediment to prevent overflowing of contaminated stormwater.
Operation of final tailings hopper tank, pumping systems and associated pipelines.	Tailings	**Pathway:** Pipeline burst or leak causing direct discharge to land **Impact:** Ecosystem disturbance or impact to soil, groundwater or surface water quality	Surface water features (including salt lakes) Native vegetation Fauna Groundwater Aboriginal heritage sites	Refer to Section 5.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 1, 8 and 25 **Conditions 12 and 13.** Conditions 35 and 36	Existing conditions for the management of tailings emissions on the Licence are deemed sufficient by the Delegated Officer (conditions 1, 8 and 25). Design and construction requirements have been added to the licence through condition 12, with compliance requirements through existing conditions 35 and 36.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls/ DWER comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Storage of chemicals (new cyanide tank and new caustic dosing pump)	Chemicals	**Pathway:** Spills, leaks or discharges **Impact:** Groundwater or soil contamination	Surface water features (including salt lakes) Native vegetation Fauna Groundwater Aboriginal heritage sites	Refer to Section 5.1	C = Moderate L = Unlikely **Medium Risk**	Y	**Condition 6**	Condition 6 ensures that bunded hydrocarbon and chemical storage areas are maintained through regular inspections.
Operation failure of decant pipeline and/or tailings delivery pipeline (spills/leaks)	Decant water and/or tailings	**Pathway:** Pipeline burst or leak causing direct discharge to land **Impact:** Ecosystem disturbance or impact to soil, groundwater or surface water quality	Surface water features (including salt lakes) Native vegetation Fauna Groundwater Aboriginal heritage sites	Refer to Section 5.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 1, 8 and 25 **Conditions 12 and 13.** Conditions 35 and 36	Existing conditions for the management of potential tailings emissions on the Licence are deemed sufficient by the Delegated Officer (conditions 1, 8 and 25). Design and construction requirements have been added to the licence through condition 12 along with compliance requirements through existing conditions 35 and 36. controls are required.
Deposition of tailings at the Cutters Ridge In-Pit TSF and TSF 3 and 4	Decant water and/or tailings	**Pathway:** Seepage through base of pit **Impact:** Groundwater mounding and adverse impacts to groundwater dependent vegetation	Groundwater Native vegetation	Refer to Section 5.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 4, 7, 26 and 27 Condition 11 Condition 26	Existing conditions for the management of tailings emissions on the Licence are deemed sufficient by the Delegated Officer (conditions 4, 7, 26 and 27). Condition 11 has been added with construction and operational heights of TSF stages 4 – 10 Existing condition 25 has been updated to include Cutters Ridge In-Pit TSF to the process monitoring regime. Existing condition 26 has been updated to include Cutters Ridge In-Pit TSF to the groundwater monitoring regime.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls/ DWER comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Deposition of tailings at the Cutters Ridge In-Pit TSF and TSF 3 and 4	Decant water and/or tailings	**Pathway:** Overtopping of pit and stormwater runoff **Impact:** Ecosystem contamination and soil erosion	Native vegetation Fauna Surface water bodies Aboriginal heritage sites	Refer to Section 5.1	C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 5 and 10	Existing conditions for the adequate management of potential tailings emissions on the Licence are deemed sufficient by the Delegated Officer (conditions 5 and 10). No additional regulatory controls are required.

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.

5. Consultation

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

Table 6: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 7 November 2025	One comment was received on 15 November 2025.	Refer to Appendix 1.
The Marlinyu Ghoorlie Aboriginal Corporation was advised of the proposal on 7 November 2025	No comments received.	N/A
The Kurrawang Aboriginal Christian Community was advised of the proposal on 7 November 2025.	No comments received.	N/A
The Maduwongga People were advised of the proposal on 7 November 2025	No comments received.	N/A
Licence Holder was provided with draft amendment on 26 November 2025	Licence Holder waived the consultation period on 27 November 2025.	N/A

6. 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.

6.1 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
-	Updated condition, table and figure numbering.
Licence history	Inclusion of licence amendment details to the licence history table.
Condition 2 and 3	Removal of wording 'in a manner that avoids damage to surrounding vegetation'. Condition 3 has now been included specifying the use of hypersaline water for dust suppression.
Condition 4	Addition of Cutters Ridge In-Pit TSF to Table 1: containment infrastructure.
Condition 5	Addition of condition 5 (c) specifying to maintain a minimum total free board of 500 mm from the decant pond water level to the top of pit rim.
Condition 6	Addition of condition 6 which specifies infrastructure requirements for the tailings and decant return pipeline corridor, Mungari Mill and chemical storage area.
Condition 10	Inclusion of the Mungari TSF Cell 4 Stage 3 lift heights.
Condition 11	Inclusion of condition 11 which authorises the licence holder to construct and operate the stage 4 to 10 embankment raises for the Mungari TSF Cells 3 and 4.
Condition 12	Addition of the stage 4 to 10 embankment raises for the Mungari TSF Cells 3 and 4 in Table 6: Design and construction / installation requirements.
Condition 13	Inclusion of condition 13 to allow the Licence Holder to only commence construction of an embankment raise where the submission of compliance report/s for the preceding stage has been completed.
Condition 25	Inclusion of the Cutters Ridge In-Pit TSF to the process monitoring requirements.
Condition 26	Inclusion of the Cutters Ridge In-Pit TSF monitoring bores to the monitoring of ambient groundwater quality requirements.
Definitions	Inclusion of the definition for mbgl.
Schedule 1: Maps	Replaced out dated maps and figures, and included figures 8 and 9 detailing the embankment raises and decant and underdrainage causeway section.
Schedule 2: Premises Boundary	Updated the premises boundary coordinates to reflect the expanded premises boundary.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

Appendix 1: Summary of stakeholder comments

Summary of stakeholder comments	Department's response
<u>Geotechnical stability and design</u> **Foundation characterisation** Concerns that the geotechnical investigation was insufficient to fully characterise foundation conditions and, that boreholes terminating at 25 m depth may not assess deeper groundwater conditions and that preferential seepage pathways may have not been fully characterised. **Stability assessment under staged construction** Comments were received in relation to the phreatic surface management, the transition from downstream / centreline construction to upstream construction, and seismic performance. **Recommendations**: • adding deeper boreholes • further permeability testing • piezometer installation in deep foundation units • conduct numerical modelling for critical stages to assess deformation under seismic loading • perform cyclic simple shear or triaxial testing on representative tailings and foundation material and • establish clear operational triggers, related to phreatic surface exceedances, linked to progressive buttress construction schedules.	Bore construction conditions were included in the existing works approval (W6364/2020/1) for TSF Cell's 3 and 4. Compliance of bore construction was submitted in November 2020 and confirmed that deep bores were drilled to 27 to 30 mbgl. Bores relating to Cell's 3 and 4 were brought onto the existing licence on 4 November 2021. Stability and seismic performance of the TSF is assessed under Department of Mines Petroleum and Exploration (DMPE) and is out of scope for DWER's assessment under Part V of the *Environmental Protection Act 1986*. All DMPE approvals for the facilities have been issued.

Summary of stakeholder comments	Department's response
Tailings characterisation **Physical Properties** Concern was expressed in relation to the density assumptions of the tailings based on beach management and drying between deposition cycles and state parameter and liquefaction susceptibility. **Chemical characteristics and long-term stability** Concerns were raised in relation to salt accumulation in foundation materials due to the salinity of the process water and resulting tailings. Resulting in potential implications for revegetation at closure. Additionally, the potential for dispersion and erosion over time. **Recommendations** • implementation of regular tests for physical properties of the tailings • groundwater monitoring, developing a salt mass balance model and conducting column testing and assessments on salt transport and salt-induced changes in the soil.	The tailings characterisations as discussed in the stakeholder comments were assessed as properties related to risk of seepage from the TSF when works approval W6364/2020/1 was applied for. The Delegated Officer is satisfied the existing works approval (W6364/2020/1) has adequately risk assessed the seepage from the TSF with appropriate monitoring conditions applied. This application does not include a change in material already authorised under the licence. Groundwater monitoring of parameters including TDS, already exists on the licence for TSF Cell's 3 and 4. Ongoing monitoring and annual reporting is required under the licence. Post-closure is not assessed under Part V of the EP Act and is therefore out of scope for this assessment.
Water management and containment **Water balance model assessment** Concerns in relation to climate variability and its effects on model assumptions and the potential for tailings permeability to change over time were also expressed. Additionally, the decant systems reliability in terms of being a single point of failure and potential for access challenges. **Containment freeboard and extreme events** Comments suggests that the probable maximum precipitation estimations used have not considered climate change events or combined scenarios such as extreme rainfall followed by a seismic event. **Recommendations:** • the water balance model be updated with climate change projections and extreme climate events be taken into consideration • undertake sensitivity analysis on the tailings and emergency water management procedures • conduct risk assessments of combined failure scenarios and develop emergency response plans	The Delegated Officer is satisfied the existing works approval has adequately risk assessed the construction of the TSF. An annual water balance is required under condition 9 of the existing licence for each TSF cell and is to be reported to DWER annually. Freeboard conditions for the TSF's have been assessed under previous assessments and are calculated to include an allowance for the 1% annual exceedance probability 72-hour rain event. Seismic events and emergency response plans are out of scope for Part V of the EP Act. These are included under DMPE legislation and approvals.

Summary of stakeholder comments	Department's response
Seepage management and groundwater impacts **Seepage collection systems** Comment was made regarding the foundation cutoff adequacy, long term drainage system performance and seepage water quality. **Groundwater monitoring** Concerns regarding the groundwater monitoring network's ability to characterise groundwater mounding, detect seepage migration, and differentiate between TSF related impacts and regional groundwater variations was raised. **Recommendations:** • conduct seepage modelling to verify cutoff adequacy • develop a seepage monitoring program and a post closure seepage management plan • install piezometers downgradient of the facility to monitor seepage impacts • implement regular data reviews, monitoring programs and annual reporting • expand the monitoring network to include perimeter wells downgradient of the TSF	A seepage and groundwater monitoring program was assessed and approved during the works approval for TSF cells 3 and 4. As they have been previously assessed and approved, seepage collection systems are not being reassessed during this amendment. Should seepage issues be identified throughout the life of the TSF, then investigations into seepage will be required. The Department undertakes a risk-based approach to environmental assessment. Potential risks are assessed on source-pathway-receptor basis. Impacts to groundwater have already been assessed by the source-pathway-receptor method, under previous assessments for the site, with consequential monitoring conditions included in the existing licence. Results from monitoring are required to be submitted to the Department in the Annual Environmental Report (AER). The Delegated Officer is satisfied the monitoring regime is adequate and does not require reassessing for this amendment.
Closure **Closure and long-term stability** Design of the final closure landform was commented on, and concerns were expressed regarding the Tailings Storage Facilities long term physical stability post closure. Recommendations were made regarding the post closure assessments and monitoring of the TSF. **Surface water management at closure** Progressive degradation through erosion, sedimentation, or vegetation encroachment were also of concern, especially post closure. Recommendations were made regarding long term surface water management and modelling of geomorphic drainage patterns to incorporate engineered erosion protection measures at critical locations.	Closure cover design and post-closure surface water management is out of scope for the Part V assessment. This is covered through the DMPE mine closure plan for this proposal. TSF long-term physical stability post closure is out-of-scope for the Part V assessment. This is covered through the DMPE mine closure plan for this proposal.
Cumulative impacts Potential cumulative impacts from Mungari Cells 1, 2, 3 and 4 were commented on. Particularly in relation to combined seepage loading, regional groundwater salinity and landform stability at closure.	Monitoring data presented within AER will identify cumulative impacts. As discussed above, TSF closure is out-of-scope for the Part V assessment and is covered in DMPE's closure plan.

Summary of stakeholder comments	Department's response
Recommendations: • cumulative impact assessment is undertaken, incorporating all existing and proposed cells. • develop a closure plan and adaptive management framework to address site-wide landform stability, drainage and environmental objectives.	
Alignment with current guidelines Concerns regarding the continued use of upstream construction for Stages 4-10, particularly regarding the alignment with the Global Industry Standard on Tailings Management principles (GISTM). Recommendations include conducting a comprehensive gap analysis against GISTM requirements and consider design modifications to minimise reliance on upstream construction.	The assessment of the geotechnical design parameters including construction are assessed by DMPE. An application was submitted to DMPE on 06 June 2025 for TSF Cells 3 and 4, Stages 4-10 (REG ID 500639). This application was then approved on 28 August 2025.