



YOUANMI GOLD PROJECT

Rox (Murchison) Pty Ltd

(L8275/2008/2)

Works Approval Supporting Document

Process Plant, TSF3, Power, Sewage & Dewatering



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1 INTRODUCTION

1.1 Overview

This Works Application has been prepared for the Youanmi Mine (YM or the Project), located 470km northeast of Perth and 125km southeast of Mt Magnet in the Murchison region of Western Australia (Figure 1). The Project is owned and operated by Rox (Murchison) Pty Ltd, a wholly owned subsidiary of Rox Resources Limited (RXL).

The Project involves mining and processing of gold bearing ore at the Youanmi Gold Mine. Ore will be mined from underground resources and transported to the Run-of-Mine pad. It will then be processed through a new 1 Million tonnes per annum (Mtpa) processing plant, with tailings stored in a new tailings storage facility (TSF) TSF3. The simplified processing flowsheet includes:

- Three-stage crushing;
- Single-stage grinding;
- Sulphide flotation;
- Ultra-fine grinding;
- Oxidation of concentrate sulphides by Neutral Albion Leach;
- Thickening;
- Cyanidation and gold adsorption via Carbon-in-leach (CIL)
- Elution circuit and smelting of recovered gold to doré;
- Tailings pumped to the tailings disposal facility.

Power will be supplied via a new power-station comprising a solar array, gas turbines and backup diesel generators. Additional evaporation ponds and fans will supplement existing (licensed) dewatering infrastructure. A new wastewater treatment plant (WWTP) will manage sewage from the current and the expanded village, and a putrescible landfill will supplement the existing (licensed) landfill.

1.2 Purpose

This Supporting Document has been prepared to accompany a Works Approval Application seeking approval to construct Prescribed Premises infrastructure at the Youanmi Mine. The application is provided for assessment to the Department of Water and Environmental Regulation (DWER) in accordance with Part V of the *Environmental Protection Act 1986* (EP Act) and Regulations 1987 (EP Regs).

This Supporting Document is provided as Attachment 3B to the Works Approval Application Form. The full list of attachments to the application is below:

- Attachment 1A: Occupier Status Tenements Summary;
- Attachment 1B: RXL ASIC Extract 2025;
- Attachment 1C: Authorisation to Act;
- Attachment 2: Youanmi Site Plan;
- Attachment 3A: Youanmi Commissioning Schedule;
- Attachment 3B: Supporting Documentation;
- Attachment 3C: Youanmi Works Approval Proposed Clearing Plan;
- Attachment 5: Youanmi Stakeholder Register (updated);
- Attachment 9: Category Checklist Tailings Storage Facility; and

- Appendix 1: Risk Assessment.

The Supporting Document and Appendices provide technical, design, emission and management details of all proposed infrastructure, which is intended to be sufficient for DWER to assess and approve the proposal.

The application seeks approval to construct infrastructure prescribed under the following categories, for the production or design capacity and activities summarised below:

- Category 5 - Processing or beneficiation of metallic or non-metallic ore:
 - Production / Design Capacity: 1,000,000 Tonnes per annual period;
 - Processing Plant;
 - Tailings Storage Facility (TSF3);
 - Supporting and ancillary infrastructure, such as water and tailings pipelines, ponds, power-lines, workshop, offices and ablutions.
- Category 6 - Mine dewatering:
 - Production / Design Capacity: 2,345,000 m³ per year - no change from existing licensed capacity;
 - Expansion of existing Evaporation Ponds;
- Category 52 - Electric power generation:
 - Production / Design Capacity: Installed Capacity of 29.5 MW;
 - Gas thermal system;
- Category 54 – Sewage facility:
 - Production / Design Capacity: Treatment Capacity of 150 m³ per day;
 - WWTP capacity: 100 m³ / day (max);
 - Irrigation Volume: 107 m³ per day, and
 - 27 m³ RO brine and 23 m³ contingency;
- Category 64 – Class II Putrescible Landfill:
 - Production / Design Capacity: 5,000 tonnes per year – no change from existing licensed capacity;
 - Change of existing Class 1 landfill to Class II Putrescible;

The current Prescribed Premises boundary, as defined in EP Act Licence L8275/2008/2 requires adjustment to encompass the additional infrastructure. The facility will be located within the amended Prescribed Premises Boundary, shown in Figure 2.

1.3 Proponent Details

Table 1 below shows the proponent and site details for the Youanmi Mine.

Table 1: Proponent and Site Details

Proponent details	
Company name	Rox (Murchison) Pty Ltd
ACN/ABN	ACN: 633 617 455
Address	Street: Level 1/87 Colin Street West Perth WA 6005



Site details	
Site Name	Youanmi Mine
Prescribed Premise Licence	L8275/2008/2
*Prescribed Premises Licence Boundary	Shown on Figures 2 & 3
Tenements	M57/10, M57/51, M57/135, M57/165, M57/160A, M57/166 and L57/58 (100% Rox)

*Figures 2 & 3 show the Premises boundary amended to enclose the proposed new infrastructure

1.4 Existing Licence L8275/2008/2

The Company holds Prescribed Premise Licence L8275/2008/2, issued pursuant to Part V of the *Environmental Protection Act 1986* by the Department of Water and Environmental Regulation (DWER). The operations at the Youanmi Gold Mine are considered Prescribed under Category 6: Mine Dewatering and Category 63: Class 1 Inert Landfill Site.

On completion of construction of the proposed infrastructure, an amendment will be sought for L8275/2008/2 to authorise its operation. A summary of previous licence modifications is presented in Table 2.

Table 2: L8275/2008/2 History

Issued	Instrument	Description
18/02/1984	W1059/1988/1	Construction of a flotation circuit and a 200,000 tonnes per annum Bacterial Leaching Plant
28/10/1987	L6025/1988/1	Operations commenced under this licence until 1998.
11/12/2008	L8275/2008/1	New licence application
12/12/2013	L8275/2008/2	Licence renewal and amendment to REFIRE format
29/04/2017	L8275/2008/2	Licence Expiry extended to 14 December 2027.
20/07/2022	L8275/2008/2	Licence amended to amalgamate Amendment Notice 1, to include Category 6 and to Change location to Category 63.
11/06/2025	L8275/2008/2	Licence amendment to construct and operate new Category 6 dewatering infrastructure, add Kathleen Pit and Rebel Pit as dewatering discharge points, increase Category 6 design capacity and replace two groundwater monitoring wells.

1.5 Location, Tenure and Site Layout Plans

The Youanmi Gold Mine is located approximately 470 kilometres northeast of Perth and 125 km southeast of Mt Magnet, in the Murchison region of Western Australia and within the Shire of Sandstone. The site is accessed via the Paynes Find to Sandstone Road. The Project encompasses the tenements listed in Table 3.

The regional location of the project is shown in Figure 1. The prescribed premises boundary for the Project intersects Mining Leases M57/10, M57/51, M57/135, M57/165, M57/160A, M57/166 and L57/58 (100% Rox) as shown in Figure 2.

Table 3: Details of Mining Tenure Listed on L8275/2008/2

Mining Tenement	Holder	Area	Expiry
M57/135	Rox (Murchison) Pty Ltd	179.65	08/10/2031
M57/51	Rox (Murchison) Pty Ltd	944.00	24/02/2029
M57/10	Rox (Murchison) Pty Ltd	634.05	29/05/2026
M57/165 (new)	Rox (Murchison) Pty Ltd	988.65	30/01/2032
M57/166 (new)	Rox (Murchison) Pty Ltd	583.85	30/01/2032
L57/58 (new)	Rox (Murchison) Pty Ltd	51.42	07/08/2044

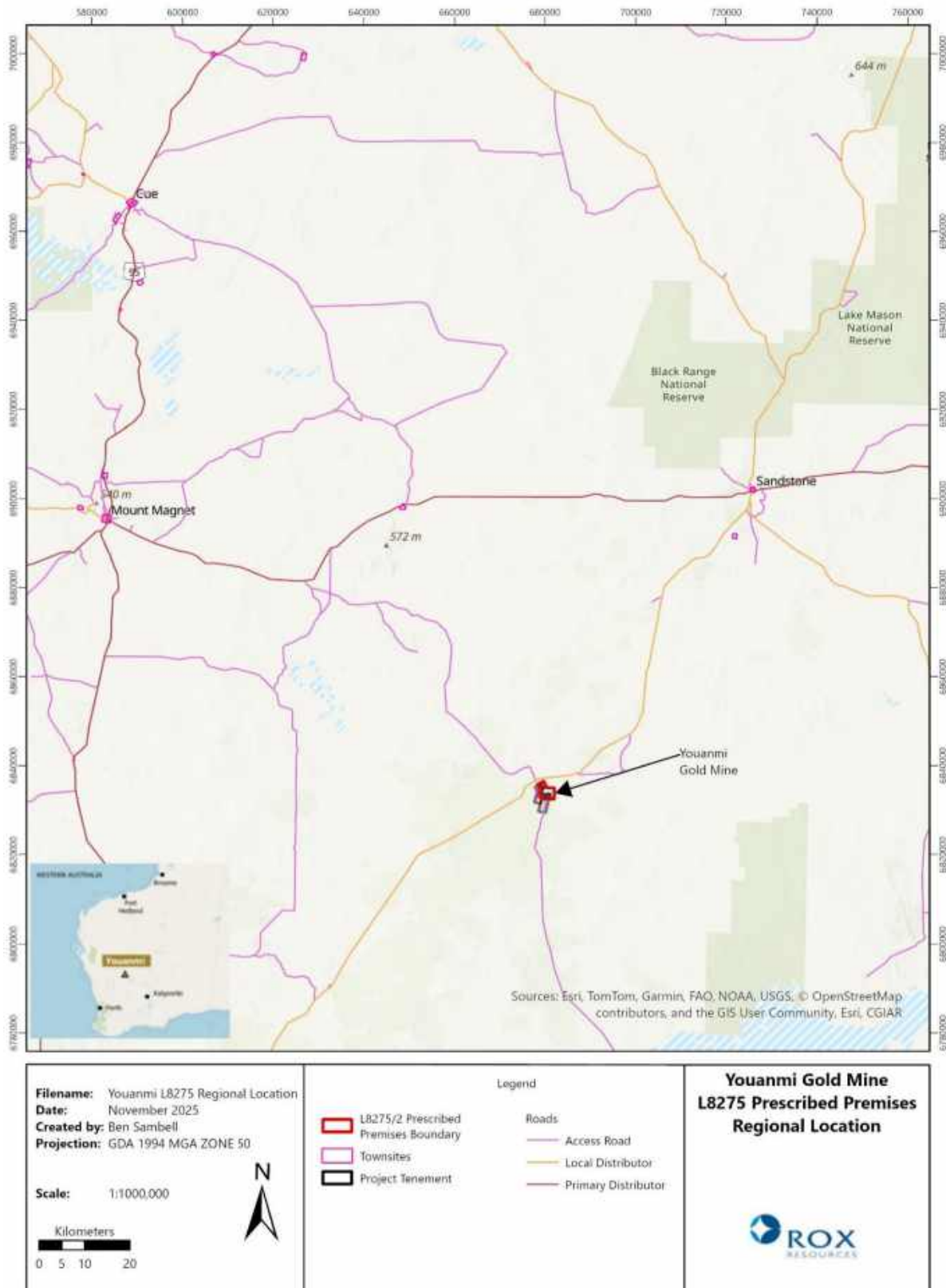


Figure 1. Youanmi Gold Project - Regional Location

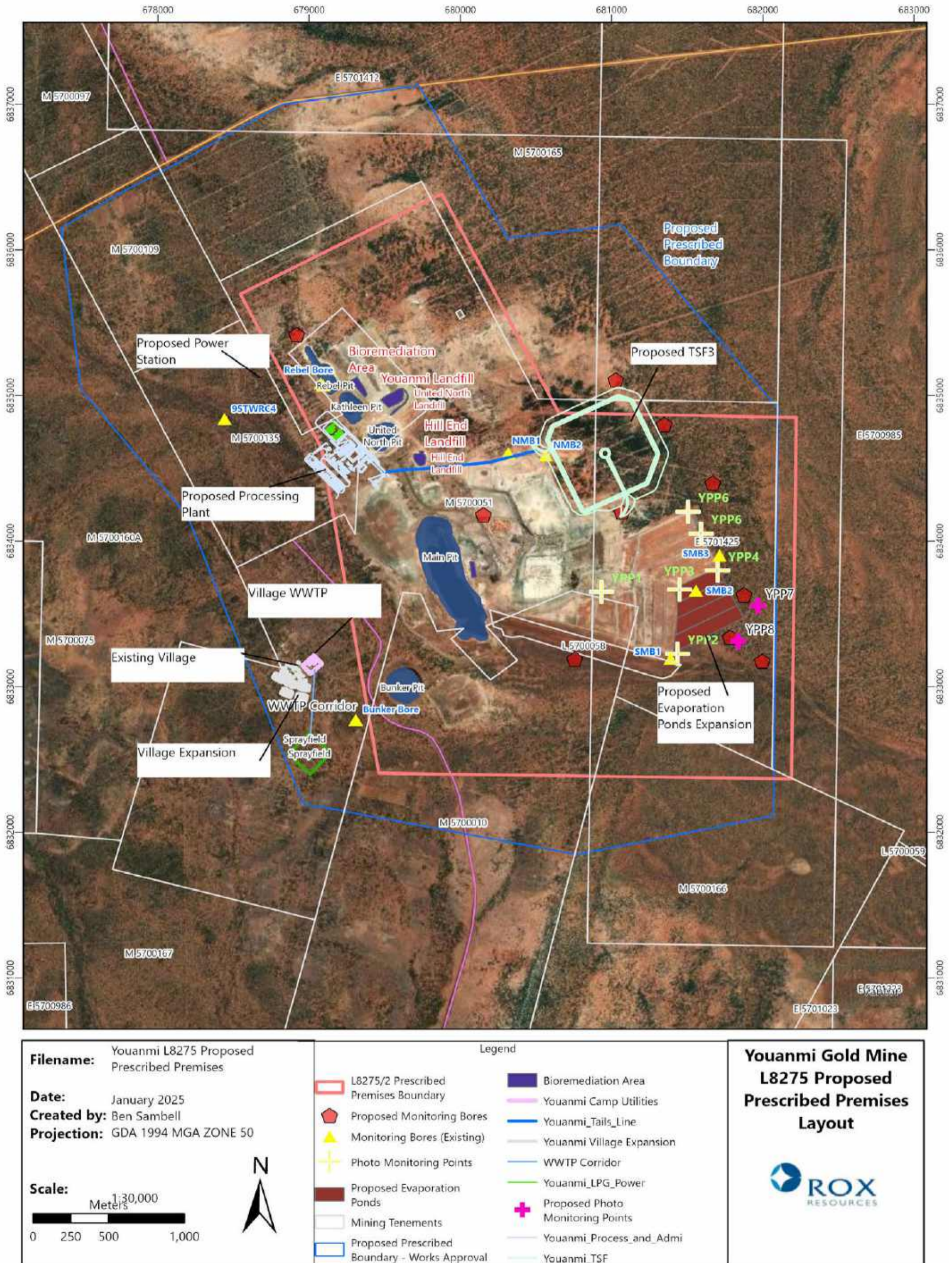


Figure 2. Youanmi Gold Mine - Proposed Prescribed Premises Layout & Boundary

2 PROCESSING PLANT – CATEGORY 5

2.1 Design Capacity

Rox proposes to construct a new Processing Plant within tenement M57/135 and M57/51 at Youanmi. The new plant will treat all ore scheduled to be mined over the current (eight-year) Life of Mine (LOM).

The plant will consist of a Run of Mine (ROM), crushing, grinding and flotation circuits, and gold leaching, recovery and gold room facilities. The production or design capacity of the new plant is 1,000,000 tonnes per annual period. Table 4 below summarises the key details of the processing plant for prescribed premises licensing purposes.

Table 4: Processing Plant Key Details

Category	Category Description	Production or Design Capacity	Proposed Activity
5	Processing or beneficiation of metallic or non-metallic ore	1,000,000 tonnes per annual period	Construction of Processing Plant, comprising: <ul style="list-style-type: none"> • Three-stage crushing; • Single-stage grinding; • Sulphide flotation; • Ultra-fine grinding; • Thickening; • Oxidation of concentrate sulphides by Neutral Albion Leach; • Carbon-in-leach (CIL); • Elution circuit and gold room; • Tailings pumped to the tailings storage facility 3 (TSF3).

2.2 Ore Processing

2.2.1 Design Parameters

The process plant design has been developed from the outcomes of metallurgical test work conducted during the Youanmi Project Feasibility Study. The full design report is provided in Appendix 1, MACA (2025), Youanmi Process Plant Design Report, which holds design drawings and detailed description of the various components.

For reference, a schematic diagram of the plant is shown below in Figure 3, the general arrangement of the Plant Layout in Figure 4, and the general arrangement of the Process Water Ponds in Figure 5.

The plant is designed to incorporate the Albion Process™, which was developed by Glencore Technology and patented worldwide. Test work and study results concluded it the most efficient and effective treatment for Youanmi ore. The Albion Process™ is summarised in Section 2.2.2 and the Study Report included as Appendix 6 of MACA (2025).

The plant design is based on a metallurgical flowsheet that maximises gold recovery and minimises costs, while incorporating required safety and environmental considerations. The design parameters are shown in Table 5.

Environmental emissions, risks, and potential impacts are minimised throughout plant construction and operation through efficient engineering design and robust operating protocols. The plant layout ensures safe and easy access to all equipment for operations and maintenance, while maintaining a compact footprint to reduce disturbance and construction costs.

Table 5: Plant Design Parameters

Description	Value	Units	Source
Annual Throughput	1,000,000	t/a	Client
Design Feed Grade	4.8	Au g/t	Client
S ²	3.43	%	Client
Crushing Circuit			
Type	Three Stage Crush		Engineer
Plant Utilisation	70	%	Engineer
Required Crushing Rate	t/h	163	Calculated
Grinding Circuit			
Circuit Type		Single Stage ball	
Plant Utilisation	%	91.3	Engineer
Design Treatment Rate	t/h	125	Calculated
Product Size (P80)	µm	75	Test Work
Flotation Circuit			
Configuration		Rougher only	
Design recoveries	Au %	92.5	Client
	S2- %	98.4	Client
	Mass %	13	Client
Fine Grinding and Albion			
Concentrate thickener	m	10	Engineer
Specific energy required	kWh/t	77	GT
Fine grinding P ₈₀	µm	12	GT
Albion leach residence time	H	48	GT
Target Oxidation	%	65	GT
O2 requirement (100% Purity)	t/t	0.40	GT
	t/t	0.47	GT
NaOH requirement	Kg/t	0	GT
Process mass change	%	220	GT
Albion product thickener diameter	m	15	Engineer
Gold recovery			
Flot tail Thickener Diameter	m	18	Test work
Flot tail Thickener Underflow Density	% solids	55	Engineer
Albion Product Intensive Leach Tanks	No.	2	Client
Combined Leach Tanks	No.	1	Engineer
Combined Adsorption Tanks	No.	7	Engineer
Intensive Leach Time	Hrs	24	Client
Combined Leach & Adsorption Residence	Hrs	24	Client

Description	Value	Units	Source
Elution Circuit Size	t	6	Engineer
Elution Schedule	Strip / week	6	Engineer
Combined leach CN consumption	Kg / t	1.23	Weighted average
Combined leach Lime consumption	Kg / t	0.47	Weighted average

2.2.2 Albion™ Process

Ore associated with the Project has significant pyrite and arsenopyrite content and is semi-refractory in nature. Conventional processing is difficult as the gold content is largely locked up in sulphides (refractory). Project owners since 1908 have relied on a variety of oxidative methods to effectively liberate gold from the sulphide mineralisation for downstream cyanidation (JT Met 2024).

Glencore Technology was commissioned by Rox to complete the 'Youanmi - Class 3 Study' for recovery of gold from refractory sulphide concentrates using the Albion Process™. The Glencore (2025) study report is incorporated as Appendix 6 in the MACA (2025) design report, provided as Appendix 1. MACA (2025). Youanmi Process Plant Design Report. A summary of the Albion Process™ is provided below from Glencore (2025).

The Albion Process™ comprises two steps; fine grinding and oxidative leach to improve gold recovery in the downstream CIL Plant. The first stage is mechanical liberation, which is achieved in the IsaMill™ Grinding Plant. The second is chemical liberation, achieved in the atmospheric pressure Albion Process™ Oxidative Leach. The residue from the Albion Process™ will feed a CIL plant for precious metals recovery.

The IsaMill™ circuit produces a finely ground concentrate as feed to the Albion Process™. Fine grinding prevents passivation of the mineral in the leach circuit and allows the leach to operate at atmospheric pressure. Concentrate is ground as slurry, with the IsaMill™ operated in closed circuit.

The oxidative leach circuit oxidises sulphide minerals to either elemental sulphur or sulphate. The ground concentrate provides a buffer to the Albion Process™ oxidative leaching plant and the Neutral Oxidative Leach (NAL) circuit oxidises the sulphide matrix of concentrates under operating conditions.

This process liberates significant heat, and the leach is allowed to operate at a temperature close to the boiling point of the slurry, which at Youanmi is anticipated to be 98.5°C. At this operating temperature range, mineral leaching occurs in two steps. In the first step, the mineral sulphide is oxidised to a soluble sulphate and elemental sulphur. In the second step, the elemental sulphur is then oxidised to form sulphuric acid. These reactions are catalysed by the action of ferric iron under acidic conditions.

Discharge slurry from the neutral leach circuit gravitates to the thickener, which is a 15-metre diameter high-rate thickener for settling the oxidised solids. Flocculant is added at 0.05% w/w to be blended with the feed and flows to the thickener feed well by gravity. The concentrate slurry is thickened to an underflow density of 35 - 45% w/w. Thickener Underflow is transferred to the NAL Thickener Underflow Tank. The thickened underflow Slurry is then pumped to the CIL circuit.

Overflow from the Neutral Leach Thickener will gravitate to the Neutral Leach Thickener Overflow Tank and is utilised for dilution in the neutral leach reactors. Any excess is returned to the process water system. Further information and detail regarding chemical processes and description of the Albion Plant™ is available in Glencore (2025) (Appendix 1. MACA (2025). Youanmi Process Plant Design Report).

2.2.3 Ore Treatment Flowsheet

The treatment plant design incorporates the following unit process operation. This is also shown as a schematic in Figure 3, and the General Arrangement of the plant in Figure 4:

- Three stage crushing with a single toggle jaw crusher and two cone crushers to produce a crushed product size of 80% passing (P_{80}) of 8 mm;
- Crushed ore surge bin with a nominal 2,000 tonne capacity. Surge bin overflow is stockpiled by front-end loader (FEL). Ore from the dead stockpile is reclaimed by FEL to feed the mill during periods when the crushing circuit is offline;
- Closed circuit single stage ball mill to produce a P_{80} grind size of 75 μm ;
- Flotation of a gold-bearing sulphide concentrate through a rougher circuit;
- Ultra-fine grinding and classification utilising an IsaMill to a product size of 80% passing (P_{80}) of 12 μm ;
- Dewatering of the ultra-fine concentrate via thickener ahead of oxidation;
- Concentrate oxidation through a neutral Albion circuit with oxygen and limestone addition, with additional dewatering by thickener at the tail end;
- Cooling of the Albion product slurry by slurry cooling tower;
- Intensive cyanidation of Albion product in two stages of open tanks adjacent to the CIL circuit;
- Pre-leach thickener to increase flotation tails slurry density to the carbon in leach (CIL) circuit, minimise CIL tankage, improve slurry mixing characteristics, reduce overall reagent consumption, and provide cyanide free water to the milling and flotation circuits;
- Combined CIL circuit incorporating eight stages, seven of which contain carbon for gold adsorption;
- Split AARL elution circuit with gold recovery to doré via electrowinning and smelting; and
- Tailings pumping to the tailings disposal facility.

2.2.4 Processing Overview

Ore will be fed from the ROM pad by front-end loader (FEL) into a primary jaw crusher. The crushed product will be fed to a double-deck vibratory screen, with screen oversize from each deck reporting to the secondary and tertiary cone crushers respectively. The screen undersize at a nominal maximum of 14mm will then be conveyed to a fine ore bin, which will provide 16 hours of live storage, as well as an overflow which will be stacked by FEL into a dead stockpile.

Crushed ore will be withdrawn from the fine ore bin and fed to a ball mill in closed circuit with a cluster of hydrocyclones, which will grind the ore to a nominal product size of 80% passing (P_{80}) 75 μm . No gravity recovery equipment is included in the circuit as testwork has indicated that the gravity-recoverable gold is low.

The product from the grinding circuit will then be fed to a bank of rougher flotation cells after conditioning with reagents. The gold-bearing sulphides will be separated into a flotation

concentrate with high grades of sulphur and gold. The concentrate will be transferred to an ultra-fine grinding (UFG) circuit and the flotation tailings will be thickened before being fed to the carbon-in-leach (CIL) circuit.

The flotation concentrate will be ground to a product of P_{80} 12 μ m by an IsaMill™ in closed circuit with hydrocyclones. This will maximise the exposed surface area of the sulphides for the following oxidation step. The reground concentrate will be fed to a Neutral Albion™ Leach (NAL) circuit, along with oxygen and limestone. This circuit will consist of six reactors in which the sulphides are reacted with oxygen under neutral pH conditions at high temperature to unlock the contained gold. Following the NAL, the slurry will be thickened and passed through a slurry cooling tower to bring the temperature to an appropriate level for cyanidation

Cooled NAL product will then be neutralised with lime and leached in two intensive cyanidation tanks for 24 hours ahead of the CIL circuit. The product of the intensive cyanidation circuit will be combined with the thickened flotation tailings in a standard CIL circuit consisting of one leach tank and seven carbon adsorption tanks with a total residence time of 24 hours. The leached slurry will be pumped to the tailings storage facility (TSF)

Carbon loaded with gold will be stripped using a split AARL elution circuit, producing a gold solution. Gold will be recovered from this solution via electrowinning, then smelted to form doré (gold bars).

2.3 Plant Components

2.3.1 Run-of-Mine (ROM) Pad

Haul trucks operating from the underground mine will deliver ore directly to the run-of-mine (ROM) pad where it will be dumped/stockpiled into blending 'finger' stockpiles arranged by ore gold grade. A front-end loader (FEL) will be used to reclaim and tram ore from the various stockpiles to feed the ROM bin.

2.3.2 Crushing Circuit

ROM ore will be loaded into the crushing circuit feed bin (ROM bin) by FEL. A grizzly will be fitted to the ROM bin to protect the downstream equipment from larger size material. The grizzly will be designed for easy cleaning by the ROM pad front end loader in the event of blockages.

ROM ore will be drawn from the ROM bin at a controlled rate by a variable speed apron feeder and discharge into a single toggle jaw primary crusher. Crusher product will discharge onto the crusher discharge conveyor feeding to the double-deck product screen.

Spillage and clean-up will be collected by sumps and subsequently pumped to the mill discharge hopper. The crushing circuit will be controlled from the main control room. The loader driver will ensure feed is maintained to the crushing circuit, with direct communication to the main control room via two-way radio to supply information on crusher feed operation.

2.3.3 Grinding and Classification Circuit

The grinding circuit will comprise of a ball mill, cyclone classification system, gravity circuit, trash screen, associated conveyors and ancillary equipment.

Reclaimed ore from the Fine Ore Bin (FOB) will discharge onto the mill feed conveyor and into the ball mill feed chute. A single stage, variable speed ball mill has been selected for primary grinding duty, which will mill the crushed product to the nominal circuit P_{80} size of 75 μm .

Water will be added to the mill feed to achieve a mill discharge density of approximately 75% solids w/w. Flotation reagents, lime, and pyrite depressant (sodium cyanide) will be added to the grinding circuit or flotation feed system as required.

The ball mill will discharge through a trommel screen. Trommel undersize will report to a cyclone feed hopper and pumped to the classification cyclone cluster. Duty and standby cyclone feed pumps will be provided. Cyclone overflow will be controlled at approximately 42% solids w/w and will gravitate to a vibrating trash screen, which prevent oversize particles entering the downstream flotation circuit, which are sent to a bin for disposal.

Water will be added to the cyclone feed hopper and ball mill feed chute as required to attain the correct milling densities. Sumps in the grinding area will collect spillage and clean up, to be pumped as slurry to the mill discharge hopper or to tails as required.

The grinding circuit operating parameters will be remotely monitored and adjusted from the control room.

2.3.4 Flotation

A rougher flotation circuit configuration has been selected to maximise recovery while minimising mass pull and reducing concentrate mass. The rougher concentrate will be pumped to the concentrate storage tank ahead of the ultra-fine grinding circuit, while the rougher tails will be pumped to the flotation tails / leach feed thickener.

2.3.5 Ultra-Fine Grinding and Albion Circuit

The concentrate storage tank will provide a buffer ahead of the ultra-fine grinding circuit to minimise the impact of fluctuations in flotation mass pull.

An M5000 IsaMill™ will mill the flotation concentrate to a P_{80} of 12 μm . The IsaMill™ will operate in closed circuit with cyclones in order to maintain temperatures within design levels. The milled product will be thickened by a high-rate thickener and then stored in an ultrafine concentrate storage tank to decouple the IsaMill and Albion circuits.

GT have recommended the use of a Neutral Albion Leach (NAL) to achieve the required sulphide oxidation ahead of the leach circuit, with a residence time of 48 hours across 6 Albion OxiLeach reactors provided by GT. Product leaving the NAL circuit will be hot (>90°C), so the product will be thickened in a high-rate post-NAL thickener, and then pumped through a slurry cooling tower to bring to leaching temperature (45°C).

2.3.6 Pre-Leach Thickening

Flotation tails will be thickened in a high-rate thickener to the nominal leach feed density of 55% w/w solids. Thickener underflow will be pumped to the Carbon in Leach (CIL) circuit and thickener overflow will gravitate to the process water tank.

The water used in the CIL circuit will contain cyanide, which depresses the flotation of gold-bearing sulphides, so the process water systems will be split into cyanide-free and cyanide-bearing streams.

2.3.7 Leach and Carbon Adsorption Circuit

The thickener underflow stream from the pre-leach circuit has a nominal pulp density of 50% w/w solids, which will be pumped to the CIL circuit. The leach and adsorption circuit will consist of two intensive and one standard leach tank, and seven CIL adsorption tanks.

The separation of the Albion product means that a slurry cooling step is included. The leach tanks will ensure a high solution tenor entering the first adsorption tank, allowing higher loaded carbon grades than can be achieved in a conventional carbon-in-leach (CIL) circuit. The leach and adsorption tanks will be identical in size, with a total circuit residence time of 24 hours at 48% w/w density in the tanks.

The leach and adsorption tanks will be interconnected with launders, and slurry will flow by gravity through the tank train. Each tank will be fitted with a dual stage mechanical agitator to ensure uniform mixing. The tanks will be constructed on ring beams in a bunded area with a sloping concrete floor. Any spillage from the circuit will report to one of two sumps and can be pumped back to the circuit or to the carbon safety screen.

2.3.8 Gold Room Operations

The following operations will be carried out in the stripping and gold room areas, which operate 7 days per week, however most of the loaded carbon preparation and stripping occurs during day shift.

The operation involves:

- Acid washing of carbon;
- Stripping of gold from loaded carbon using a split AARL circuit;
- Electrowinning of gold from pregnant solution; and
- Smelting of electrowinning products.

Acid washing of the carbon commences after carbon transfer is complete, with a dilute solution of hydrochloric acid circulated through the column to remove contaminants, predominantly carbonates, from the loaded carbon. Following this, the carbon bed is rinsed with water, with dilute acid and rinse water disposed in the tailings hopper.

The split-AARL stripping circuit consists of separate acid wash and elution columns. Loaded carbon will be recovered on the loaded carbon recovery screen and directed to the acid wash and elution column manually, with all other aspects automated.

Elution and Electrowinning is via sodium hydroxide and sodium cyanide metered into the strip solution pump suction. The temperature of the incoming barren solution is raised to 130°C, and the heated, barren strip solution will flow upwards through the bed eluting gold and silver from the loaded carbon. The pregnant solution exiting the top of the column will be cooled through the recuperative heat exchanger and pre-heating the incoming barren strip solution in the process.

Once the elution process is complete, pregnant solution is pumped to two parallel electrowinning cells. The electrowinning cycle will continue until the solution exiting the electrowinning cells is depleted of gold and silver values, with the barren solution pumped to the head of the CIL circuit over the course of several hours to minimise dilution of the slurry.

The electroplated silver and gold will be removed from the cathodes by washing with high pressure water jets. The resulting sludge is filtered in laboratory style pressure filters and the solids then dried in an oven. The sludge is then direct smelted in a furnace with fluxes to produce doré bars, and slag from smelting is returned to the milling circuit. Fume extraction equipment will remove gases from the cells, oven, and barring furnace.

After completion of the elution process, the barren carbon is dewatered prior to entering the horizontal carbon regeneration kiln. The carbon will be heated to 650 - 750°C and held at this temperature for 15 minutes to allow regeneration to occur. Regenerated carbon from the kiln will be quenched and sized on a carbon sizing screen. The screen oversize (regenerated, sized carbon) will report to the quench tank, from where it will be pumped to the CIL circuit.

2.3.9 Tailings Deposition

Final tailings from the leaching and adsorption circuit will be screened over the tailings screen to recover any carbon which has escaped the inter-stage screens and gravitated to the tailings hopper. The final tailings slurry will then be pumped to Tailings Storage Facility (TSF3) using one of the two tailings pumps, arranged in duty/standby configuration. Supernatant water from the TSF3 decant is returned to the process water pond for re-use in the plant. Underdrainage and seepage collection will be returned back to TSF3.

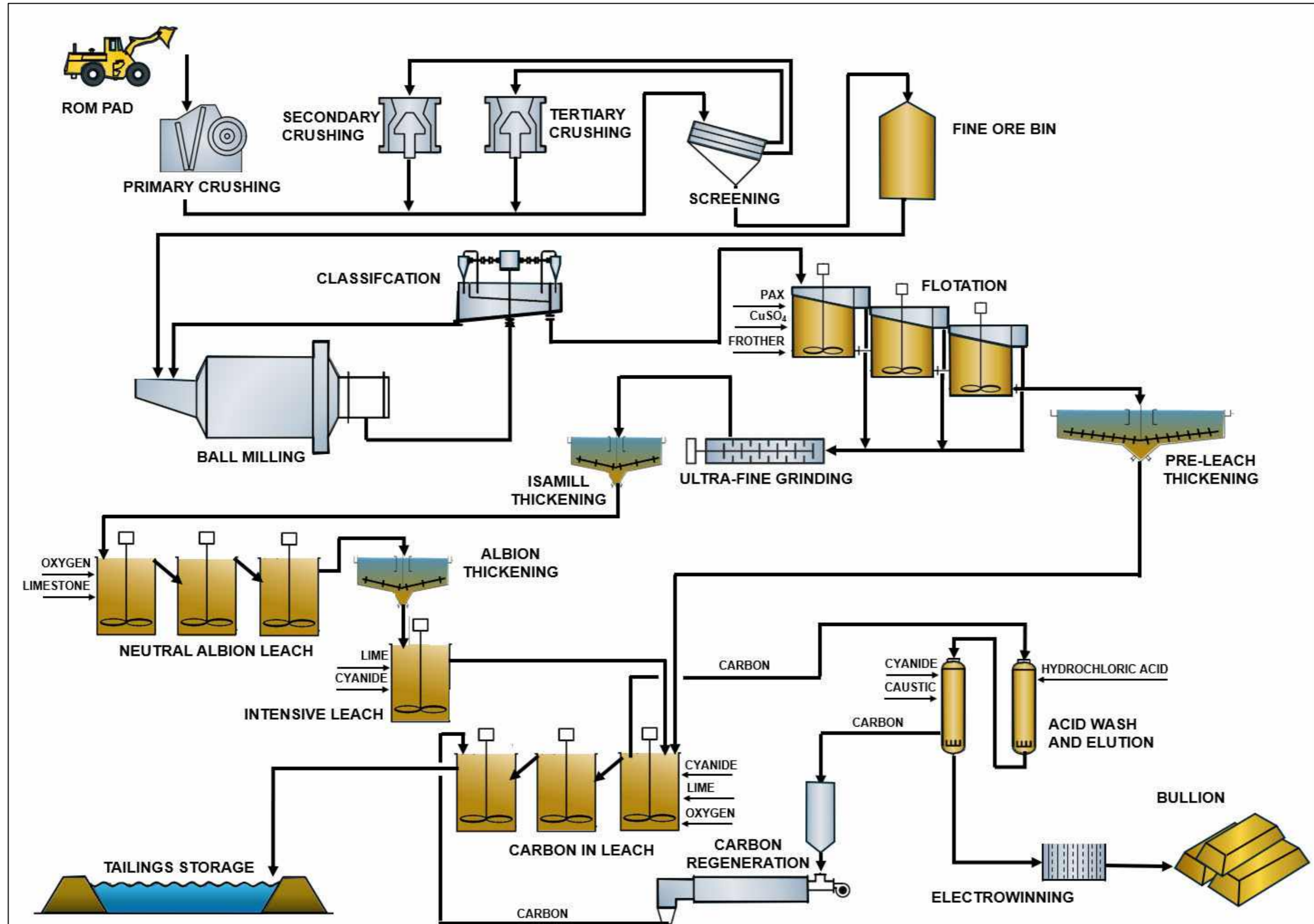
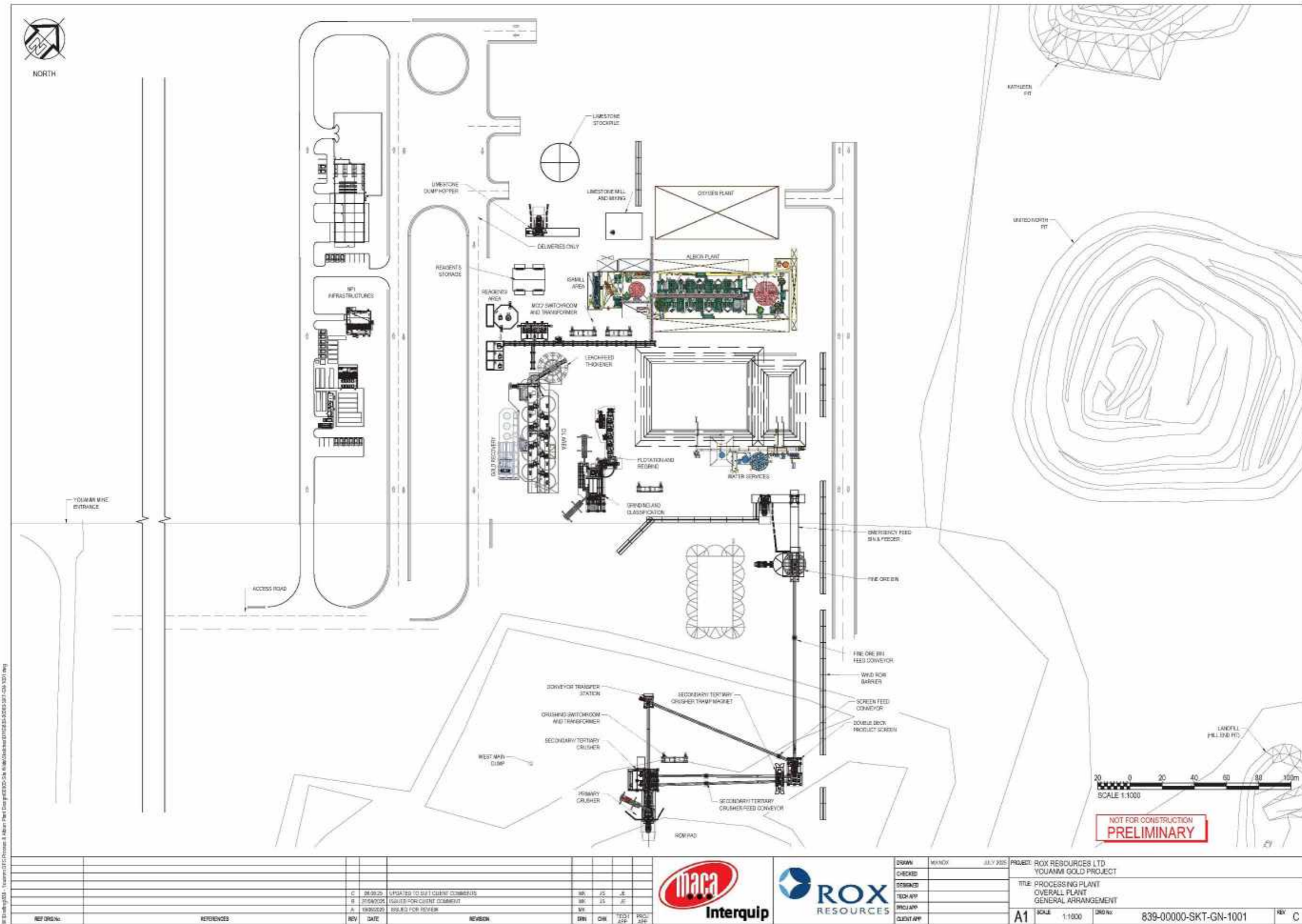


Figure 3: Proposed Processing Flowsheet



				DRAWN: MEX/NOX CHECKED: DESIGNED: TECH/APP: PROJ/APP: CLIENT/APP:	PROJECT: ROX RESOURCES LTD YOUAMM GOLD PROJECT TITLE: PROCESSING PLANT OVERALL PLANT GENERAL ARRANGEMENT SCALE: 1:1000 DRAW NO: 839-00000-SKT-GN-1001 REV: C
REV	DATE	DESCRIPTION	BY	CHK	PROJ. APP.
C	20.09.20	UPDATED TO SUIT CLIENT COMMENTS	MB	JS	JL
B	27.04.20	ISSUED FOR CLIENT COMMENT	MB	TS	AT
A	19.02.20	ISSUED FOR REVIEW	MB	CH	TED1/APP

Figure 4: Processing Plant - General Arrangement

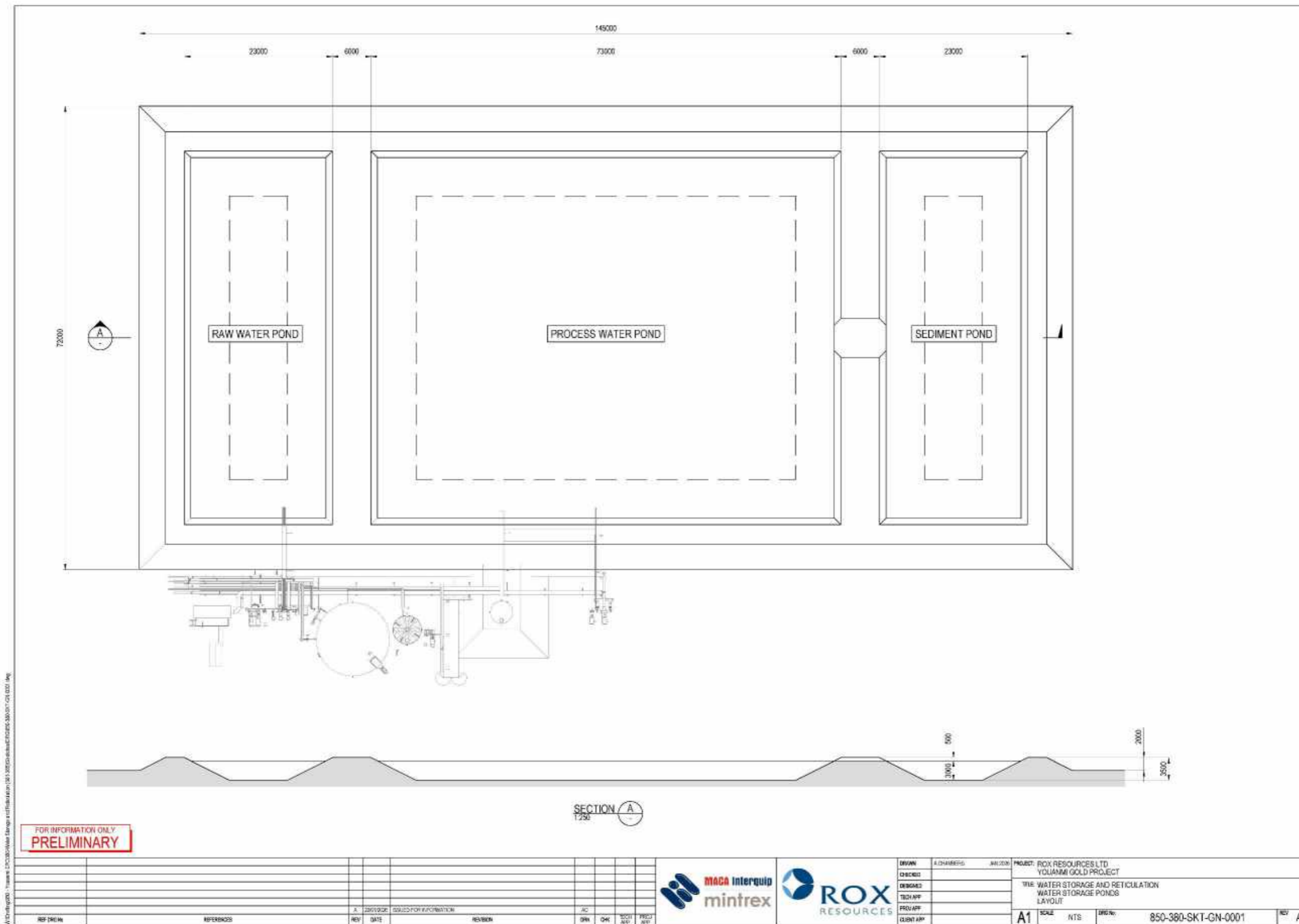


Figure 5: Process Water Ponds - General Arrangement

2.4 Processing Inputs

2.4.1 Reagents

Table 6 below shows the chemical reagents to be stored on site, their respective storage method and volumes where known, plus containment and pollution controls. All chemicals will be effectively banded to contain leaks or spills. Transport and storage will comply with the Dangerous Goods Act (2004) where required and all statutory requirements. Safety Data Sheets (SDS) for all chemicals will be available at the storage locations and designated areas such as offices, workshops, crib rooms etc, for access by staff and contractors as required.

Table 6: Chemical reagents to be stored on site

Chemical	Storage method	Containment and Pollution Control
Hydrated lime	75 tonne bulk storage	<ul style="list-style-type: none"> A rotary valve, which controls the discharge rate of lime to mill feed conveyor; A dust collection, including maintenance access, installed on top of the lime silo to contain dust emissions during pneumatic loading process.
Xanthate	1000 kg intermediate bulk containers (IBC).	<ul style="list-style-type: none"> Distributed to the flotation circuit via dedicated variable speed dosing pumps. A level indicator will provide continuous level readings of the storage tank to the control system
Frother	1000 kg intermediate bulk containers (IBC).	<ul style="list-style-type: none"> Distributed to the flotation circuit via dedicated variable speed dosing pumps. A level indicator will provide continuous level readings of the storage tank to the control system
Cyanide	<ul style="list-style-type: none"> 70 m³ mixing tank; and 70 m³ cyanide storage tank 	<ul style="list-style-type: none"> The cyanide mixing and storage tanks will be contained within a secure, banded concrete area, with a collection sump to recover spillage; Distributed from the storage to the mixing tank; Control valves and flowmeters to regulate the flow as required.
Sodium hydroxide	1000 bulk storage tank	<ul style="list-style-type: none"> Located in the same banded containment as cyanide.
Hydrochloric acid	800 kg intermediate bulk containers (IBC).	<ul style="list-style-type: none"> Located within a concrete bund to comply with dangerous goods and statutory requirements.
Activated Carbon	600 kg intermediate bulk containers (IBC).	<ul style="list-style-type: none"> Stored in containers our under tarpaulins.
Flocculant	25 kg bags	<ul style="list-style-type: none"> Stored in containers our under tarpaulins.
Sodium metabisulphite (SMBS)	800 kg intermediate bulk containers (IBC).	<ul style="list-style-type: none"> Stored in containers our under tarpaulins; Distributed from storage tanks to the mixing tank.
Copper sulphate	800 kg intermediate bulk containers (IBC).	<ul style="list-style-type: none"> Stored in containers our under tarpaulins; Copper sulphate distributed to the cyanide destruction circuit via duty/standby variable speed dosing pumps.

Chemical	Storage method	Containment and Pollution Control
Antiscalant	1,000 litre bulk boxes or 200 litre drums.	<ul style="list-style-type: none"> Stored in bulk boxes or drums or under tarpaulins within a concrete bunded area.
Limestone	68 tonnes stockpile	Stored within the processing plant footprint

2.4.2 Water Supply

Water for the processing plant will be supplied primarily from saline mine dewater stored within Kathleen and Rebel Pits, supplemented by decant water returned from the TSF. Fresh water will be supplied from Bunker bore and / or dedicated supply bores. Water is abstracted under authority of groundwater licence; GWL 208485, issued pursuant to section 5C of the *Rights in Water and Irrigation Act 1914* (RIWI Act) and associated Regulations.

Further information on site water supply is provided in Section 8.1.1: Water Supply, also Section 13.2: Ground & Surface Water.

The volume required by the plant and that returned from the TSF both vary at any given time, for reasons including ore type and throughput, season, TSF construction activities etc. A site water balance model has been developed for the Youanmi Life of Mine (LoM) (AQ2 2025a) which included process plant supply and management over the Life of Mine (LOM). This determined the Plant requires (up to) an additional 1,170,000m³/annum once a steady stated of production flow is achieved from the TSF decant return.

Water quality will vary during the LOM pending depth of water in pits and underground operations. Dewatering discharge measured 50,000 mg/L TDS in April 2025 at the discharge point, which is likely to become progressively more saline over time. There are also less saline options if project requirements dictate. Bunker Pit (and bore) are low-salt (~2,300 mg/L TDS) and there is potential to develop dedicated supply bore-fields (AQ2 2025a).

Mine water is pumped firstly pumped into the raw water pond side of the Process Water Pond (PWP) (Figure 5: Process Water Ponds - General Arrangement). This enables the raw water to be kept separate from the TSF decant water, which contains residual chemicals used in the plant. Raw water is used for process water make-up and areas of the plant where it may come into human contact. Raw water is used for:

- Dust suppression;
- Fire suppression (if required);
- Gravity concentrator;
- Reagent mixes; and
- Flocculent mixes.

TSF decant return water is pumped into the Process Water Pond where entrained sediment settles out. Raw water is added and this combined supply is reticulated through the plant. Process water will be distributed to various end points in the plant by the process water pumps, which will be installed in a duty/standby arrangement.

Fresh water is used where specific needs require higher quality water. It may also be subject to treatment through a Reverse Osmosis (RO) plant where quality levels supplied fall short. Fresh water uses include:

- Vehicle wash-down;
- Elution circuit and gold room;
- Administration;
- Eyewash and safety showers; and
- Ablutions.

2.5 Site Considerations

This section briefly outlines the key site conditions of the location selected for the Processing Plant. The prevailing environmental conditions of the Project area and further detail on the environmental context is provided in Section 13 Environmental Context. Section 14 consolidates details regarding Emissions, Potential Impacts & Management.

2.5.1 Geotechnical

A Geotechnical Site Investigation (GSI) of the plant site was undertaken by Tailcon (2025), involving excavation of test pits and drilling of boreholes to characterise the subsurface lithology. The results of the investigation informed preliminary assessment of ground conditions to support design and construction of the processing plant.

Overall, the proposed plant site appears to be geotechnically competent. Standard Penetration Test (SPT) results show very high N-values, with several locations reaching refusal, indicative of very dense materials.

2.5.2 Hydrology

A hydrology study was undertaken for Project feasibility studies by AQ2: Appendix 3. AQ2 (2025a). Youanmi DFS Water Studies. It was determined two catchments divided the mine development areas; Catchment A (Western Creek) and Catchment B (Eastern Creek). Hydrological (flow rates) and hydraulic surface water models have been prepared for the project. The study identified measures to reduce impacts of flooding on Project infrastructure, also to reduce environmental impacts on surface water flows.

The local catchments experience episodic rainfall, with surface water flow typically occurring during short, intense storm events. The Plant area is adjacent the main low-flow channel of Western Creek. The 1% AEP pre-development model predicts Western Creek extends marginally into the Plant footprint, at depths of up to 0.4 m (Figure 6). This is likely to have a low impact as the buildings/offices in this area would be built up in any case, to accommodate building footings and for the downward slope of the area (AQ2 2025a).



Figure 6: Process Plant - Pre-Development Flood Depth (AQ2 2025a)

2.6 Emissions, Waste & Management

2.6.1 Overview

The following sections summarise the Process Plant emissions, waste and management. Section 13 provides the full environmental context of the Project area, with potential emissions and impacts outlined in Sections 14.1. A Risk Assessment has been completed (Section 14.3) in accordance with the DWER (2020) [Guideline: Risk assessments](#), for activities prescribed under Part V, Division 3, *Environmental Protection Act 1986*.

Comprehensive emissions controls and management practices across site are detailed in Section 14.4, to be adopted as needed to ensure that environmental impacts from the Project are minimised.

2.6.2 Construction

The TSF3 footprint will be cleared of vegetation, and topsoil will be stripped to a nominal depth of 100 mm. A Native Vegetation Clearing Permit (NVCP) (Purpose Permit CPS 11021/1), approved on 8 August 2025, covers all clearing required for construction and operation of the infrastructure proposed in this application. Clearing activities will be undertaken in accordance with the conditions and requirements of this permit.

Construction of the Plant will involve a sequence of earthworks and civil activities. Initial works will include bulk earthworks to level the plant area, establish drainage pathways, and construct temporary access tracks. Excavations will be completed for concrete footings, foundations, and service trenches required to support underground electrical conduits, process water pipelines, raw water supply lines, communications cabling, and other utility services. Compaction and sub-grade preparation will be carried out prior to installation of formwork and reinforcement steel, followed by placement of concrete for footings, slabs, pedestals, and banded containment areas.

Additional construction activities will include installation of structural steelwork for platforms, walkways, and equipment supports; erection of mechanical components such as pumps, tanks, mills, and conveyor systems; and assembly of process infrastructure. Electrical and instrumentation works will involve cabling, switchroom installation, connection of motors and control systems, and commissioning of monitoring equipment. Temporary laydown areas will be used for storage of construction materials and pre-assembled components.

Construction-related emissions will primarily consist of dust, particularly during windy conditions. Dust may be generated during vegetation clearing, topsoil stripping and handling, excavation and backfilling, movement and stockpiling of materials, and operation of vehicles and mobile plant on unsealed surfaces. Additional emissions may include noise from earthmoving equipment, vibration from compaction works, and minor hydrocarbon emissions from machinery.

2.6.3 Tailings

The primary waste generated from the processing plant is tailings. Properties of the tailings, is detailed in Section 3.4 Tailings Properties. Section 3.5 details the TSF Design Criteria &

Assessments undertaken to safely manage the tailings, and Section 3.7 details TSF3 Controls & Management.

A TSF Operations Manual (OM) will be prepared prior to the operation of the TSF, which also guides the operation and management of containment infrastructure at the Process Plant. The OM guides operators with essential duties and tasks, including:

- Process water and decant operation;
- Routine daily inspections of tailings lines, decant systems and water return, freeboard, process water pond, embankments etc;
- Weekly / monthly management inspections;
- Monitoring and maintenance;
- Record keeping; and
- Emergency actions.

2.6.4 Dust

During operations, sources of dust from the Processing Plant can be from fixed equipment such as the crusher, conveyors and transfer points, movement of ore and waste, and operation of vehicles and machinery on unsealed roads. Dust will be managed to minimise impacts on the surrounding environment.

Dust suppression sprays will be installed on all ore transfer points, chutes and conveyors on the crusher, processing plant and materials handling areas. Routine and regular dust suppression will be conducted on roads, hardstands, the ROM and all construction and operational areas using water carts, to maintain damp running surfaces that prevent dust lift-off. Water-cannons or sprinklers will be used on stockpiles or other areas not accessible to water carts, to reduce dust generation where required.

2.6.5 Noise

Noise will be generated during construction via earthmoving, transport and construction machinery, tools and equipment, and during operations from the Processing Plant, Crusher, vehicles, tools and equipment.

Noise has been previously assessed at the Youanmi Gold Mine as not requiring specific management during construction, mining or processing activities. This is due to the nearest permanent resident being approximately 17 km away and considered highly unlikely to be affected by noise from the Project. No specific noise-sensitive or conservation significant fauna identified in proximity.

2.6.6 Hydrocarbons & Chemicals

Waste oil and hydrocarbon contaminated waste will be generated during construction and operation of the Processing Plant, through servicing of vehicles, mobile and fixed plant, and other machinery. Leaks and spills of hydrocarbons or chemicals can occur during refuelling or servicing, or from transport or storage containment.

Hydrocarbon or chemicals can contaminate the soil directly at the spill site, and can also be spread further than the immediate impacted area via surface water contaminated runoff. This can result in soil, groundwater and surface water pollution and vegetation death or reduction in vegetation health downstream.

All hazardous chemicals, fuels, hydrocarbons, and associated wastes will be stored within bunded containment areas in accordance with relevant Australian Standards. Plant, vehicles, and machinery will be routinely serviced and maintained, preferably within designated workshop areas to minimise the risk of spills. Waste oils and hydrocarbon wastes will be removed from site by licensed contractors.

Any spills will be contained, controlled, and cleaned up immediately. Contaminated soil from spill sites or runoff pathways will be excavated and treated at the on-site bioremediation pads or transported off-site to a licensed facility. Washdown water from hardstand areas and the washdown bay will be directed to an oil-water separator for treatment, with separated sludge transferred to the bioremediation area.

2.6.7 Saline Water

Groundwater at the Project is generally brackish to weakly saline at shallow depths, increasing to hypersaline at depth in the underground workings, particularly in Youanmi Deeps (AQ2 2025a). Salinity of a sample in April 2025 from the dewatering discharge point was 50,000 mg/L TDS (hypersaline), which is likely to increase as dewatering continues. Dewater will be the primary supply for the Processing Plant, also dust suppression around site.

Leaks or spills of saline water can potentially occur during all stages of the project, due to failure of pipelines, inadequate storage facilities or operational incidents. Potential impacts include increase in soil and surface water salinity (contamination) leading to vegetation death or reduction in vegetation health in the immediate vicinity.

Overtopping of storage containment can potentially lead to saline water discharge to the environment and flowing downstream or migrating with surface water flow. This can lead to vegetation death or decline and soil contamination over a larger area, potentially outside of the Prescribed Premises boundary.

Over-spray during dust suppression onto adjacent vegetation can lead to soil contamination and vegetation death or decline in the immediate vicinity. Overwatering roads can cause salt levels to build up and potentially washed downstream by surface water flows, contaminating soil and impacting vegetation health. Salt from spills can also be transported by surface water and impact downstream environment.

The Process Water Ponds (Figure 5) will be lined with high-density polyethylene (HDPE) liner, with fauna egress matting in all lined ponds. The capacity of the Raw Water Pond is 1,000 m³ and the Process Water Pond 9,000 m³, with a freeboard of 500 mm maintained at all times. Water-level sensors will be installed, with both high and low-water alarms linked to automatic supply cut-off switches if the safe operating level is breached.

Pipelines containing saline water will be fully bunded to contain potential leak or spills, with electromagnetic flow meters, pressure sensors and / or telemetric systems installed for constant monitoring and shutdown in the event of failure. Dust suppression preferentially using dribble-bars to prevent overspray, and actively managed to minimise over-watering and salt build-up on roads and hardstand areas.

2.6.8 Stormwater

The Processing Area extends into the Western Creek flood plain. To reduce the risk of flooding on this key infrastructure area, it is proposed the Processing Area is constructed on an earth pad

elevated above the predicted flood plain flood depth. Flood levels and flow velocities around the toe of the earth pad were predicted in the 2D flood model to provide design criteria for the pad (AQ2 2025a).

Figure 7 below shows the post development flood map at the Processing Area. The recommended earth pad elevation includes a 300 mm freeboard allowance above the predicted 1% AEP flood levels. This ranges from 463 mRL in the north (about 0.8 m above the terrain) to 463.2 mRL in the south (0.3 to 0.4 above the terrain).

The predicted flood velocities in the 1% AEP flood event in Processing Area predicted to be typically less than 0.5 m/s. The building area pad will be constructed to withstand scouring at these velocities, and appropriate erosion protection measures installed where required.

Plant areas subject to possible contamination from chemical or slurry spills will generally have concrete slabs and bunds capable of containing 110% of the capacity of the largest tank within the bunded area. Bunded areas will be equipped with sump pumps to recover any spilled material or rain falling on the slabs, for reclaiming and re-use in the plant.

Rainfall run-off from non-bunded areas within the main plant area will be collected in a run-off collection dam (event pond) from which it will be reclaimed by portable pump. Run-off from areas not subject to possible contamination will be diverted around the plant area to re-join natural watercourses.



Figure 7: Process Plant - Post-Development Flood Depth (AQ2 2025a)

2.6.9 Putrescible & General Waste

Development of the project will increase generation of putrescible and general waste. Putrescible waste is generated from the village accommodation and site crib rooms. General waste is generated by packaging of supply items, and general industrial waste from construction

and operations. All putrescible and general waste that cannot be reused or recycled will be disposed to the site landfill. No changes are proposed to the existing management of the landfill.

3 TAILINGS STORAGE FACILITY (TSF) – CATEGORY 5

3.1 Design Overview

Rox proposes to construct a new Tailings Storage Facility (TSF) at Youanmi, primarily in M57/51 and partly M57/165 (Figure 2). The new TSF (TSF3) has been designed to store all of the tailings scheduled to be produced over the Life of Mine (LOM). The two existing facilities at Youanmi (TSF1 and TSF2) have both been decommissioned and remain inactive.

TailCon Projects was engaged to develop the TSF3 design, with the full design report provided in Appendix 2. Tailcon (2025a). TSF3 Detailed Design Report. An overview of key elements is provided below and in the following sections.

Tailings Storage Facility 3 (TSF3) is strategically located on the northeast side of the project area. The site was selected based on comprehensive assessments of storage capacity requirements, geotechnical suitability, proximity to the processing plant, successful sterilisation drilling program and alignment with the Life of Mine (LoM) plan (Tail Con 2025).

The facility's design incorporates staged construction to support operational flexibility and integrated water management systems to ensure environmental compliance. It has strategic placement to facilitate future expansion and long-term site sustainability (Tail Con 2025).

The proposed TSF3 has been designed to safely contain approximately 10.7 million tonnes of tailings over the life of mine, based on an assumed dry density of 1.45 t/m³. The facility will be developed in stages, commencing with the construction of an 8 m high starter embankment to RL 462 m. Five subsequent upstream embankment raises of 3 m each take the final design height to RL 477 m.

The general dimensions and capacity provided by each raise is provided in Table 7 below.

Table 7: Storage Capacity by stage

Stage	Capacity (years)	Storage Capacity (mt)	Storage Capacity – Cumulative (Mt)	Embankment Crest Elevation (m RL)	Stage Raise Height (m)
Starter	2.2	2.2	2.2	462	8
1	1.9	1.9	4.0	465	3
2	1.9	1.9	5.9	468	3
3	1.7	1.7	7.6	471	3
4	1.6	1.6	9.2	474	3
5	1.5	1.5	10.7	477	3

This initial (starter embankment) stage provides storage capacity of approximately 2.2 Mt, which is sufficient to support the first two years of tailings deposition. The starter dam impoundment area will cover an area of approximately 42.9 hectares, offering ample surface area for efficient tailings deposition. This optimized geometry supports improved tailings consolidation, which is critical for achieving long-term geotechnical stability (TailCon 2025).

Tailings will be conveyed to TSF3 via a bunded high density polyethylene (HDPE) pipeline. Deposition will be sub-aerially via spigots spaced approximately 25 m apart around the perimeter, to optimise deposition and facilitate controlled discharge.

The facility incorporates a centrally located rock ring structure designed to capture clean supernatant water (decant), from where it is abstracted to a designated return water dam.

To support seepage control and maintain a well-drained facility, the design includes a seepage collection drain system equipped with a subsoil drain such as MegaFlow drainage system. Additionally, a cut-off trench is provided along the entire length of the embankment upstream toe. A seepage interception drain will be installed along the east and south flanks to prevent lateral seepage outside the facility footprint. Solution recovered from the underdrainage and decant systems will be pumped back to the plant for re-use in the process circuit.

3.2 Design Drawings

The key engineering design drawings for TSF 3 are provided below:

- Figure 8: TSF3 - Site Layout Plan (TailCon 2025a);
- Figure 9: TSF3 - Starter Embankment (TailCon 2025a);
- Figure 10: TSF3 - Stage 5 Embankment (TailCon 2025a);
- Figure 11: TSF3 - Embankment Sections (TailCon 2025a);
- Figure 12: TSF3 – Seepage Management Detail (TailCon 2025a); and
- Figure 13: TSF3 – Monitoring Instrumentation Detail (TailCon 2025a)

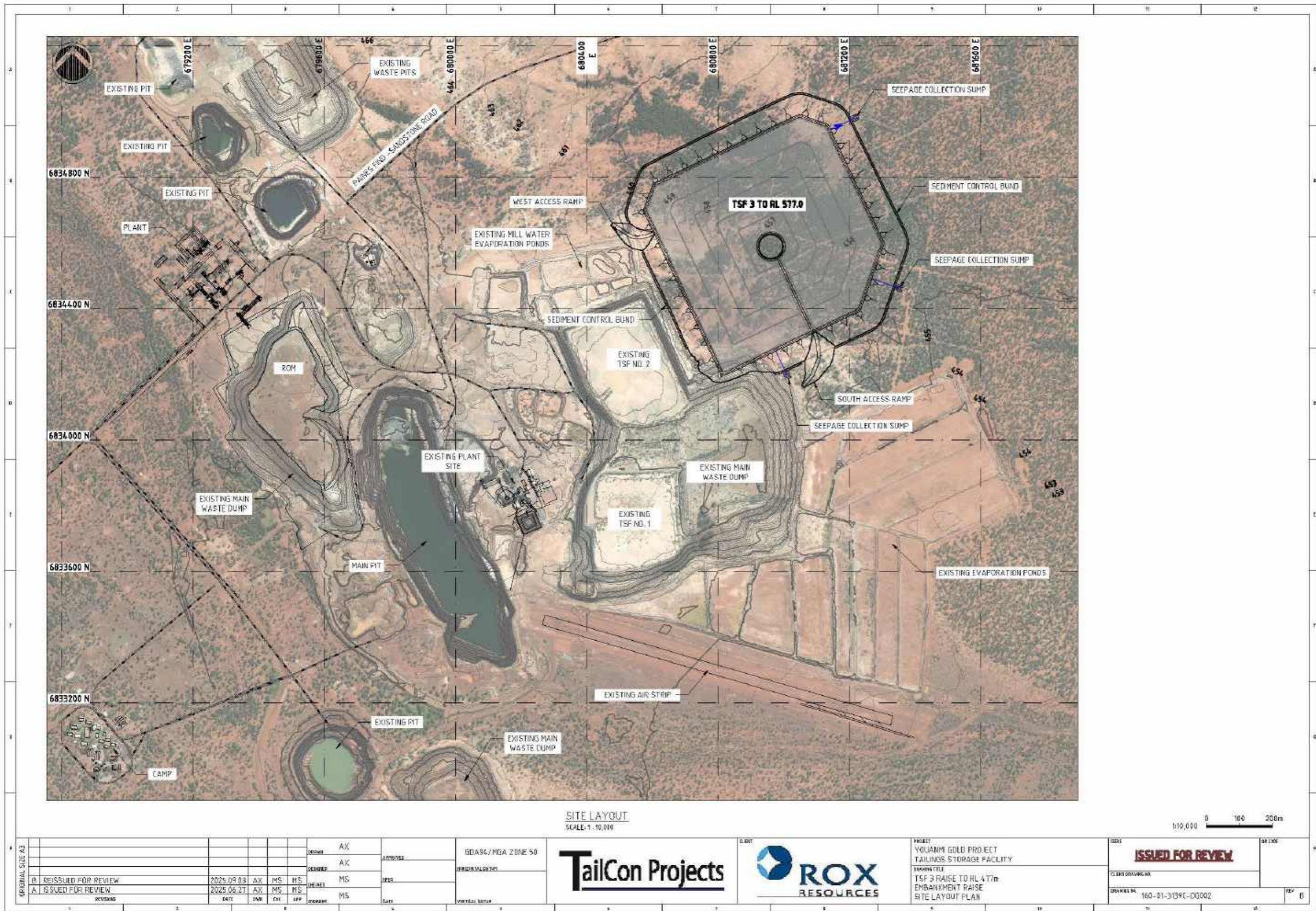


Figure 8: TSF3 - Site Layout Plan (TailCon 2025a)

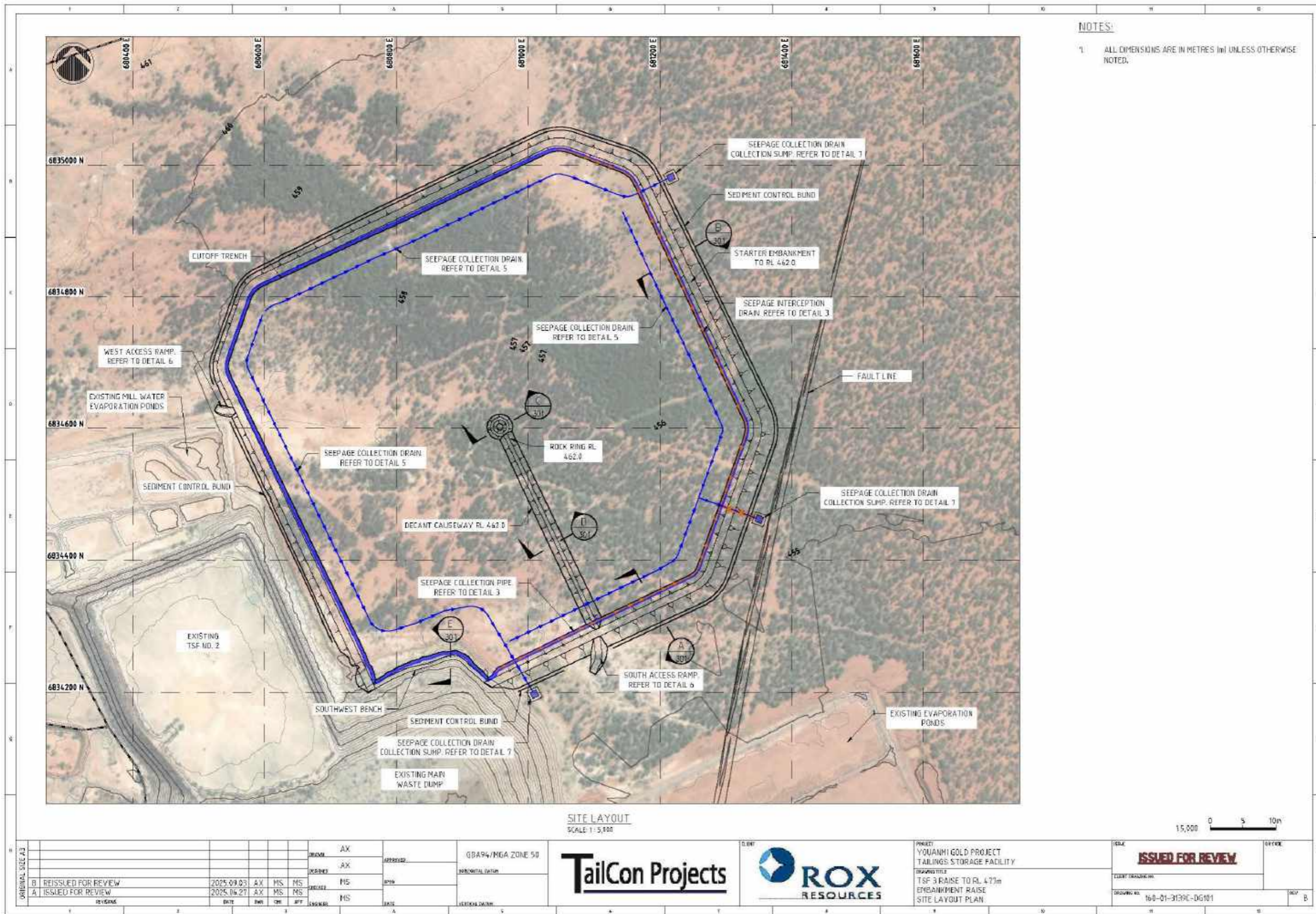


Figure 9: TSF3 - Starter Embankment (TailCon 2025a)

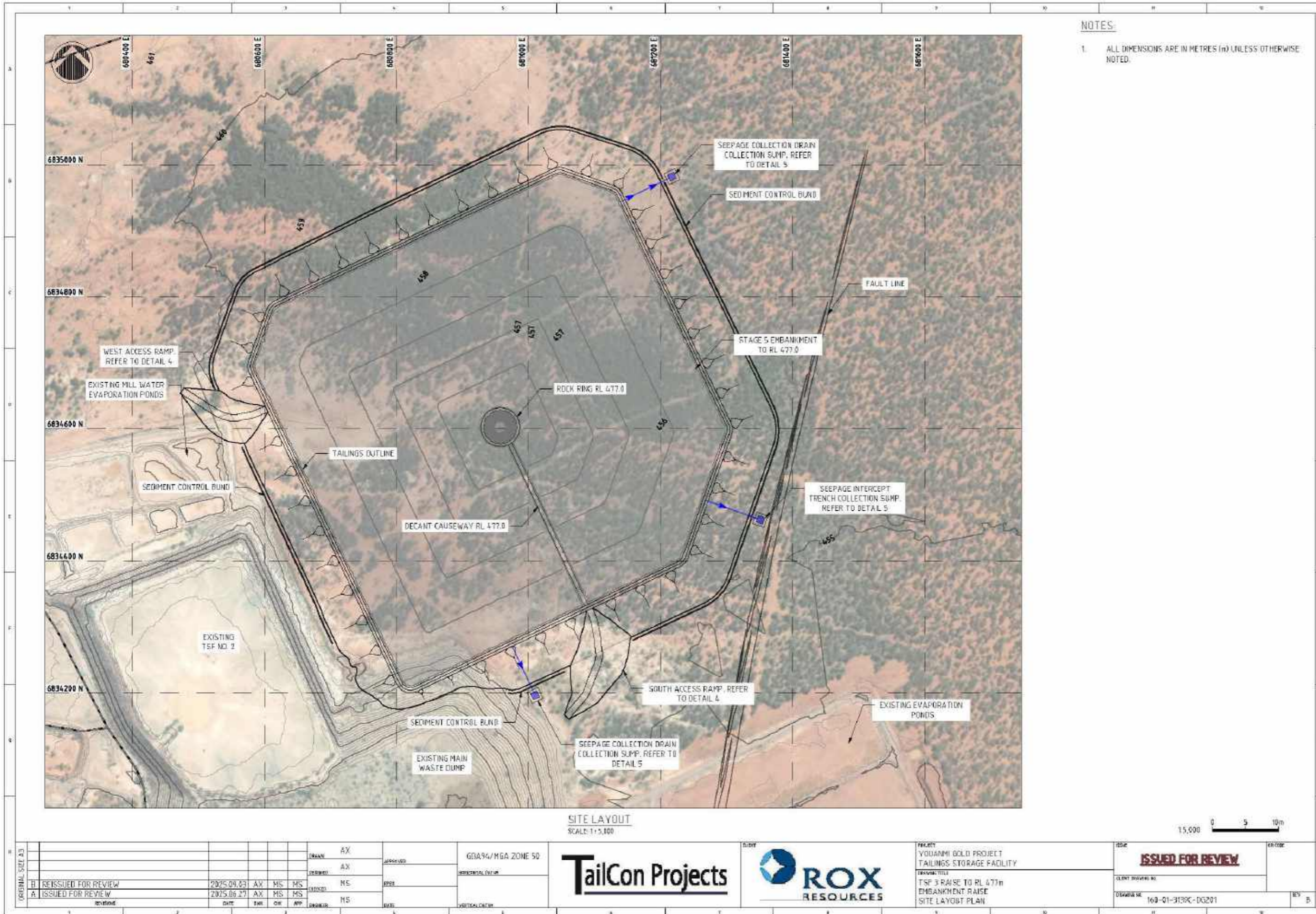


Figure 10: TSF3 - Stage 5 Embankment (TailCon 2025a)

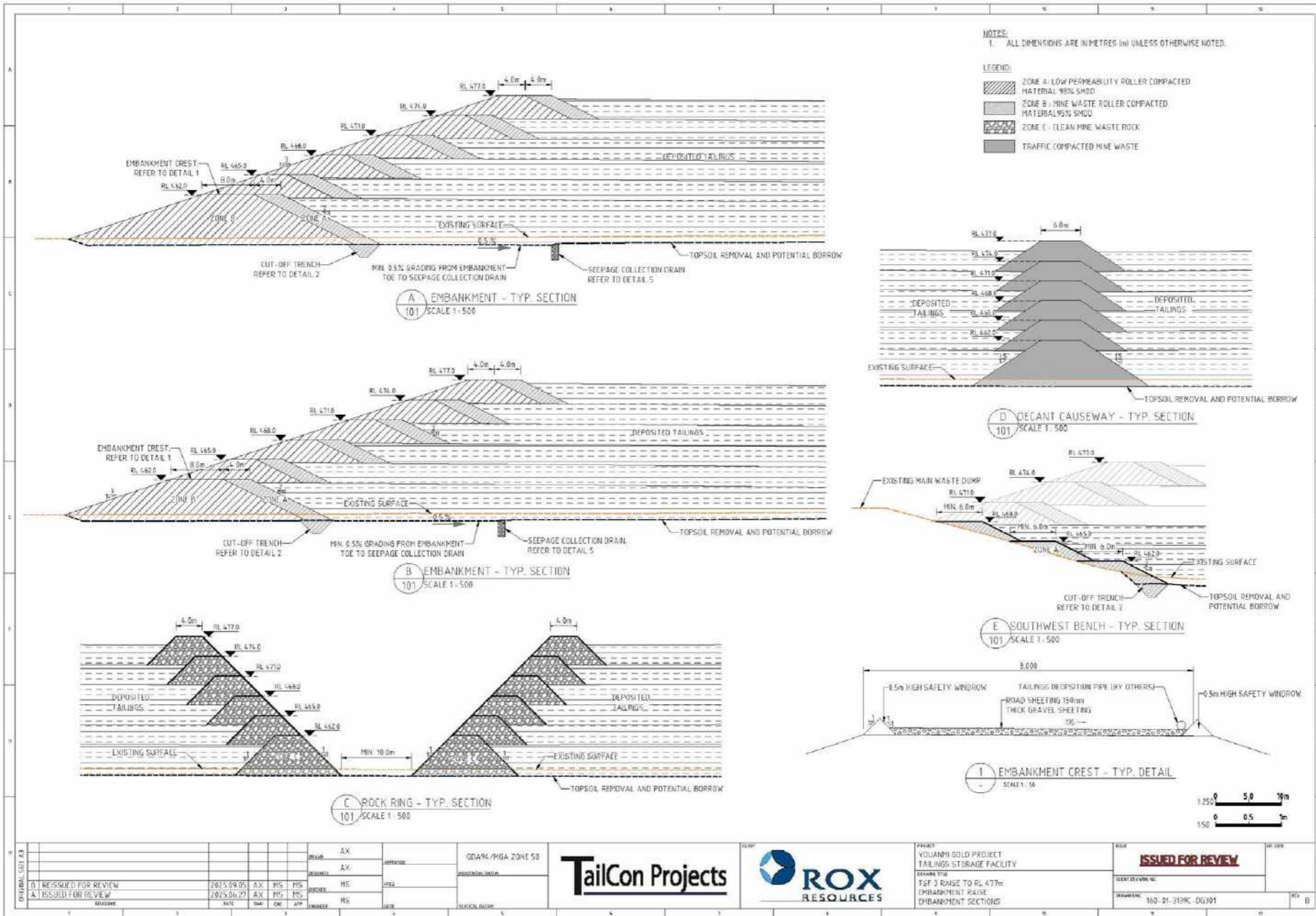


Figure 11: TSF3 - Embankment Sections (TailCon 2025a)

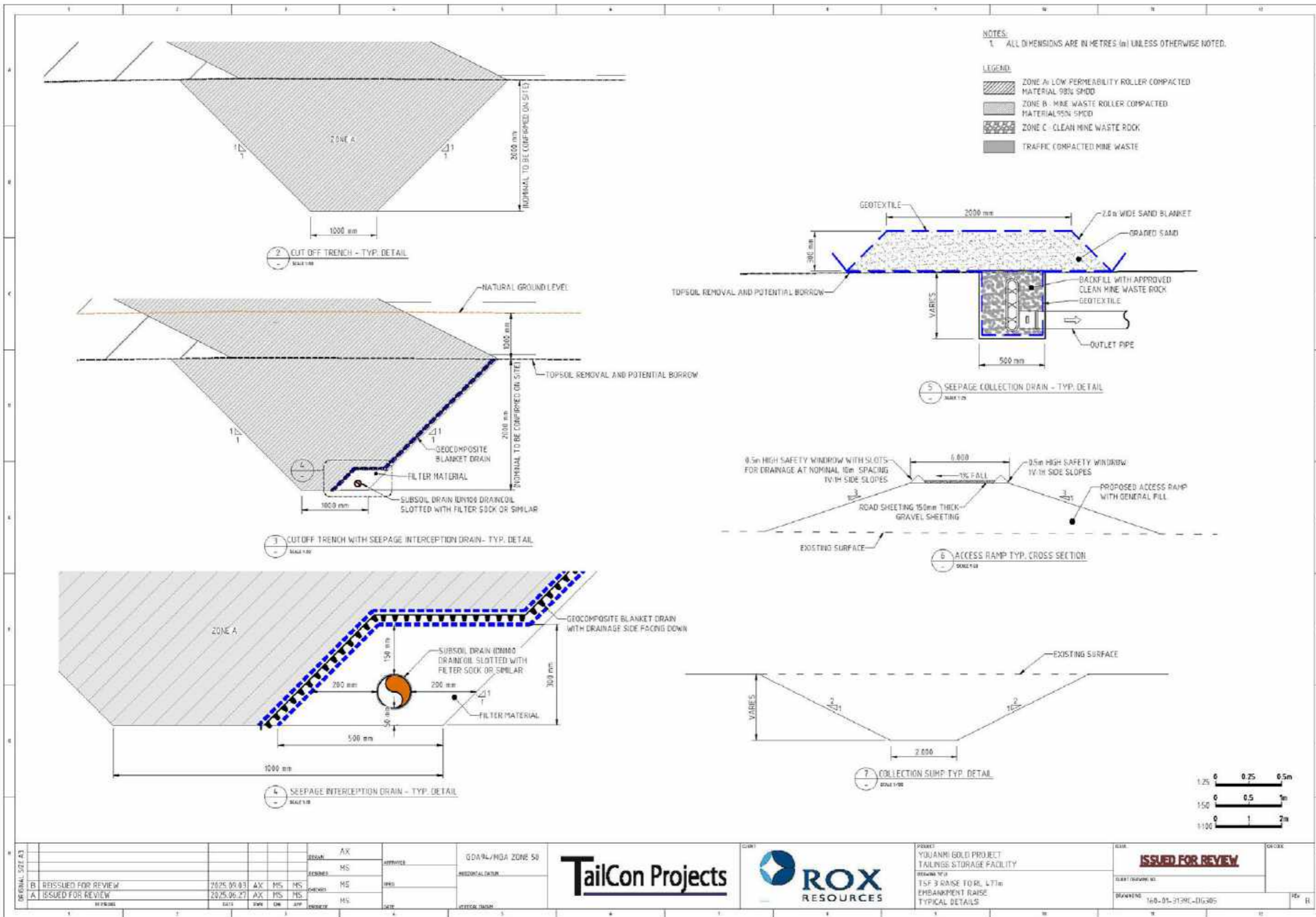


Figure 12: TSF3 – Seepage Management Detail (TailCon 2025a)

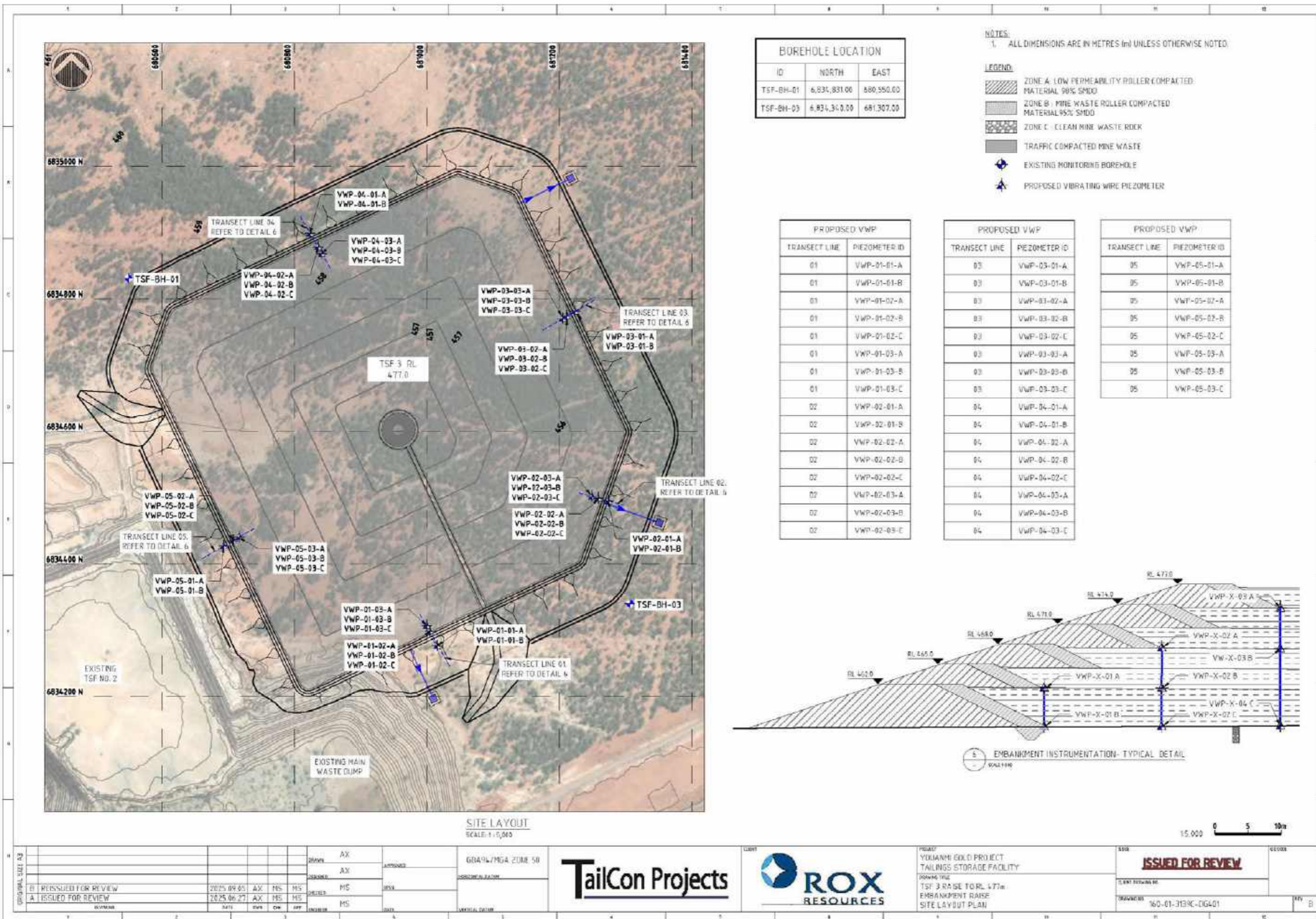


Figure 13: TSF3 – Monitoring Instrumentation Detail (TailCon 2025a)

3.3 Site Considerations

3.3.1 Introduction

This section briefly outlines the key site environmental conditions of the location selected for TSF3, which were considered and incorporated early in the engineering design process. Designs were subsequently modelled, refined and optimised to achieve safe, sustainable tailings management over the Life of Mine (LoM). All information is from TailCom (2025a).

Further detail on the local environment of the Project area are provided in Section 13: Environmental Context, and Emissions, Potential impacts & management in Section 14.

3.3.2 Hydrology

A hydrology study was undertaken for Project feasibility studies by AQ2 in 2025, provided in Appendix 3. AQ2 (2025a). Youanmi DFS Water Studies. An assessment was completed to identify measures which may be required to reduce impacts of flooding on Youanmi mine infrastructure. Also to reduce environmental impacts of the project on surface water flows. Further details regarding hydrology in the Project area is provided in Section 13.2: Ground & Surface Water.

It was determined two catchments divided the mine development areas; Catchment A (Western Creek) and Catchment B (Eastern Creek). TSF2 is located in Catchment B and potentially could be impacted by flooding of Eastern Creek.

The local catchments experience episodic rainfall, with surface water flow typically occurring during short, intense storm events. Hydrological (flow rates) and hydraulic surface water models have been prepared for the project. The 1% AEP flood depth map of the pre-development (Figure 14 below), and flood velocity (Figure 15 below), show the following:

- The 1% AEP Eastern Creek floodplain is predicted to extend into the southeast corner of the proposed TSF footprint;
- Runoff from a local drainage line crosses the TSF footprint. The runoff is generated locally from the ridge line and historic waste dump;
- Flow velocities typically <0.5 m/s predicted within the Eastern Creek catchment, and generally <0.25 m/s around the toe of the TSF. Velocities predicted to be between 0.25 m/s and 0.5 m/s occur in the southeast corner of the TSF.

Potential surface water risks associated with the TSF are therefore:

- Increased flood levels in Eastern Creek caused by the encroachment of the TSF into the Eastern Creek floodplain;
- Ponding of runoff from the local drainage line on the northern side of the TSF; and
- Erosion of the toe of the TSF during flood events.



Figure 14: Pre-Development Flood Depth – TSF3 (AQ2 2025a)

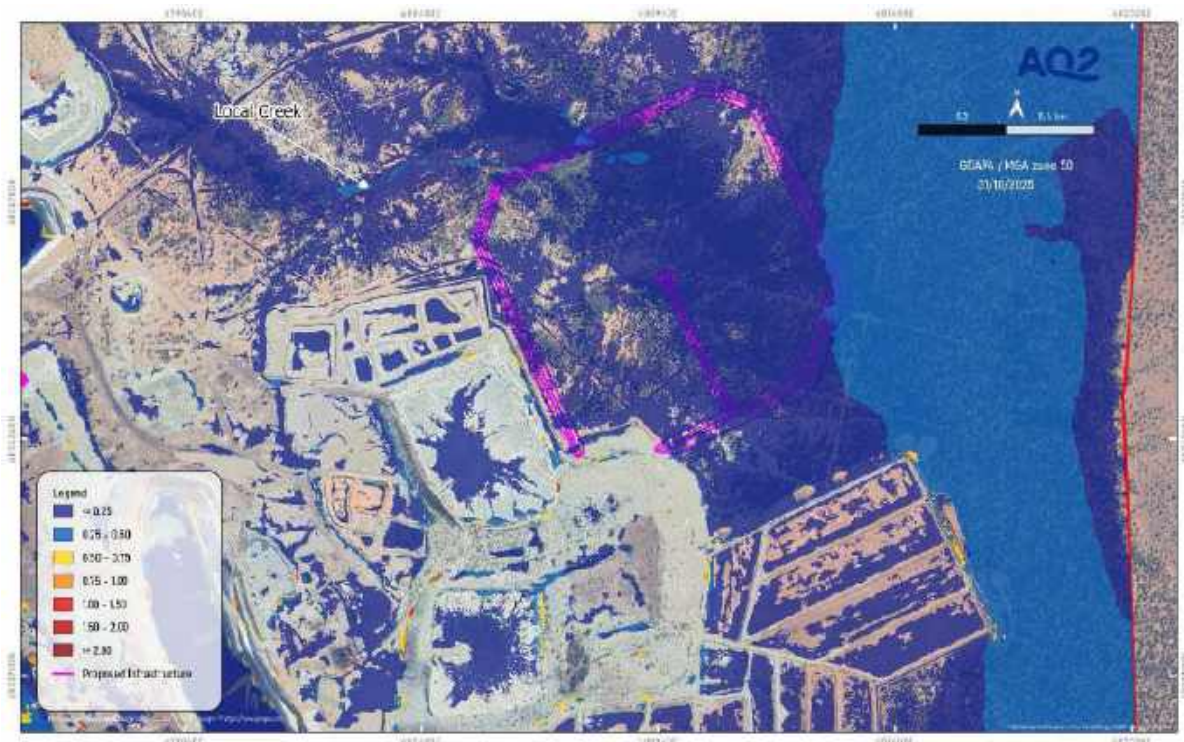


Figure 15: Pre-Developed Flood Velocity – TSF3 (AQ2 2025a)

3.3.3 Hydrogeology

A hydrogeology study was undertaken for Project feasibility studies by AQ2 in 2025, provided in Appendix 3. AQ2 (2025a). Youanmi DFS Water Studies. Potential impacts of TSF3 on the local

groundwater regime was assessed, plus monitoring bore requirements and locations. The assessment was based on the proposed design and water balance parameters (TailCon 2025), and groundwater levels, quality and flow direction (AQ2 2025a).

Topography at the TSF3 site varies from elevations of 417 mAHD to 419 mAHD, with the ground generally sloping to the southeast. The grades are steeper around the existing pits, TSFs and waste dumps, but remain relatively flat elsewhere.

Depth to water in the area ranges from 28 to 31 mbgl, equating to 430.9 and 431.7 mAHD. Current groundwater levels are influenced by the existing pits, which are all groundwater sinks. As a result, there was groundwater flow to all pits and this flow has influenced the general groundwater flow patterns and local groundwater levels (Figure 16).

Groundwater flow direction near TSF3 is to the south west towards Main Pit. Currently, salinities in the NMB1 and NMB2 bores are ranging from 5,000 to 8,000 mg/L TDS, indicating groundwater being brackish. Groundwater is generally slightly alkaline and of sodium chloride type, with low calcium and bicarbonate concentrations (indicating limited rainfall recharge).

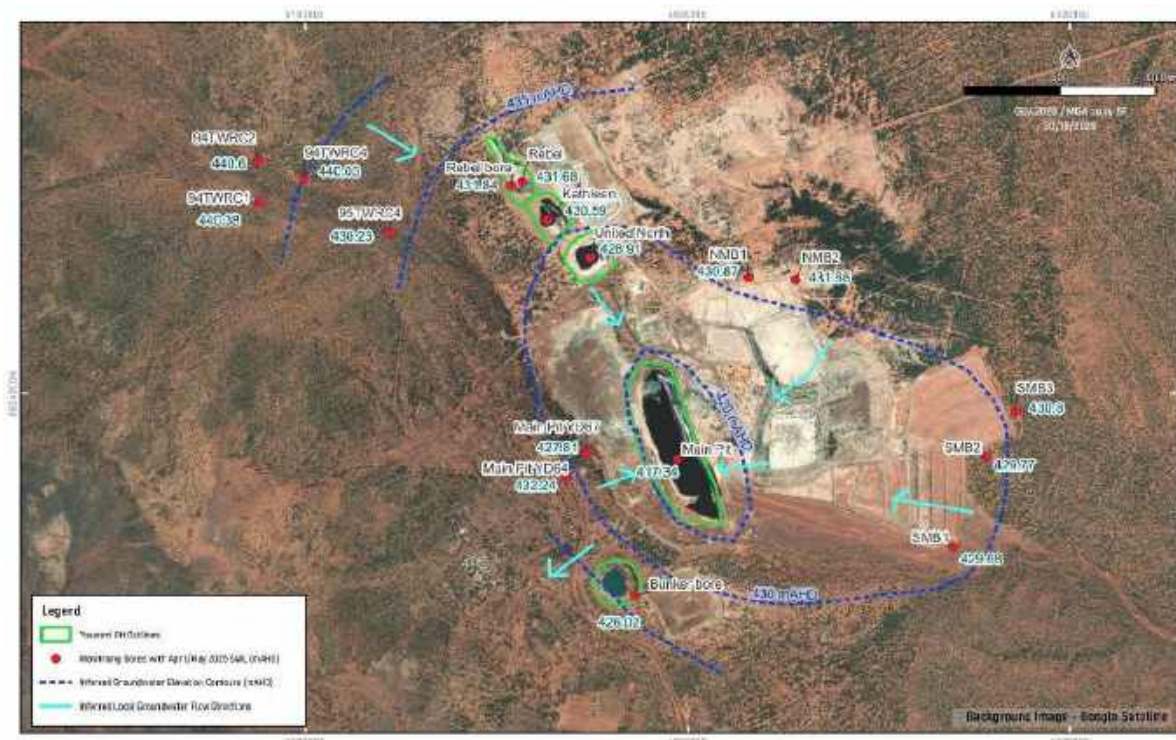


Figure 16: Groundwater and Pit-lake Water Levels (AQ2 2025a)

Features have been incorporated in the TSF3 design to minimise seepage losses, and detailed quantitative seepage analysis undertaken (TailCon 2025). The modelling indicated the seepage collection drain is effective in significantly reducing lateral seepage through the embankments and beyond the facility footprint. The modelled seepage through the embankments is minimal, at approximately 0.0004 m³/d.

The combination of low-permeability Zone A material and the cut-off trench provides additional control, further limiting seepage through and beneath the embankments. The modelled seepage through the base of the final TSF is at maximum 0.15 m³/d over 1m section, which equates to around 90 m³/d.

There will be some minor seepage through the TSF foundation, eventually making its way to the water table in the main aquifer. Seepage losses from the TSF are dependent on the nature and behaviour of the tailings once deposited (i.e., settled density, moisture content and permeability), and the nature of the TSF foundations (pre and post construction), underdrainage systems and walls.

Seepage losses will be minimal at the start of operation and gradually increase as the height of the TSF (and the pressure head in tailings liquor/decant) is raised. The fate (flow paths) of seepage once it has exited the TSF will depend upon the nature of the subsurface and local aquifers and regional groundwater flow gradients.

Seepage mechanisms and pathways away from the base of the TSF include infiltration through the unsaturated zone. Seepage will initially move vertically under the influence of gravity until it reaches the water table (in the main aquifer - transported cover/saprolite). There may be some minor shedding of seepage along the top of saprolite (base of cover material) and any such flow will follow the topography of this surface.

Potential receptors of seepage include topographic low points within or outside the prescribed premise, including minor creeks and Main Pit mine void. The seepage model predicted, after 10 years the mound to rise 5 m and extend 190 m from the TSF inside toe, rapidly decreasing to <1 m at 320 m distance. This equates with a 25 m depth to groundwater at the margins of the TSF (Figure 17).



Figure 17: TSF3 - Predicted Water Table Mound after 10 years (AQ2 2025a)

Seepage is modelled to initially flow semi-radially away from the TSF, under the influence of the water table mound. Eventually it will come under the influence of regional hydraulic gradients

and flow to the SSE towards the Main Pit. Main Pit is a long-term groundwater sink, during mining via dewatering, and post-closure.

Figure 18 below shows the interpreted seepage flow pathways from the TSF after 10 years. All seepage flow is predicted to flow to the southeast and eventually into the Main Pit; i.e., “captured” by the Main Pit (AQ2 2025a). It is not expected any seepage will flow away from the Project site, as any seepage that reaches the surface water drainage or the diversion channel will be captured by groundwater flows to Main Pit.

Water table mounding can potentially have significant impact on local vegetation and surface soils, with the inundation and/or salinisation of vegetation root systems and development of boggy and salt scalded areas at the surface. The predicted water table mound outside the TSF footprint is < 5 m, which is well below the ground surface (i.e. 25 mbgl), and also trigger levels commonly adopted (i.e., 6 mbgl investigation trigger and the 4 mbgl action trigger). No groundwater dependent ecosystems (GDEs) are known within the mounding area, thus it is highly unlikely that the proposed TSF will have adverse impacts on any GDEs.

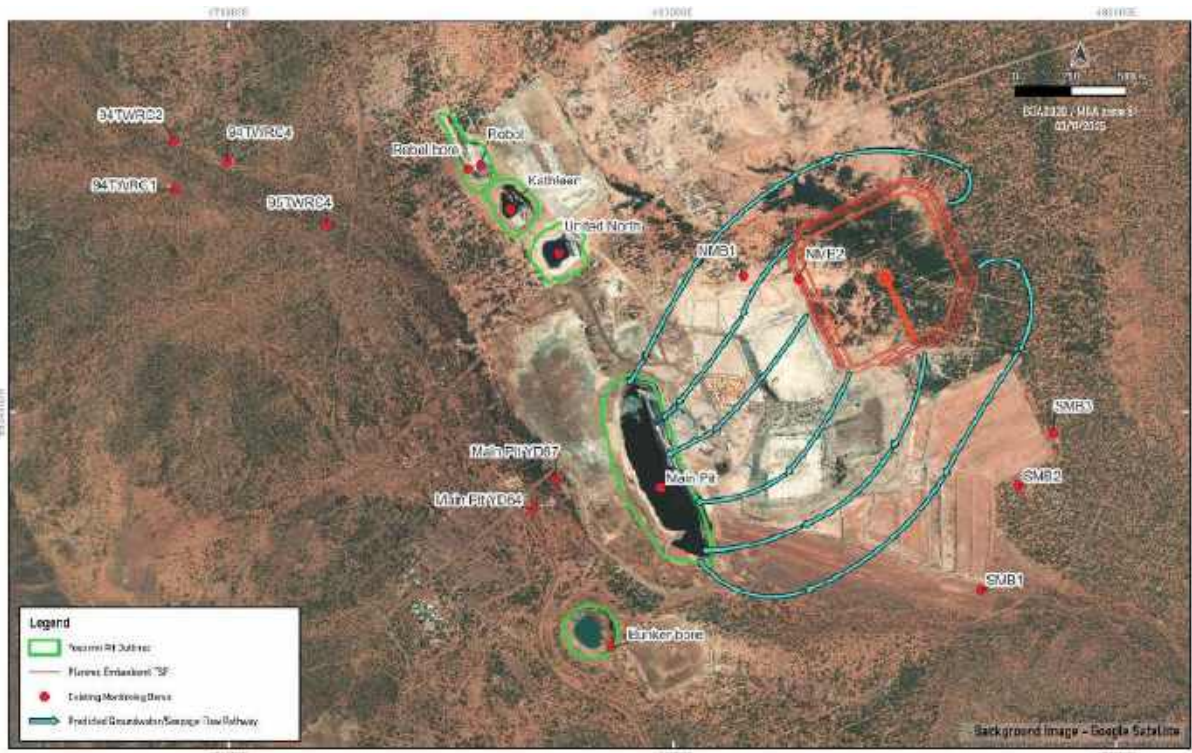


Figure 18: TSF3 - Predicted Groundwater / Seepage Flow Paths after 10 years (AQ2 2025a)

3.4 Tailings Properties

3.4.1 Particle Size Distribution and Atterberg Limits

Results of test-work indicate that the YGP tailings are sandy silt with trace clay with a plasticity index (PI) of 11.2 %. The tailings exhibit a linear shrinkage of 5.4 % and a shrinkage limit of 19.4%. Tailings are expected to exhibit predominantly fine-grained characteristics with low to moderate plasticity, with deposition optimized to promote consolidation and desiccation to enhance shear strength over time.

No significant liquefaction risk is anticipated during initial operations. However, prior to upstream raising of the facility, the long-term behaviour of the tailings will be confirmed. This will be done through a Cone Penetration Test, with pore pressure measurement (CPTu) following the completion of deposition in the starter dam and each subsequent raise. These results will provide critical geotechnical input to ensure the facility remains stable under both operational and seismic loading conditions.

3.4.2 Settlement Test

Settling testing determines the rate of tailings settlement and the development of clear supernatant water under undrained and drained conditions. Undrained testing determines the percentage of water recovered with respect to the initial volume of water in the slurry. This provides an indication of how much supernatant water will be available for recovery and the speed it is released.

The drained settling test determines the percentage of both supernatant and underdrainage water available for recovery and reuse, and the speed at which this water is released.

The settling test result indicates rapid settlement where a peak settled dry density of 1.15 t/m³ and 1.40 t/m³ for drained and undrained tests are achieved in 100 minutes and 200 minutes, respectively. The TSF is expected to perform predominantly as a drained system. Supernatant water will report to the decant location, while underdrainage will collect at the base of the facility. TSF3 is designed with an underdrainage collection system and a cut-off trench incorporating a seepage interception drain, directing seepage to a sump for recycling.

Based on laboratory test results, the facility is expected to recover approximately 35% of slurry water via the decant rock ring and around 31% through the underdrainage system, with tailings achieving a peak settled dry density of about 1.40 t/m³. Optimising the settled tailings density and supernatant recovery is also driven during operations by a sound deposition strategy and management, guided by the TSF Operations Manual.

3.4.3 Air Drying Test

An air-drying test determines the effect of natural drying on the tailings after initial settlement and removal of supernatant water, thereby simulating conditions expected following sub-aerial deposition. Continuous monitoring of the weight and volume of the specimen is carried out to quantify the relationship between dry density, moisture content, volumetric change, and the degree of saturation of the tailings.

The result indicates that peak dry density can be achieved after approximately 7 days, with consideration given to day and night cycles, seasonal temperature fluctuations and assuming that tailings are allowed to dry in cycles by means of multipoint spigotting.

3.4.4 Geochemical Classification

Geochemical analyses of the tailing's solids were completed by JT Metallurgical Services in March 2024 (JT Met 2024). Project ore has significant pyrite and arsenopyrite content and is semi-refractory in nature. The process circuit comprises a neutral-Albion oxidation leach upon a finely ground flotation sulphide concentrate, and a sulphide flotation tail fed to a cyanidation circuit

(Figure 3). Gold is recovered from acidic wash of activated carbon and electrowinning to produce gold doré (EGI 2025).

The testing indicated that the tailings had a low level of enrichment, with chromium being slightly enriched, molybdenum moderately enriched, and antimony highly enriched. The tailing solids have a low total sulphur content (predominantly as sulphide), with some acid neutralizing capacity, and therefore are expected to be non-acid-forming (NAF).

The geochemical classification plot from the JT Met. (2024) test-work is shown below in Figure 19, and the results provided in Appendix 4. JT Met (2024). Geochemical analysis of tailings.

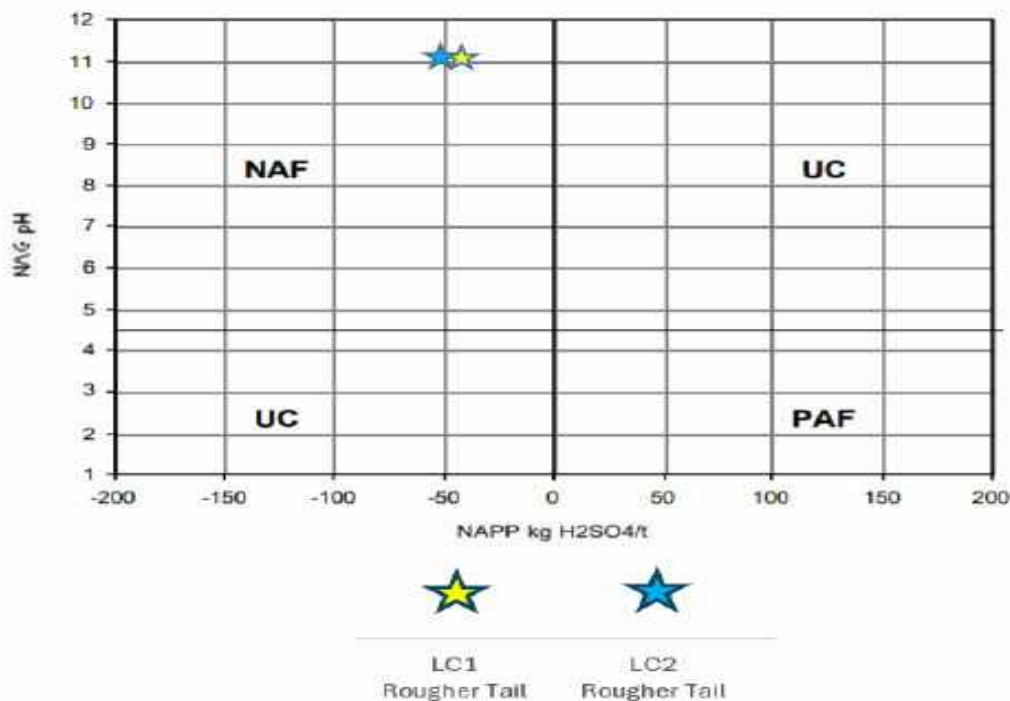


Figure 19: Geochemical Classification Plot (JT Met. 2024)

Following completion of process plant design (MACA 2025) for the Project feasibility study, Environmental Geochemistry International (EGI) has been contracted to undertake further geochemical assessment of the tailings. This work will provide further information expected to confirm geochemical attributes of the tailings stream. Particularly regarding acid-forming, elemental enrichment, hazardous material and leaching characteristics. Also any implications for operations and closure of TSF3.

The tailings waste stream is anticipated to comprise the following:

- A silicate rich fraction originating from the sulphide flotation underflow confirmed as Non-Acid Forming (NAF) (JT Met 2024) due to both low sulphide sulphur content and residual lime from the cyanidation process; and
- A fraction that is rich in post-neutral Albion oxidation leach products which are predominantly gypsum, goethite and hydrated silicates. Also potentially some sulphide sulphur content due to incomplete sulphide oxidation, however also likely to be NAF if there is sufficient residual lime from the cyanidation process. This fraction may also

contain elevated arsenic, antimony, copper and zinc due to arsenopyrite and other sulphides in the ore such as stibnite, chalcopyrite and sphalerite (EGI 2025).

Geochemical test work and analysis of two composite metallurgical tailings samples is underway, which includes the following parameters:

- Paste pH and EC;
- Total sulphur, total C, organic C, standard ANC, and single addition NAG;
- Chromium reducible sulphur, sulphate sulphur, and acid buffering characteristic curve (ABCC);
- Multi-elemental analysis;
- Water extractions upon solid fraction and analysis of supernatant (pH, EC, alkalinity, major ions and trace metals and metalloids); and
- XRD mineralogy.

3.5 Design Criteria & Assessments

3.5.1 Design Criteria

The TSF3 design criteria is summarised below in Table 8 (TailsCon 2025a).

Table 8: TSF3 Design Criteria

Design Parameter	Design Input	Reference
Consequence Category		
DMPE	Category 1	DMP (2013), now DMPE
ANCOLD	High C (Dam failure)	ANCOLD (2019)
Tailings Production		
Average Tailings Throughput	1 Mt/pa	ROX
Expected Storage	10 Mt	TailCon (2025a)
Tailings Properties		
Slurry Solids Concentration	45% solids by mass	ROX
Particle Size Distribution	Passing 0.15 mm: 96.5% Passing 75 µm: 74.1%	TailCon (2025a)
Atterberg Limits	Plastic Index: 11.2% Liquid Limit: 35.5% Plastic Limit: 23.4%	TailCon (2025a)
Specific Gravity	2.8	Assumed
Average In-situ Dry Density	1.3 – 1.5 t/m ³	Assumed
Beach Slope	0.5 – 1.0%	Assumed
Tailings Permeability	1.5 x 10 ⁻⁶ m/s	TailCon (2025a)
Geochemistry	NAF	JT Metallurgical (2024)
Stability of External Slopes		
Factors of Safety (FoS)	Static (Drained): 1.5 Static (Undrained): 1.3 Post-seismic: 1.0 to 1.2	ANCOLD (2019)
Operating Base Earthquake (OBE)	1:475 AEP	ANCOLD (2019)

Design Parameter	Design Input	Reference
Safety Evaluation Earthquake (SEE)	1:2,000 AEP	ANCOLD (2019)
Post Closure Earthquake	Maximum Credible Earthquake (MCE)	ANCOLD (2019)
Construction Material		
Material Source	Mine waste and low permeable borrow	-
Geochemistry	Benign	-
Geometry		
Final Embankment Crest Elevation	RL 477.0 m	TailCon (2025a)
Embankment Crest Width	12 m (Starter), 8m (Upstream)	TailCon (2025a)
Minimum Windrows Height	The greater between 0.5 m and ½ of the trafficking wheel diameter.	TailCon (2025a)
Embankment Slope Gradient	Upstream: 1V:2H Downstream: 1V:3H	TailCon (2025a)
Freeboard		
Design Storm Event	1:100 AEP, 72 hr flood (225 mm)	DMP (2013), now DMPE
Required Minimum Freeboard	0.5 m	DMP (2013), now DMPE
Additional Freeboard	0.5 m	TailCon (2025a)
Total Freeboard	1.0 m	-

3.5.2 Environmental Considerations

The design of the proposed TSF3 has considered the following environmental aspects:

- Perimeter embankments are designed for full containment of tailing solids during its operational phase and post closure.
- The facility has been designed, as far as practicable, to ensure that surface water encountering deposited tailings remains fully contained within the facility boundaries.
- During both construction and operation, appropriate controls will be implemented to manage dust emissions, ensuring they do not adversely impact environmental values or the health, well-being, and amenity of surrounding communities. Dust control measures will also be designed to comply with occupational exposure limits for site personnel.
- The selected location of the facility presents a low risk to downstream environments, as it is situated at a considerable distance from key environmental receptors.
- The TSF footprint, including associated infrastructure such as pipelines, toe drains, access roads, ramps, the return water pond and pump station does not impact any areas of aboriginal heritage.
- A program of instrumentation and monitoring will be implemented to track phreatic surface and groundwater levels, enabling timely identification and implementation of any necessary remedial actions.

3.5.3 Dam Break Assessment

A dam break assessment for TSF3 was conducted using Rift software, and the resulting inundation map is presented in Figure 20. The modelled scenario considers a hypothetical breach of the embankment and simulates the downstream flow of released tailings and water. A

visual review of the inundation extent indicates that, in the unlikely event of a dam failure, the release would not impact major infrastructure, except for the existing evaporation ponds, which are located near the anticipated breach point.

Flow from the breach is expected to follow the natural topography, generally moving toward the southeast creek, as shown in the inundation Figure 20. Based on the modelled flow direction and assessment of Google Earth imagery, the Population at Risk (PAR) has been conservatively estimated. The PAR includes all individuals who may be directly exposed to tailings in the event of failure, assuming no evacuation or warning. For TSF3, the PAR is conservatively estimated to be greater than 1 and up to 10 people.

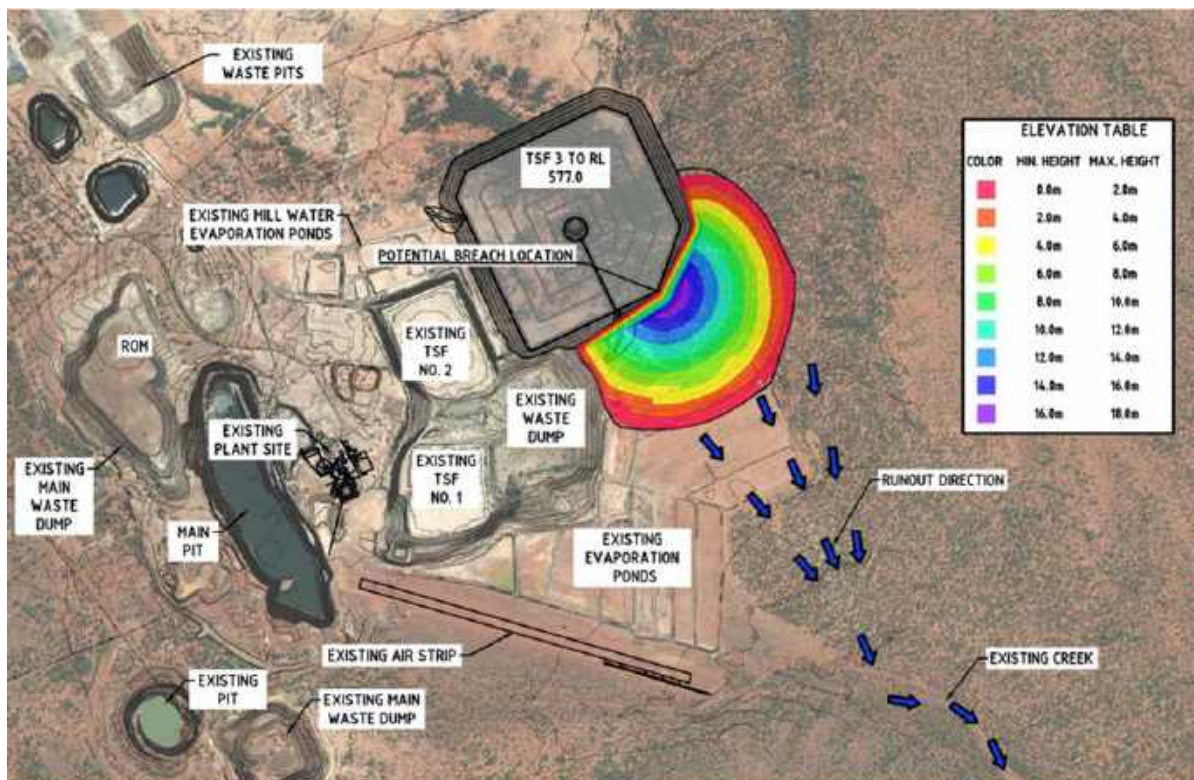


Figure 20: Dam Break Inundation mapping

3.5.4 Stability Assessment

The slope stability analysis confirms that the starter dam meets or exceeds the minimum Factors of Safety (FoS) recommended by ANCOLD under all applicable loading conditions, including static and seismic scenarios.

For the Stage 5 (final) embankment, the analysis indicates that the required minimum FoS is achieved under both static and seismic drained conditions. However, the overall stability remains sensitive to the tailing's strength parameters. These parameters should ideally be confirmed through site-specific investigations, such as CPTu testing of the deposited tailings. A comprehensive review of stability performance will be undertaken upon completion of the starter dam deposition, and adjustments to future stages will be made as necessary based on updated strength data and observation of performance.

3.5.5 Freeboard Assessment

A freeboard assessment was completed for both the starter dam and the final stage of TSF3, in accordance with the design recommendations outlined above. The purpose of this assessment is to define safe operating pond limits that ensure the minimum required freeboard of 0.5 m is maintained under design storm conditions.

For the starter dam, the available stormwater storage capacity is approximately 225,923 m³ at the 1.0 m freeboard level. To accommodate the 1:100 AEP 72-hr design storm event, the maximum operating pond volume has been set at 139,029 m³, corresponding to an operating freeboard of 1.36 m from the embankment crest. This is shown graphically below in Figure 21 (TailCon 2025a).

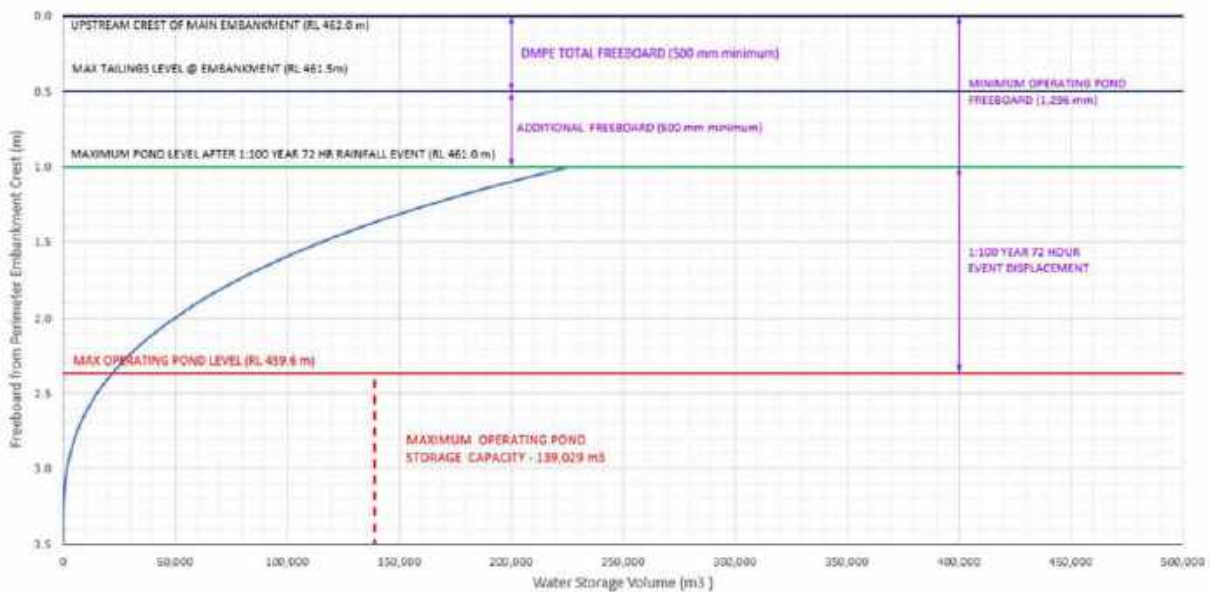


Figure 21: TSF3 Starter Dam – Freeboard Assessment (TailCon 2025a)

For the final stage of TSF3 (Stage 5), the maximum operating pond volume is set at 115,986 m³, corresponding to an operating freeboard of 1.4 m. This configuration ensures adequate capacity to safely contain the design storm event, while still maintaining the required minimum operational freeboard of 1.0 m. A graphical representation of the Stage 5 freeboard assessment is provided below in Figure 22.

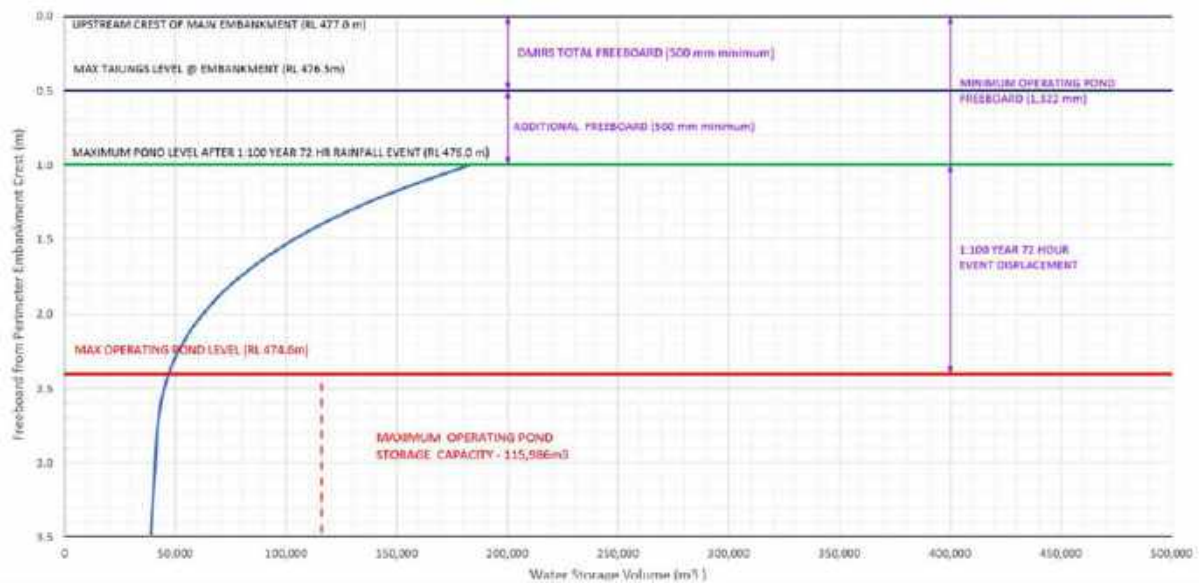


Figure 22: TSF3 Final Stage – Freeboard Assessment (TailCon 2025a)

3.5.6 Liquefaction Assessment

TSF3 is designed to store gold tailings, which are expected to exhibit predominantly fine-grained characteristics with low to moderate plasticity. The deposition strategy will be optimized to promote consolidation and desiccation, thereby enhancing the tailings' shear strength over time. Key features of the design include a central decant system and a perimeter seepage collection/interception trench, which together aim to manage water within the facility, control the phreatic surface, and improve overall tailings density.

The foundation materials beneath the proposed TSF3 embankment were evaluated during geotechnical investigations (TailCon 2025a). In-situ testing and logging data determined the sub-surface strata comprised cemented colluvium, ferricrete and silcrete hardpan, underlain by weathered granite, and decomposed or fresh rock. The nature of these materials is such that the soils exhibit high resistance to shear deformation under both static and dynamic loading. Also, the absence of contractive, loose, saturated granular soils in the foundation profile significantly limits the potential for liquefaction.

While no significant liquefaction risk is anticipated during initial operations, the long-term behaviour of the tailings will be confirmed through a Cone Penetration Test, with pore pressure measurement (CPTu) following the completion of the starter dam. These results will provide critical geotechnical input to ensure the facility remains stable under both operational and seismic loading conditions.

3.5.7 Seepage Assessment

The seepage assessment was done using the 2D slope stability software Slide2. The analysis is based on the following assumptions.

- The pond is located 100 m from the embankment;
- The natural ground water elevation at RL425 m (approx. 30 m below the ground);
- The seepage collection drain is assumed to have zero pressure;
- The seepage interception drain along the cut-off trench is not modelled – conservative;
- Material hydraulic parameters defined in Table 2-8 in TailCon (2025a).

The seepage model indicates that the seepage collection drain controls the phreatic surface development. The Wiluna Hardpan layer immediately beneath the facility, along with foundation materials at depth are expected to exhibit low permeability. With the seepage interception trench in place, seepage water is anticipated to preferentially migrate into the trench and subsequently report to the collection sump for recycling. Any potential seepage will be intercepted and pass beneath the embankment into seepage collection sumps for transfer.

Seepage results are presented in Appendix 2. Tailcon (2025a). TSF3 Detailed Design Report.

3.5.8 Water Balance Model

An annualised static water balance has been completed for the proposed TSF3 starter dam. The water balance indicates that the facility will be net water positive and that a minimum pumping capacity of 80 t/hour is required to maintain the maximum operational pond to less than 146,753 m³, as per Figure 21: TSF3 Starter Dam – Freeboard Assessment (TailCon 2025a). The water balance sheet is provided in Appendix 2. Tailcon (2025a). TSF3 Detailed Design Report.

3.6 TSF3 Construction

3.6.1 Preparation & Timing

The footprint of TSF3 will be cleared of vegetation, and the topsoil stripped to a nominal depth of 100 mm. A Native Vegetation Clearing Permit (NVCP) incorporating TSF3 has been approved on 8th August 2025: Purpose Permit - CPS 11021/1. This NVCP covers clearing for construction and operation of all TSF3 infrastructure proposed in this application. Clearing will be undertaken in accordance with requirements and conditions of this permit.

The TSF will be built continuously to the final height over the LoM utilising a specialised contractor. To meet ongoing tailings storage requirements, the facility will be raised using upstream construction in 3-meter increments, increasing the crest level from RL 462.0 m to RL 477.0 m. Timing of the staged works will be schedules of meet mine waste movement requirements such that construction is well ahead of tailings deposition and embankments have adequate freeboard.

3.6.2 Construction Zones

The proposed TSF3 embankment structure comprises two distinct material zones, a cut-off trench, and an upstream seepage collection drain, shown in Figure 11.

Zone A:

- Comprises a 1.8 m layer on upstream (internal) embankments at a 2 / 1 slope angle (4 m horizontal width at crest and toe);
- Zone A material also used in cut-off trench;
- Sourced from the facility basin or dedicated borrow pit, subject to laboratory testing;
- Functions as a low-permeability clay liner;
- Compacted to 98% of the Standard Maximum Dry Density (SMDD); and
- Hydraulic conductivity coefficient, k (m/s): 1×10^{-7} to 1×10^{-8} .

Zone B:

- Provides the bulk of the embankment interior;
- Constructed of mine waste material consisting of sandy and gravelly clay with cobbles;

- Sourced from the adjacent mine waste dump or from the Bunker Dump, subject to laboratory testing;
- Compacted to 95% SMDD; and
- Hydraulic conductivity coefficient, k (m/s): 1×10^{-6} .

The Bunker Waste Dump has been identified as a source for TSF 3 embankment material as it comprises intensely weathered sandstone, mafic saprolite (clay), and oxidised basalt and banded iron formation (BIF). Observations indicates that this material has no capacity for Acid Mine Drainage (AMD) due to its highly weathered state and absence of sulphide minerals.

Given its physical and chemical properties, the material is considered suitable for use in the construction of TSF3 embankments, subject to confirmation of geotechnical parameters (e.g., compaction, shear strength) through additional testing if required. Material properties will be confirmed prior to construction following laboratory testing on representative samples.

A bill of quantities (BoQ) for major components has been estimated (Table 9). A Scope of Works and technical specifications will be developed prior to construction.

Table 9: TSF3 Bill of Quantities (BoQ)

Stage	Zone A (m ³)	Zone B (m ³)	TOTAL (m ³)
Starter	42,613	225,257	267,870
Stage 1	33,522	91,034	124,556
Stage 2	33,315	95,336	128,651
Stage 3	33,832	99,115	132,947
Stage 4	33,165	96,032	129,197
Stage 5	32,259	93,662	125,921
Total (m ³)	208,706	700,436	909,142

3.6.3 Quality Assurance

Earthworks specification will be included in the scope of work for construction. The scope of work will include a construction quality assurance (CQA) plan and requirements for on-site third-party quality assurance (QA) monitoring. A construction completion report will be prepared by a Competent Person (typically the design engineer) following substantial completion of the TSF construction, in line with the requirements of the DMIRS CoP (DMP, 2013). The proposed facility is to be constructed and compacted in maximum lifts of 300mm to 98% and 95% SMDD for Zone A and Zone B, respectively.

3.7 TSF3 Controls & Management

3.7.1 Operations Manual

A TSF Operations, Manual (OM) will be prepared prior to the operations of the TSF3, in accordance with DMPE guideline. The OM guides operators with essential duties and tasks, including:

- Tailings deposition methodology;
- Decant operation;
- Routine daily inspections of tailings lines, decant systems and water return, freeboard, process water pond, embankments etc;

- Weekly / monthly management inspections;
- Monitoring and maintenance;
- Record keeping; and
- Emergency actions.

3.7.2 Tailings Deposition

Tailings are to be deposited via a perimeter ring pipeline located on the embankment crest, equipped with spigots spaced at nominal intervals of approximately 25 m. The delivery system consists of a single, bundled pipeline from the plant, which splits into two legs along the embankment toe. This enables transfer to either the West or East manifold, which allow for tailings delivery to be split in 4 deposition zones around the perimeter. This arrangement supports construction sequencing while maintaining continuous tailings deposition.

Tailings are deposited in a sub-aerial manner from the spigots in thin, controlled layers up to 300 mm thick. This facilitates desiccation, promotes consolidation, and improves tailings density over time. Each spigot will be fitted with an independent control valve to regulate discharge, allowing for targeted deposition and beach formation. The deposition sequence involves rotating discharge between spigots systematically around the embankment.

Deposition aims to ensure uniform beach development, maintain positive drainage toward the central decant, and minimise ponding against the perimeter. This enhances operational control, tailings drying conditions and supports long-term geotechnical performance. Additional details regarding spigot operation, sequencing, and monitoring will be provided in the OM.

The tailings pipeline layout concept is shown below in Figure 23.

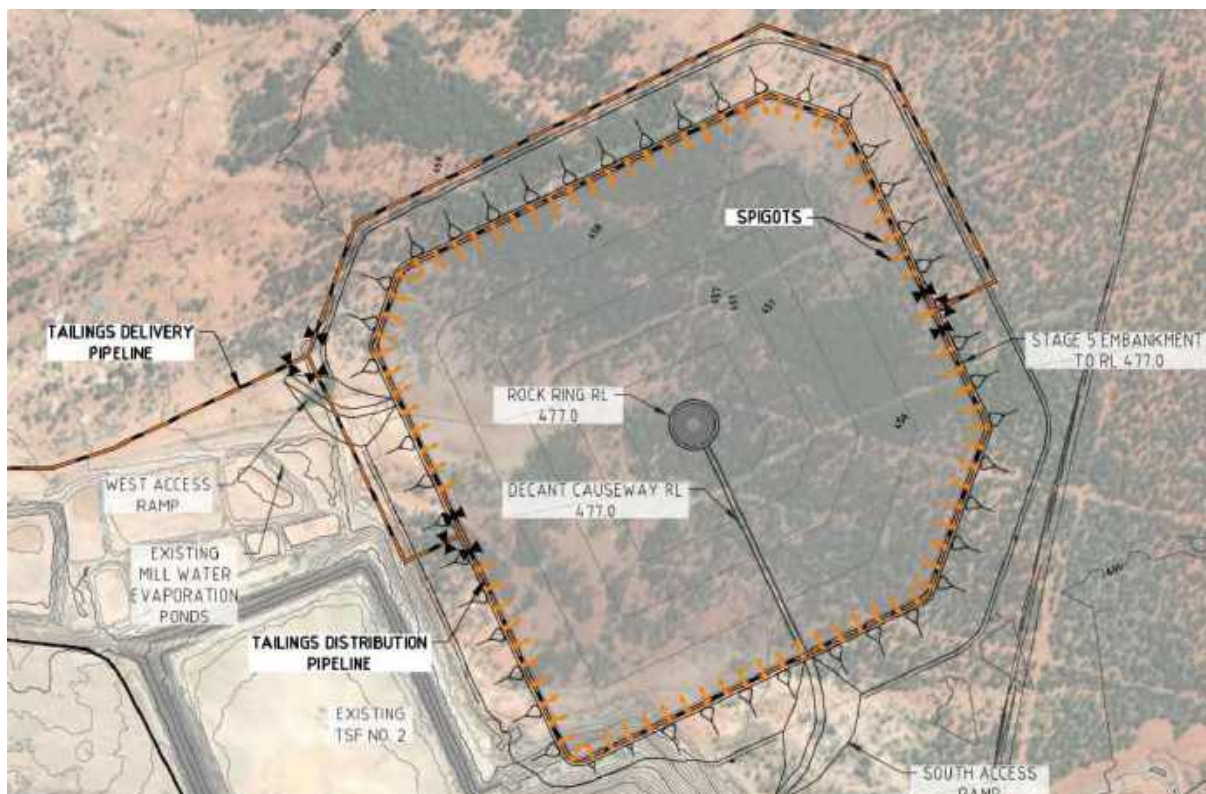


Figure 23: Tailings pipeline layout concept (TailCon 2025a)

3.7.3 Seepage Controls

To minimise tailings water percolating through the TSF, maximise settled density of tailings and efficiently manage supernatant water, the design includes a central rock-ring decant system. The rock ring will be constructed using clean waste rock and connected to the TSF perimeter by a causeway. Access to the rock ring is via the decant causeway, which will be progressively extended as the facility is raised.

The rock ring acts to filter sediment and effectively collect the supernatant water (decant) from the tailings beach. Decant water is pumped back to the process water pond for reuse in the plant. An example of a rock-ring decant structure is shown below in Figure 24.

To support seepage control and maintain a well-drained facility that effectively controls the internal phreatic level, the design includes a perimeter seepage collection drain system on the TSF floor. This system comprises graded sand and stone and is equipped with a subsoil drain such as MegaFlow drainage system.

A cut-off trench runs along the entire length of the embankment upstream toe to restrict lateral seepage. A seepage interception drain is installed within the cut-off trench along the east and south flanks, which prevents lateral seepage outside the facility footprint. Solution recovered from the underdrainage and decant systems reports to collection sumps external to the TSF. From these sumps it will be pumped back to the plant for re-use in the process circuit.

The TSF3 site layout plan (Figure 8) shows the alignment and location of the seepage collection drain, cut-off trench and seepage interception drain, and the collection sumps. Figure 12 shows the design detail of the seepage drains.



Figure 24: Example of a rock-ring decant structure

3.7.4 Erosion and Sediment Control

Due to the fine-grained nature of the tailings, or the use of local clay borrow material, which may be dispersive when used as the embankment construction material, there is a risk of initial piping erosion forming as a result of surface runoff. If not adequately controlled, this erosion could lead to undercutting of the embankment body, ultimately leading towards loss of tailings containment.

The following preventative measures will be put in place to mitigate this risk:

- Capping of the TSF embankment crest with 150 mm wearing course, and the downstream slope face with a minimum 300 mm thick erosion resistance soil layer also if required;
- Tailings slurry deposited sub-aerially using slotted PVC conductor pipes laid on erosion protection mats (i.e. old conveyor belts, HDPE liner) (Figure 25). This ensures discharged tailings are directed onto the tailings beach with minimal potential for erosion of the adjacent embankment slope; and
- A nominal 1 m high earth bund to be constructed approximately 5 m from the embankment toe to serve as a sediment control measure, confining any sediment resulting from potential erosion of the downstream slope.



Figure 25: Conductor pipe example

3.7.5 Stormwater Management

The Post-Development flood regime of the area immediately surrounding the TSF is shown in Figure 26 (1% AEP). The results show that the flow from the local creek are deflected around the northern side of the TSF footprint to join the Eastern Creek flood plain. The 2D flood model results also show the drainage path around the TSF footprint has a continual fall naturally, such that significant ponding is unlikely to occur (AQ2 2025a).

A nominal diversion drain around the northern and eastern boundary of the TSF would assist in ensuring positive drainage occurs. To ensure positive drainage and prevent stormwater entering the facility, the minor flow path will be re-directed around the north-eastern side of the TSF. The diversion works will be completed during the initial construction and topsoil stripping phase, prior to any tailing's deposition. This will ensure the facility remains isolated from catchment runoff and external floodwater (Tail Con, 2025).

Maximum flood water depths on the eastern side of the TSF are predicted up to 0.75 m in the 1% AEP event, and exceed 1 m in the PMF. During a 1% AEP event, velocities around the TSF are generally low (<0.5 m/s) but increase to up to 1.5 m/s in the PMF. The design of TSF3 considers the modelled flood depths and also flow velocities around the toe of the TSF during flood events. A minimum 300 mm thick erosion resistant soil layer will be incorporated on the downstream toe of the northern and eastern side embankments subject to flood risks.



Figure 26: TSF3 - Post-Development Flood Depth (AQ2 2025a)

The TSF will operate with a minimal decant pond, and internal water will be managed via a central rock ring decant system, directing water to a return water dam. The design also includes a seepage trench to manage phreatic surface development and support effective tailings consolidation.

3.7.6 Instrumentation

To monitor the development of phreatic surface throughout the life of the facility, the installation of Vibrating Wire Piezometers (VWPs) has been recommended as a LoM strategy. These instruments will be installed at strategic locations identified as critical for tracking phreatic surface development and assessing the performance of the tailing's storage facility under both operational and post-closure scenarios.

The proposed VWP layout includes instruments strategically positioned to capture variations in pore water pressures within key zones of the embankment and foundation. Tentatively, VWP sensors will be installed along five (5) transect lines across the embankments, with each transect comprising eight (8) sensors. The locations of the transect lines and the typical sensor placements along each transect are shown in Figure 13: TSF3 – Monitoring Instrumentation Detail (TailCon 2025a).

3.7.7 Groundwater Monitoring

Two holes were drilled as part of the TSF3 geotechnical investigation (TailCon 2025a), which have been converted to monitoring bores. These bores did not intercept groundwater, so their purpose will be to intercept seepage should it occur within the previously unsaturated soil profile.

Groundwater monitoring bores will be added during TSF3 construction, in locations and designs as recommended by AQ2 (2025a). It is anticipated the new TSF3 monitoring bores will be incorporated into the existing quarterly monitoring schedule, prescribed in L8275/2008/2 (section 14.5, Table 33: Monitoring Bore – Parameters and Limits).

Further details on groundwater monitoring in vicinity of TSF3 and the broader Youanmi Mine are provided in Section 14.5: Monitoring. This section includes:

- The schedule of new Project monitoring bores;
- Bore construction details;
- Figures/s showing the location of new and existing bores; and
- Proposed parameters and limits.

4 EVAPORATION PONDS - CATEGORY 6

4.1 Design Capacity

Rox holds L8275/2008/2 to dewater Main Pit, United North Pit and underground workings. Discharge is to a network of Evaporation Ponds, plus Kathleen & Rebel pits. The Assessed Design Capacity of the dewatering infrastructure is 2,345,000 tpa. No change is proposed to the licensed capacity with this application.

The existing evaporation ponds are licensed as ‘Site infrastructure and equipment’, along with delivery pipelines, seepage collection drains & sumps, and groundwater monitoring bores. Mine water (specified emissions) must be discharged from the main pit directly to the evaporation ponds (also Kathleen Pit or Rebel Pit). Seepage from evaporation ponds (specified emission) is to be captured in seepage drains and pumped back into the ponds.

The ponds are in series and divided into multiple cells (13). These cells vary in depth, however average 0.9 m to optimise evaporation. They are interconnected by a series of pipes which allows water to flow from one cell to the next once 1.0 m capacity is reached. The existing ponds were refurbished during 2025, commissioned in mid-2025 and are currently operating in accordance with their design intent and licence conditions.

4.2 Evaporation Pond Expansion (EPE)

4.2.1 EPE Overview

In order to maintain dewatering rates that support project schedules, whilst minimising environmental risk, additional evaporation ponds have been designed to expand the network. ROX engaged TailCon to design the additional evaporation ponds adjacent to and southeast of the existing pond network. The Technical Memorandum is provided in Appendix 7. TailCon (2025b). Evaporation Pond Extension Design Report and key elements summarised below.

Evaporation ponds temporarily store water from mine dewatering. Natural evaporation is the primary water removal mechanism, with the local climatic conditions of high evaporation rates and low rainfall harnessed to effectively reduce volumes. The ponds are classified as medium-risk and non-hazardous, suitable for safe and efficient water management.

The water is hypersaline, originating from groundwater though is not expected to contain harmful contaminants and treatment systems are not required. However, seepage control measures are incorporated. Pond geometry, embankment height and capacity have been developed for the anticipated inflow volumes, while maintaining sufficient freeboard under conservative design storm events.

The expansion comprises four (4) additional interconnected cells. Water flows from the existing cells into Cell 4.1, then sequentially flows into Cells 4.2, 4.3, and 4.4. Flow between cells will be via gravity driven transfer through double corrugated HDPE pipes, installed approximately 1.0 m above ground level. The capacity for each cell is shown in Table 10.

Key design features include:

- A total footprint area of 152,488 m²;
- Four interconnected evaporation ponds;
- Optimized surface area for evaporation;
- Embankment height with minimum 0.5 m freeboard;

- Seepage control using clay or low-permeability materials; and
- Access for inspection and maintenance.

Table 10: Evaporation Pond Capacity

Evaporation Pond Cell No.	Design Capacity (m ³)
4.1	17,148
4.2	28,547
4.3	29,390
4.1	35,865
Total (m³)	110,950

4.2.2 Freeboard

The total required freeboard for the EPE is 0.5 m, comprising:

- 300 mm Operational Freeboard; and
- 200 mm Beach Freeboard.

The pond cells are designed to store a maximum water depth of 1.0 m, with embankments constructed to approximately 2.0 m above the natural ground level. This provides a nominal freeboard of 1.0 m, which will contain the 1-in-100-year, 72-hour rainfall event (188 mm), while maintaining a buffer of ~ 300 mm to the minimum total freeboard of 0.5 m.

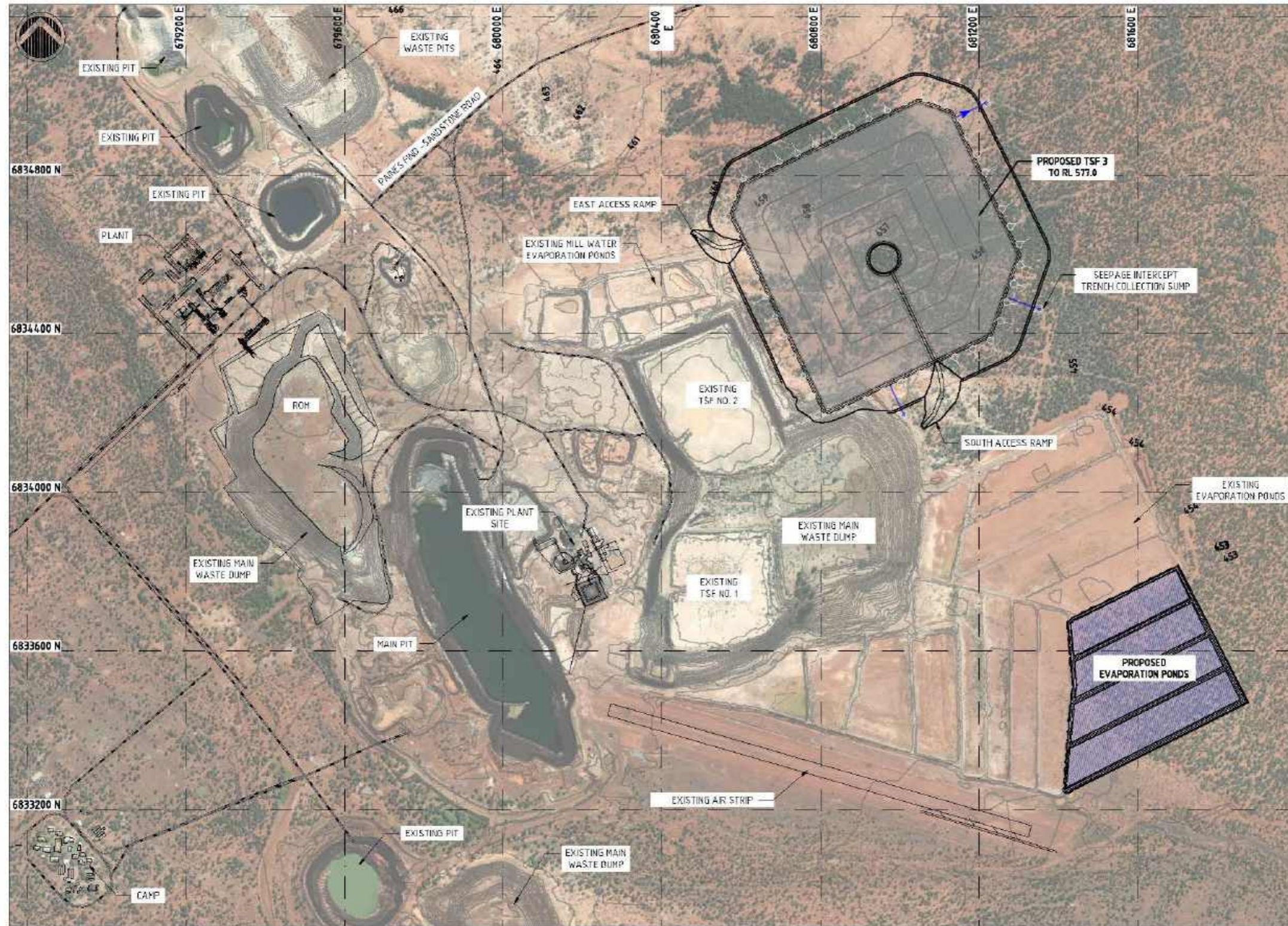
The available freeboard is considered appropriate for the expected design storm event. No additional assessments for stormwater contingency storage or further freeboard allowances are considered necessary at this stage (Tailcon 2025b).

This freeboard is also consistent with the DMPE Code of Practice (2013) plus ANCOLD Guidelines (2019) for a medium hazard dam <5.0 m in height (Category 2 facility).

Cells 4.1, 4.2, and 4.3 are designed to self-regulate their maximum pond level at 1.0 m. Water level markers will be installed consistent with the existing ponds, to allow for visual monitoring and to ensure that water levels do not exceed. This is intended to optimise evaporation and maintain the required freeboard for stormwater management.

4.2.3 Design Drawings

Design drawing for the EPE are shown in Figure 30: Evaporation Ponds – General Arrangement Layout Plan (TailCon 2025b), and Figure 31: Evaporation Ponds Layout Plan & Typical Sections (TailCon 2025b).



SITE LAYOUT
 SCALE: 1:10,000

1:10,000 0 100 200m

ORIGINAL SIZE A3				DESIGN	AX	DDA94/MGA ZONE 50			PROJECT YOUANMI GOLD PROJECT EVAPORATION PONDS DRAWING TITLE EVAPORATION PONDS GENERAL ARRANGEMENT LAYOUT PLAN	ISSUED FOR REVIEW
				DESIGNED	AS					
				CHECKED	MS					
	A	ISSUED FOR REVIEW	2025-07-25	AX	MS					
			APPROVED							CLIENT DRAWING NO.
			DATE							DRAWING NO. 160-01-3144C-DG002
										REV A

Figure 27: Evaporation Ponds – General Arrangement Layout Plan (TailCon 2025b)

4.3 Studies & Modelling

4.3.1 Geotechnical

A geotechnical site investigation consisting of three (3) test pits was completed in July 2025 across the proposed footprint. The pits were excavated to refusal to depths of approximately 1.0 m below natural ground, which determined the foundation as follows:

- 0 to 0.3m: Topsoil material (Unsuitable, to be cleared);
- 0.3 to 1.0m: Clay/Silt, sandy & gravelly;
- > 1.0m: Wiluna Hardpan followed by Basalt bedrock

The foundation is similar to the southern sections of TSF3 and is considered geotechnically strong with low permeability. The subsurface materials—cemented colluvium, ferricrete, silcrete hardpan, weathered granite and rock provide high resistance to shear under static and dynamic loads.

4.3.2 Topography

The existing topography at the proposed EPE site varies from elevations of 470 mAHD to 490 mAHD, with the ground generally sloping downwards from the northwest to the southeast.

4.3.3 Hydrology

A surface water assessment has been completed to identify hydrological impacts and the risk that the EPE may have on the surface water environment. The EPE is proposed to be constructed at the southeast corner of the existing evaporation ponds, within the extent of Catchment B, and could potentially be impacted by flooding of Eastern Creek. The predicted 1% AEP flood depth is shown Figure 29 (AQ2 2025b):

- The EPE footprint encroaches into the Eastern Creek floodplain. The model allows some surface water outflow along the eastern edge of the boundary, but potentially flow could spread out further to the east across the flood plain and result in lower flood depths;
- The maximum surface water elevation for the 1% AEP event around the boundary of the EPE is predicted to be approximately 453.7 mRL (Figure 29). The comparison shows the predicted flood level remaining below the crest elevation.

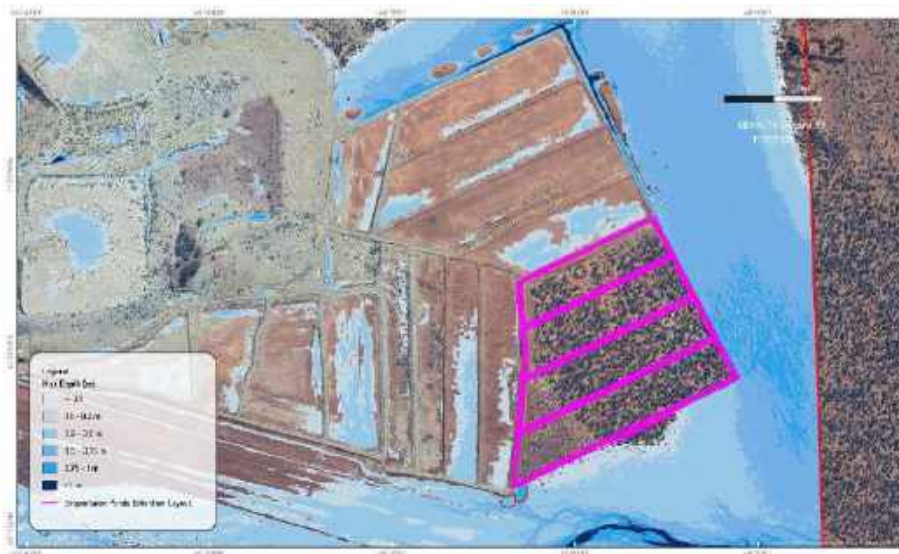


Figure 29: EPE 1% AEP Flood Levels (AQ2 2025b)

4.3.4 Hydrogeology

The geology and hydrogeology of the EPE area is detailed in Appendix 8. AQ2 (2025b). Evaporation Pond Expansion Hydrological Impact Assessment, which is summarised below.

There are three monitoring bores in the area of the EPE; SMB1, SMB2 and SMB3 (Figure 30). Depth to water in the EPE area currently ranges from 23.5 to 24 metres below ground level (mbgl). This equates to a groundwater elevation of around 429.7 to 430.8 mAHD.



Figure 30: Existing & Proposed Monitoring Bore Network (AQ2 2025b)

Groundwater at the Project is generally brackish to weakly saline at shallow depths, increasing to hypersaline at depth in the underground workings, particularly in Youanmi Deeps. The groundwater is much less saline in Hillend and Pollard. Main pit contains high salinity water, probably due to up-flow of water from Youanmi Deeps. (Rockwater 2022). AQ2 (2025a) summarised water quality monitoring records from mid-2022 to 2025 for production bores, monitoring bores and pit lakes, which indicate the following:

- Salinities recorded in pit lakes:
 - Main Pit – between 27,000 and 46,000 mg/L TDS (saline to hypersaline);
 - Rebel, Kathleen and United North Pits – 3,000 to 7,500 mg/L TDS (brackish);
 - Bunker Pit – between 400 and 5,200 mg/L TDS, averaging 2,300 mg/L TDS (fresh to brackish).

The recent water analysis in these pits indicates an increased salinity in the pit lake water since 1995, likely attributed to the high evaporation rates that increase the salt concentrations within the pits.

Five water samples from Main Pit (surface) were collected in 2020 and four samples in 2025 from the discharge point at the evaporation ponds. Samples were analysed for a wide suite of

analytes. Salinity was measured (in-pit) to be 28,000 mg/L TDS in December 2020 (Rockwater 2022) and 50,000 mg/L in April 2025 at the discharge point.

This apparent increase may be partly explained by evaporation increasing salinities (AQ2 2025). Also, the 2020 sample was from the pit surface, while the 2025 sample was at the dewatering discharge point. The discharge would have likely included more of the denser, higher salinity water from deeper in the pit.

This is further confirmed by analysis of samples Rox took at various depths in Main Pit in Feb 2022. Five samples were taken; two each at 10 m and 30 m (north & south), and one at 40 m (south). Total Dissolved Solids (TDS) and acidity (pH units) are shown for these samples in Table 11 below. These results show salinity (TDS) and acidity (pH) increases at depth.

Table 11: Lab. TDS & pH - Main Pit water @ 10m, 30m & 40m depth (Rox, Feb 2022)

Analyte	Unit	Main Pit -				
		South 10 m	North 10 m	South 30 m	North 30 m	South 40 m
Acidity	pH	7.87	7.87	7.14	7.24	7.25
Total Dissolved Solids (TDS)	mg/L	39,800	40,300	54,100	53,900	64,000

The 2025 analysis results are shown below in Table 12. The water is of the sodium chloride type with a neutral pH of 7.68 and most metals and minor constituents below levels of detection. There were some low concentrations of arsenic, selenium, chromium, and mercury.

Table 12: Laboratory analysis of dewatering samples (2025)

Analyte	Unit	Main Pit (Evaporation Pond Discharge Point)
Date Sampled		15 April 2025
Acidity	pH	7.68
Electrical Conductivity @ 25°C	µS/cm	62,500
Total Dissolved Solids @180°C	mg/L	50,000
Total Suspended Solids @104°C	mg/L	10
Hydroxide Alkalinity as CaCO ₃	mg/L	<1
Carbonate Alkalinity as CaCO ₃	mg/L	<1
Bicarbonate Alkalinity as CaCO ₃	mg/L	83
Total Alkalinity as CaCO ₃	mg/L	83
Acidity as CaCO ₃	mg/L	14
Aluminium	mg/L	<0.10
Arsenic	mg/L	0.236
Bromide	mg/L	44.4
Calcium, Ca	mg/L	2,550
Cadmium, Cd	mg/L	<0.0010

Analyte	Unit	Main Pit (Evaporation Pond Discharge Point)
Caesium	mg/L	0.109
Chromium	mg/L	<0.0010
Cobalt	mg/L	<0.010
Copper	mg/L	<0.010
Lead	mg/L	<0.010
Lithium	mg/L	0.212
Manganese	mg/L	0.073
Nickel	mg/L	<0.010
Rubidium	mg/L	0.17
Selenium	mg/L	<0.10
Thallium	mg/L	<0.010
Thorium	mg/L	<0.010
Uranium	mg/L	0.187
Zinc	mg/L	<0.050
Iron	mg/L	<0.50
Magnesium, Mg	mg/L	1,116
Silicon	mg/L	25
Sulphate, SO ₄	mg/L	955
Sodium, Na	mg/L	11,400
Potassium, K	mg/L	107
Mercury	mg/L	<0.0001
Free Cyanide	mg/L	<0.004
Fluoride	mg/L	0.9
Nitrate as N	mg/L	0.85
Total Nitrogen	mg/L	1.2
Total Phosphorus	mg/L	<0.01
Total Recoverable Hydrocarbons	µg/L	<100

Recent water quality records from monitoring bores SMB1- SMB3 indicate that the groundwater is characterised as slightly alkaline (pH range of 7.1 to 8.1). The salinity ranges from 2,000 to 4,000 mg/L, with Total Dissolved Solids (TDS) in bores SMB2 and SMB3 and from 18,000 to 41,500 mg/L TDS in SMB1, indicating groundwater is brackish to hypersaline.

Groundwater is generally slightly alkaline and of sodium chloride type, with low calcium and bicarbonate concentrations (indicating limited rainfall recharge).

The collected water is classified as benign, originating from groundwater or surface water ingress into the pit and is not anticipated to contain harmful contaminants, process reagents, or elevated

concentrations of heavy metals. However, the collected water is hypersaline, which, does pose a risk to the environment or human health. Although hypersaline water does not typically constitute a hazardous substance classification, uncontrolled discharge could adversely impact surrounding soils, vegetation, and surface-water ecosystems.

The ponds require appropriate containment and seepage control measures to prevent off-site impacts. No specialised treatment systems are anticipated to be necessary.

Current groundwater levels have been influenced by the presence of mined out pits, which are all groundwater sinks, resulting in groundwater flow towards all pits. This flow has influenced the general groundwater flow patterns and local groundwater levels (Figure 16).

4.3.5 Groundwater Mounding and Seepage

Seepage modelling was undertaken by Tailcon (2025b) to inform the EPE design (17.7: Appendix 7). Also by AQ2 to determine the fate of seepage and potential environmental impacts (Appendix 8. AQ2 (2025b). Evaporation Pond Expansion Hydrological Impact Assessment. Further details on the modelling and results are included in these reports, which is summarised below.

A phreatic surface is expected to develop through the embankment, extending into the foundation and terminating prior to reaching the downstream toe. To minimise the potential and rate of seepage, embankment walls will be constructed of compacted clay (Zone A), which has low permeability. The seepage rate into the foundation is also anticipated to be minimal due to the low permeability of the underlying foundation materials.

Minimal seepage is expected through the embankments, however to manage any potential seepage that may occur, a seepage interception drain has been incorporated along the southern (east-west) embankment of Cell 4.4. This drain directs seepage into a designated sump, allowing for collection and recycling of water back into the facility.

The AQ2 (2025b) model predicted the likely maximum water table mounding for the EPE (Figure 31). The water table mound will continue to rise until either dewatering discharge ceases or the hydraulic gradients are sufficient to drive enough water away from the mound to balance all seepage. The main seepage mechanisms and pathways away from the base of the EPE are as follows:

- Infiltration through unsaturated zone – seepage will initially move vertically under the influence of gravity until it reaches the water table (in the main aquifer – weathered bedrock);
- There may be some minor shedding of seepage along the top of the saprolite (base of cover material) and any such flow will follow the topography of this surface. However, specific shallow seepage interception and recovery design features incorporated into the design of the EPE should minimise this. Some minor seepage may make its way vertically to the water table;
- Flow within the main aquifer – once seepage reaches the water table in the main aquifer, the water table will rise forming a “mound”. Seepage will mix with groundwater and then flow following the groundwater hydraulic gradient. Initially, flow will be radial (or semi-radial) away from the mound at rates determined by the hydraulic gradient and aquifer permeability. However, at some distance from the EPE the regional hydraulic gradients will be the dominant influence and groundwater flow will be to the west to northwest towards the Main Pit.

Figure 32 shows the interpreted seepage flow pathways from the EPE. Based on available topographic data, the minimal predicted water table mound rise and the fact that the Main Pit will be a long-term groundwater sink during and after mining, all seepage flow is predicted to flow to the west and eventually into the Main Pit (i.e., seepage flows will be “captured” by the Main Pit). It is not expected that there will be any seepage flow away from the Project site.



Figure 31: EPE Predicted 10 year Groundwater Mounding (AQ2 2025b)



Figure 32: EPE Predicted Groundwater Flow Paths after 10 years (AQ2 2025b)

The potential receptors of the expected seepage processes and pathways include:

- Topographic low points on-lease, including minor creeks; and
- Main Pit mine void.

There are no groundwater dependent ecosystems, including stygofauna or groundwater-dependent vegetation proximity to the Project, and no other groundwater users have been identified. However, down-topographic gradient vegetation may be affected by seepage.

Potential environmental consequences of seepage on groundwater are largely related to:

- The water table rising to ground level (i.e., surface expression of groundwater) as a result of “hydraulic push” from the water table mound that will develop beneath the EPE and consequent impacts on local vegetation;
- If the above occurs, the potential development of surface water flow (from the immediate area of the EPE) of any surface expression water that is not evaporated or retained as soil moisture. The quality of the surface expression of water will be affected by seepage, with a general salinity rise in surface waters.

4.4 Evap. Pond Construction

4.4.1 Site Preparation

The footprint of the evaporation pond expansion will be cleared of vegetation, and the topsoil stripped to a nominal depth of 100 mm. A Native Vegetation Clearing Permit (NVCP) incorporating the evaporation pond expansion has been approved on 8th August 2025: Purpose Permit - CPS 11021/1.

This NVCP covers clearing for construction and operation of all evaporation pond infrastructure proposed in this application. Clearing will be undertaken in accordance with requirements and conditions of this permit.

4.4.2 Construction & Materials

The retaining structure consists of a homogeneous embankment (Zone A) constructed from a single material type – Compacted Clay. The Zone A material must meet permeability requirements of 1×10^{-8} , and may be sourced locally from the facility basin or from a designated material stockpile such as Bunker waste dump.

The Bunker Waste Dump comprises intensely weathered sandstone, mafic saprolite (clay), and oxidised basalt and banded iron formation (BIF). Observations indicates that this material has no capacity for Acid Mine Drainage (AMD) due to its highly weathered state and absence of sulphide minerals.

Given its physical and chemical properties, the material is considered suitable for use in the construction of EPE embankments, subject to confirmation of geotechnical parameters (e.g., compaction, shear strength) through additional testing if required

The embankment is designed with a crest width of 4.0 m and side slopes of 1V:2H. Compaction will be achieved either through traffic-based methods or by roller compaction to a minimum of 95% SMDD, with particular attention given to thorough compaction around the corrugated HDPE pipe to minimise the risk of internal erosion or piping.

Based on the modelling and design geometry, a summary of the approximate bill of quantities is summarised in below in Table 13.

Table 13: Evap. Pond Expansion - Bill of Quantities (BoQ)

Pond Cell No.	Zone A (m ³)
4.1	7,176
4.2	8,921
4.3	9,263
4.4	10,137
Total (m ³)	35,497

4.4.3 Quality Assurance

Embankment construction will be carried out using traffic or roller compaction in maximum 300 mm lifts to 95% SMDD. Following substantial completion of construction, a Construction Completion Report will be prepared by a Competent Person; typically, the design engineer in accordance with the requirements of the DMPE Code of Practice (DMP, Sep 2013).

4.5 Emissions, Risk & Management

4.5.1 Impacts and Risk

The potential impacts and risks posed by the evaporation pond extension have been assessed, which include:

- Modification of the existing hydrological regime, by increasing or decreasing water availability and flood levels within the environment. Surface water flows may potentially spread out further east over the flood plain compared to the model;
- Concentration of surface water flows due to the EPE encroaching within the flood extent of Catchment B. This may reduce the available flow area and increase the flow velocities through the drainage line, increasing erosion risk and subsequent sedimentation downstream;
- Impact of flooding on the EPE structural integrity;
- High salinity water released to the downstream environment via by flood waters overtopping the EPE and washing out stored water, overtopping during an extreme rainfall event, or caused by failure of freeboard controls. This could adversely impact surrounding soils, vegetation, and surface-water ecosystems;
- Seepage through the EPE foundation or embankments impacting groundwater quality, vegetation and soils at topographic low points including minor creeks, and Main Pit mine void;

4.5.2 Mitigation & Management

The maximum flood velocity around the perimeter of the EPE is predicted to be 0.7 m/s. The embankment toe will be constructed with sufficient erosion protection to withstand flow velocities of 0.7 m/s. The EPE has been designed to operate with a minimum freeboard of 0.5 m between the maximum pond water level and the EPE crest. This is greater than the 72-hour 1:1000 AEP rainfall depth (0.41 m).

The predicted water table mound outside of the area cleared for EPE construction is <10 m, which is well below the ground surface (i.e. 14 mbgl). This predicted level is well below the 6 mbgl

trigger level for investigation and actions to prevent negative impacts as water tables <6 m deep can negatively impact vegetation.

Predicted maximum EPE seepage losses through the embankments have been estimated by TailCon to be very low, approximately 0.0004 kL/d over a 1 m section (i.e. a total of 0.2 kL/d). A seepage collection trench is proposed around the perimeter of the EPE to collect this seepage and divert it to a collection sump;]

Seepage will move away from the EPE at rates determined by the hydraulic gradient and aquifer permeability. Seepage flow will become dominated by existing regional hydraulic gradients a short distance away from the EPE, and then largely flow towards the Main Pit. The ultimate fate of any seepage into the Main Pit (i.e., captured by the pit).

The predicted water table rise and rates of seepage migration are not expected to result in impacts to local vegetation (due to inundation of tree roots) and surface soils due to water table mounding. There is no groundwater dependent ecosystems (GDEs) or the beneficial users of local groundwater within the predicted water table mounding or broader Project area. Mine water discharged to the proposed EPE is not anticipated to have long-term impacts on the local hydrology or hydrogeological environment (AQ2 2025b).

4.5.3 Inspections

Daily inspections are currently undertaken by dewatering operators of all dewatering infrastructure, including evaporation ponds and water lines. The new ponds and water lines will be included into this daily schedule once constructed and operational, with survey pickup done monthly

Inspections are recorded in a log, with any issue or concerns raised with the supervisor for immediately action and reporting where required, or closer scrutiny to identify and track emerging issues. The log is available for review by mine management at any time, who also undertake periodic inspections of their own accord or in response to concerns raised by operators. This process ensures safe and compliant water levels are maintained.

Daily inspections include:

- Pond level markers and freeboard;
- Pumping rates and volumes;
- Pit-lake levels via markers;
- Pipeline and bunding integrity; and
- Recording the Inspection Log and reporting issues or concerns - for corrective action as required.

4.5.4 Monitoring

Scheduled quarterly monitoring will include groundwater bores and photo points in accordance with existing parameters and conditions of L8275.

Photo points will be established on the south and east sides of the new ponds, to complement the existing network of points (YPP1 – YPP6). It is envisaged two new photo points to be located approximately as shown in Figure 2. The final locations will be confirmed post-construction in the licence amendment application to operate the new ponds.

Groundwater monitoring will be undertaken at the existing network of monitoring bores, plus new bores to be established. One of the existing monitoring bores (SMB2) lies in the footprint of the proposed pond expansion area, which will be decommissioned during pond construction. Four additional monitoring bores have been proposed (AQ2 2025a & 2025b); one to the north, two to the south-east and one to the south, shown below in Figure 36.

Final bore names or ID's, and their location co-ordinates will not be available until they are constructed. An updated schedule of all monitoring bores will be provided in the Licence Amendment Application to operate the premises following construction. Construction of monitoring bores will be supervised by a qualified hydrogeologist and in accordance with the bore design shown in Figure 48: Proposed Monitoring Bore Design (AQ2 2025).

Further details on proposed environmental controls and monitoring are provided in Section 14: Controls & Management.

4.5.5 Evaporators

In 2025, Silverstone prepared a proposal for the use of mechanical evaporators as a contingency and control measure, to assist managing excess dewater and reduce pressure on existing disposal methods. The proposed system would enable more rapid removal of surplus water.

An efficiency assessment of the Flowcentric Evaporator was undertaken to determine the disposal capacity of each unit. This analysis informed the recommended number of evaporator units required to meet the project's operational needs. Up to three evaporators and diesel-powered generators have been proposed, to be located within Main Pit, and also the SE corner of the existing evaporation ponds footprint, allowing for the predominant wind direction from the east (NE-SE) which typically shift direction during the afternoons.

Excess water disposal requirements peak in year 4 of the LOM at just over 2GL per annum, which could be assisted by using evaporators. An evaporation efficiency estimate of 51% was calculated for Model 600/300 based on the following assumptions (Flowcentric, 2024):

- Water quality of 28,000 – 50,000 ppm TDS;
- 45-degree evaporation angle
- 3 m elevation; and
- 24-hour operation.

A single 600/300 model has a volume throughput of 37.5 L/s (135 m³/hour). At the expected average annual 51% efficiency, 19.1 L/s (68.8 m³/hour) would be evaporated. The three proposed 600/300 models could potentially manage half of this requirement, assuming they are able to run 14 hours per day per year or 205 days of 24/7 operation (Flowcentric, 2024).

Figure 33 below shows a diagram of a potential evaporator unit. The use of the evaporators will serve more as a contingency and control measure should weather conditions or volume constraints affect the utilisation of the water storage and evaporation systems.

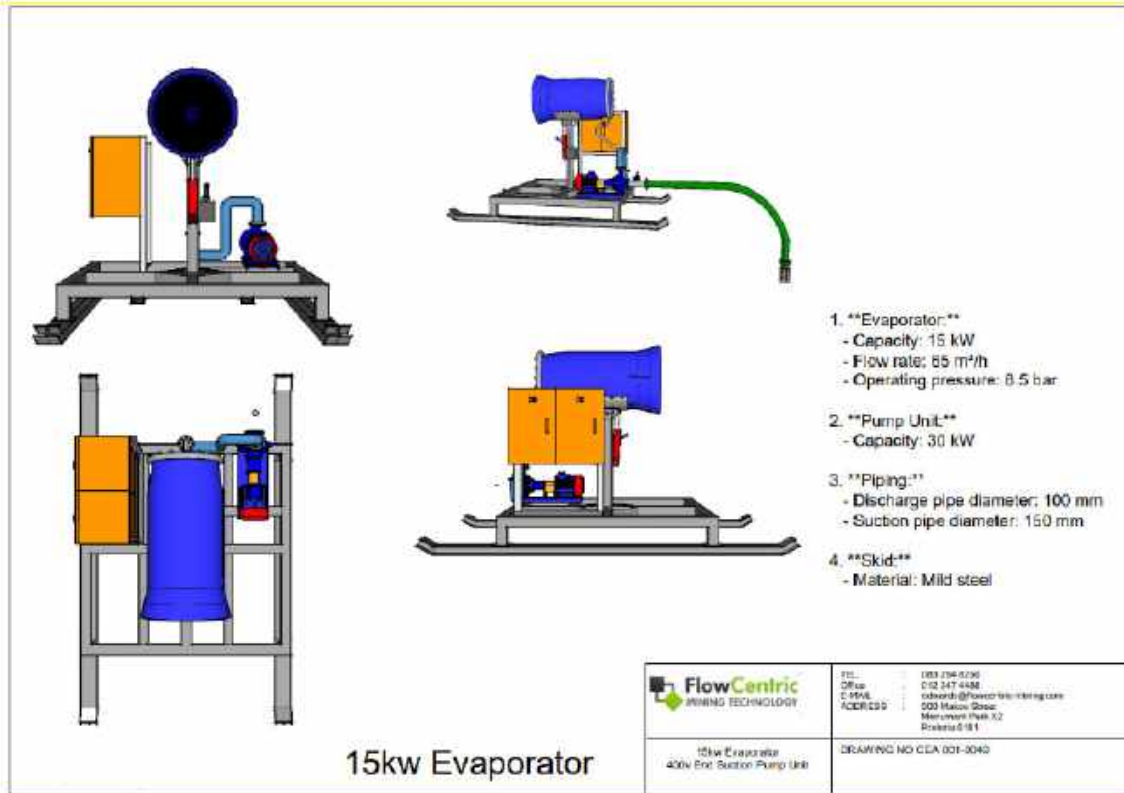


Figure 33: Drawing of 15 kw Evaporator (Flowcentric 2024)

5 POWER STATION – CATERGORY 52

5.1 Design Capacity

To support the Youanmi Mine power requirements, Rox engaged Independent Power Providers (IPP) to provide options for a site hybrid power station. Options sought were under a Build-Own-Operate (BOO) model, which is intended to lead to a power supply contract.

Installed gas and diesel (backup) capacity is 29.5 MW, which aligns with Prescribed Premises Category 52: Electric power generation - premises on which electrical power is generated using a fuel; 20 MW or more in aggregate (using natural gas) or 10 MW or more in aggregate (using a fuel other than natural gas). Table 14 below summarises the key details of the Power Station for prescribed premises licensing purposes.

Table 14: Power Station Key Details

Category	Category Description	Production or Design Capacity	Proposed Activity
52	Electric power generation - premises on which electrical power is generated using a fuel.	29.5 MW	Construction of Power Station, comprising: <ul style="list-style-type: none"> • 11 x 2.5 MW gas generators (N+3); • 1 x 2 MWe diesel generator (standby); • LNG storage facility comprising 4 x 368 kL storage tanks; • Diesel storage tank/s; and • Power reticulation, control and ancillary infrastructure.

5.2 Power Station - Overview

Rox proposes to install the selected option summarised below, which consists of a gas fired power station backed up by 2 MW of essential-supply diesel generation, solar farm, dynamic Battery Energy Storage System (BESS), with an 11 kV overhead powerline to connect the PV to the power station.

The gas and diesel fired generators produce 29.5 MW, the solar photovoltaic (PV) system produces 25 MWp and the BESS capacity is 6.4 MWh, for a total installed capacity of 61.4 MW. Individual components, combined capacity plus the renewable energy percentage is summarised below in in Table 15.

Table 15: Power Station Summary

Power Station Component	Description
Installed Capacity	Thermal: 29.5 MW Solar: 25.5 MW BESS: 6.4 MWh Total: 61.4 MW
Generation System	11 x 2.5 MW gas generators (N+3); and 1 x 2 MWe diesel generator (standby)
Solar Photovoltaic (PV) System	25.5 MWe PV farm; 6.4 MWh BESS; providing 36% Renewable Energy penetration.

Infrastructure	All 11 kV switch boards and rooms; and 11 kW overhead powerline to solar farm
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The operation philosophy of the hybrid power station is that all renewable energy generated will be the principal, first choice, generated power to supply the Project load demands. The basic operating philosophy is as follows:

- PV is dispatched to meet the load as much as possible;
- Excess PV is used to charge the BESS;
- Once the BESS is fully charged, excess RE is curtailed (“spilled”);
- Any scenarios where the site load exceeds the RE output, the BESS is discharged to meet the load. This is especially notable towards the end of daylight hours; and
- If the available charge in the BESS is insufficient to meet the Project load, the thermal gensets are started and dispatched to meet the load.

The power station will be located adjacent to the processing plant, enabling clear access for LNG delivery trucks. The solar farm will be located slightly to the north of the power station, away from any mining operations (Figure 2).

Power will be supplied via an 11kV distribution network to the five main areas:

- Mine Village;
- Process Plant;
- Underground Feeder – United North;
- Underground Feeder – Main; and
- Underground Feeder – Pollard.

5.3 Power Station Components

5.3.1 Generators

The generators planned to be installed are as below:

- Gas Fuelled: 11 x 2.5 MW Caterpillar G3520K generators allowing N+2 planting; and
- Diesel Fuelled: 1 x 2.0 MW Cummins QSK78 back-up generator.

The Power station will be located within a 1.8-hectare plot to the north of the process plant. The general layout of the power station is shown below in Figure 34.

5.3.2 Engine Hall

The power station shall be housed within the Engine Hall, designed and constructed considering full lifecycle requirements, including long-term maintenance and operational needs of plant and equipment. Design considerations will include adequate access and egress for installation and maintenance of equipment—such as gantry crane access.

Suitable drainage and stormwater management will be incorporated, including allowance for a stormwater collection point or tank, along with dedicated collection points for internal spills, leaks, and liquid runoff.

The engine hall shall incorporate oil reticulation works, including clean and waste oil containers, bunding and associated piping and reticulation infrastructure. Future expansion is catered for with space provisions for additional 5 MW generators.

5.3.3 LNG Facility

An on-site LNG Facility will be located within 50m of the power station. This facility will comprise 4 x 368 kL storage tanks plus associated vaporiser tanks (2), liquid delivery bays fill and vaporised supply lines. The LNG Facility will provide gas metering at the outlet of the facility using two parallel Coriolis mass flow meters.

5.3.4 Solar PV

Approximately 25 hectares have been set aside for the solar farm, which will be connected to the thermal power plant by a 1.3km long 11kV overhead power line. Rox will design, install and commission the 25.5 MWp solar facility and interconnected power line to thermal. These activities will include:

- Earthworks;
- Concrete;
- Earthing grid system;
- New solar feed to connect to the power line;
- Power line between the solar farm and thermal power station;
- Metering and Protection; and
- Battery Energy Storage System (BESS)

5.3.5 Bess

A Battery Energy Storage System (BESS) is proposed, comprising 4 x 2.65 MVA / 1.6 MWh and total capacity of 10.6MVA / 6.4MWh. Benefits of the BESS include:

- Quickly respond to sudden load increases that exceed the gas engines' capacity, effectively compensating for any delays in mechanical or electrical performance. This enables the gas engines to operate at a higher load factor and improved fuel efficiency;
- In the event of a gas generator trip, the BESS can provide power, ensuring uninterrupted supply to the mine. Since a gas generator can be started and synchronized in under 5 minutes, the BESS is conservatively sized to last throughout the PPA without needing battery module replacements;
- The Dynamic BESS is sized adequately for dynamic support to the solar PV farm should sudden changes in generation occur, such as a cloud event.

5.3.6 Power Plant Operation - General

- No more than nine gas generators need to be operated at any one time;
- Diesel generators will only be operated for maintenance or emergency situations; and
- Generators will be rotated to be maintained to the manufacturer's specification.

5.4 Emissions, Waste & Management

5.4.1 Construction

Prior to construction, vegetation clearing will be required for the footprints of the power station, power line alignment, and solar farm. These areas will be cleared of vegetation and topsoil will be stripped

to a nominal depth of 100 mm. All clearing activities will be undertaken in accordance with the requirements and conditions of Native Vegetation Clearing Permit CPS 11021/1.

Construction of the power station, power lines, and solar farm will involve excavation for concrete footings and trenches to support underground services such as electrical conduits and plumbing infrastructure. Earthworks will be completed to prepare sites for footings, slabs, and bunded areas, followed by concrete placement.

Most fuel storage, power generation, energy storage, transmission, and power management components will be delivered to site pre-fabricated, then lifted into position and assembled.

Construction-related emissions will primarily consist of dust, particularly during windy conditions. Dust sources, receptors, potential impacts, and management measures are detailed in Section 14: Emissions, Potential Impacts & Management.

5.4.2 Gas Emissions

The estimated gaseous emission profiles for a single 2.5 MW LNG-fired gas engine, plus the aggregated 27.5 MW system of eleven units, are presented in Table 16. The estimated emission parameters for a single 2 MW diesel-fired engine are presented in Table 17. The values reflect projected emission components only. The reference data for calculation of these projected emissions is provided in Appendix 6. Gas & Diesel Engine Emissions Data References.

Table 16: Gas Power Plant Emissions

GAS	Each Emission	Engine Qty.	Total Emission	Unit
NOx (as NO ₂)	0.88	11	9.69	g/bkW-hr
CO	1.08	11	11.88	g/bkW-hr
NMHC (mol. Wt. of 15.84)	0.28	11	3.13	g/bkW-hr
NMNEHC (VOCs) (mol. Wt. of 15.84)	0.15	11	1.64	g/bkW-hr
HCHO (Formaldehyde)	0.16	11	1.80	g/bkW-hr
CH ₄ (mol. Wt. of 16.04)	1.04	11	11.41	g/bkW-hr
CO ₂	312.50	11	3437.50	g/bkW-hr
Exhaust Oxygen	6.89	11	75.78	% DRY

Table 17: Diesel Power Plant Emissions

Component	Standby Power			Prime Power			Continuous Power		
	g/BHP-h	mg/m ³	PPM	g/BHP-h	mg/m ³	PPM	g/BHP-h	mg/m ³	PPM
HC (Total Unburned Hydrocarbons)	0.13	61.44	86	0.11	55	76	0.11	54	77

Component	Standby Power			Prime Power			Continuous Power		
	g/BHP-h	mg/m ³	PPM	g/BHP-h	mg/m ³	PPM	g/BHP-h	mg/m ³	PPM
NOx (Oxides of Nitrogen as NO ₂)	7.80	3851.9	1876	5.99	2931	1428	5.83	2803	1366
CO (Carbon Monoxide)	0.31	153.60	116	0.18	90	66	0.20	94	74
PM (Particulate Matter)	0.01	4.73	N/A	0.02	7	N/A	0.01	5	N/A
SO ₂ (Sulfur Dioxide)	0.08	33.08	13	0.08	33	13	0.08	33	11

5.4.3 CO₂ Emissions

The annual carbon dioxide equivalent (CO₂-e) emissions of the power station has been estimated at 46,682 tonnes CO₂-e (Pacific Energy 2025). This represents a carbon intensity of 0.313 tonnes CO₂-e / MWh.

Carbon emissions modelling is currently underway, which will further refine this initial estimate. However, at 46,682 tonnes CO₂-e, the Power Station has not triggered the federal governments Safeguard Mechanism. This applies to facilities that emit more than 100,000 tonnes of carbon dioxide equivalent (CO₂-e) in a year (<https://www.dcceew.gov.au/climate-change/emissions-reporting>).

The Safeguard Mechanism sets legislated limits, known as baselines, on the net greenhouse gas emissions of covered large emitters in the industrial section. It is administered by the Clean Energy Regulator under the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). The Safeguard Mechanism requires covered industrial facilities to keep their net direct (scope 1) emissions within a limit, called a 'baseline'.

The Safeguard Mechanism is in place since 2016 and reformed in 2023. This applied a decline rate to a facilities' baselines so that they are reduced predictably and gradually over time, to achieve Australia's emission reduction targets of 43% below 2005 levels by 2030, and net zero by 2050. The Youanmi Gold Mine is not a Safeguard Facility, however Rox are committed to the principles of minimised emissions through effective design, plus ongoing reductions via operating efficiency.

The operation philosophy of the hybrid power station is that all renewable energy generated is the first option to supply Project load demands. PV is dispatched to meet the load as much as possible, with excess charging the BESS. When the load exceeds the RE output (ie. nightshift) the BESS is discharged, and only if insufficient are the thermal gensets started.

Rox engaged Greenbase to estimate Scope 1 GHG emissions for the DFS. The modelling estimates were based on gas consumption estimates for operating equipment and electricity generated from the power station. Diesel consumption has been modelled based on equipment productivity and burn rates for mobile and fixed plant. Limestone and hydrated lime are used in the process plant for management of pH in the Albion leach and cyanide leach tanks, for which emissions were also modelled.

The power station emissions are shown in Table 18, emissions generated from diesel equipment are shown by year in Table 19, and emissions generated from the consumption of limestone products are shown by year in Table 20. The total estimated Scope 1 emissions over the life of the Project are shown in Table 21. These results show that the Project produces gold at a low carbon intensity of 0.71 t CO₂e/oz produced, as well as a low energy intensity of 11 GJ/oz produced.

Table 18: Greenhouse Gas Emissions from Gas Power Station

Area	Total	Greenhouse Gas Emissions (t CO ₂ e/year)								
		FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34
Processing Plant	256,079	-	-	31,403	40,029	40,029	40,028	40,138	39,360	25,092
Underground Mine	106,894	-	2,863	14,142	16,527	18,156	17,624	15,769	13,605	8,208
Ancillary	31,493	-	1,132	4,452	4,440	4,440	4,440	4,452	4,440	3,697
Total	394,466	-	3,995	49,997	60,996	62,624	62,092	60,360	57,405	36,998

Table 19: Greenhouse Gas Emissions from Diesel Equipment

Description	Total	Greenhouse Gas Emissions (t CO ₂ e/year)								
		FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34
Vehicles	48,703	938	2,153	4,579	6,599	7,667	7,586	7,541	7,283	4,357
Transport	4,379	250	476	549	548	548	548	541	520	401
Ancillary	28,458	6,252	13,481	1,279	1,276	1,276	1,276	1,279	1,276	1,063
Total	81,540	7,440	16,110	6,408	8,422	9,490	9,409	9,362	9,078	5,820

Table 20: Greenhouse Gas Emissions from Limestone

Description	Total	Greenhouse Gas Emissions (t CO ₂ e/year)								
		FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34
Limestone	105,957	-	-	14,596	16,533	16,736	16,747	15,696	15,760	9,891

Table 21: Life of Mine Greenhouse Gas Emissions

Description	Source	t CO ₂
Processing Plant	LNG	256,079
Underground Mine	LNG	106,894
Ancillary	LNG	31,493
Vehicles	Diesel	48,703
Transport	Diesel	4,379
Ancillary	Diesel	28,458

Description	Source	t CO ₂
Limestone	-	105,957
Sub-Total	-	581,963
Ounces Produced	817,306	
TOTAL t CO₂e/oz	oz	0.71

5.4.4 Maintenance & Servicing

Power generator sets will be maintained and serviced to manufacturer's specifications to ensure efficient running and optimum fuel consumption, thereby minimising exhaust emissions. Diesel engines will be serviced to maintain efficiency and minimise harmful combustion products.

5.4.5 Hydrocarbons

All hazardous chemicals, fuel and other hydrocarbons used or generated in the power station (including waste) will be stored in bunded containment in accordance with Australian Standards. Waste oil and hydrocarbon contaminated waste will be generated during construction and operation of the Power Station, through servicing of mobile plant and the generators. Leaks and spills of hydrocarbons or chemicals can occur during refuelling or servicing, or from transport or storage containment.

Spills will be contained, controlled and cleaned up immediately, with contaminated soil from spills and / or runoff removed for treatment at the on-site bioremediation pads or removed from site to a licensed facility. Further details on proposed environmental controls and monitoring are provided in Section 14: Controls & Management.

5.4.6 NPI & NGER reporting

Rox will comply with the National Pollution Inventory (NPI) and National Greenhouse & Energy Reporting (NGER) requirements.

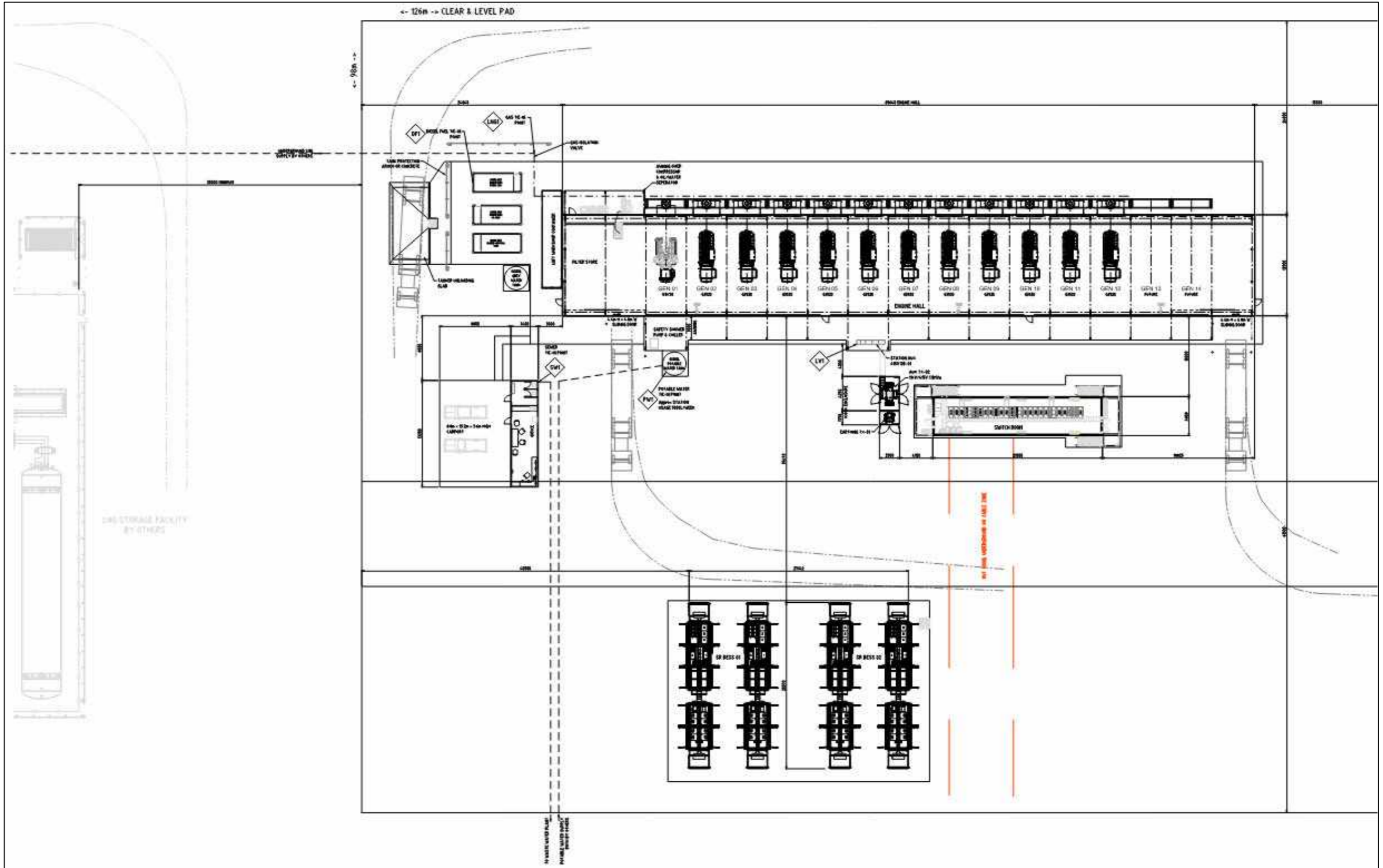


Figure 34: Power Station General Arrangement

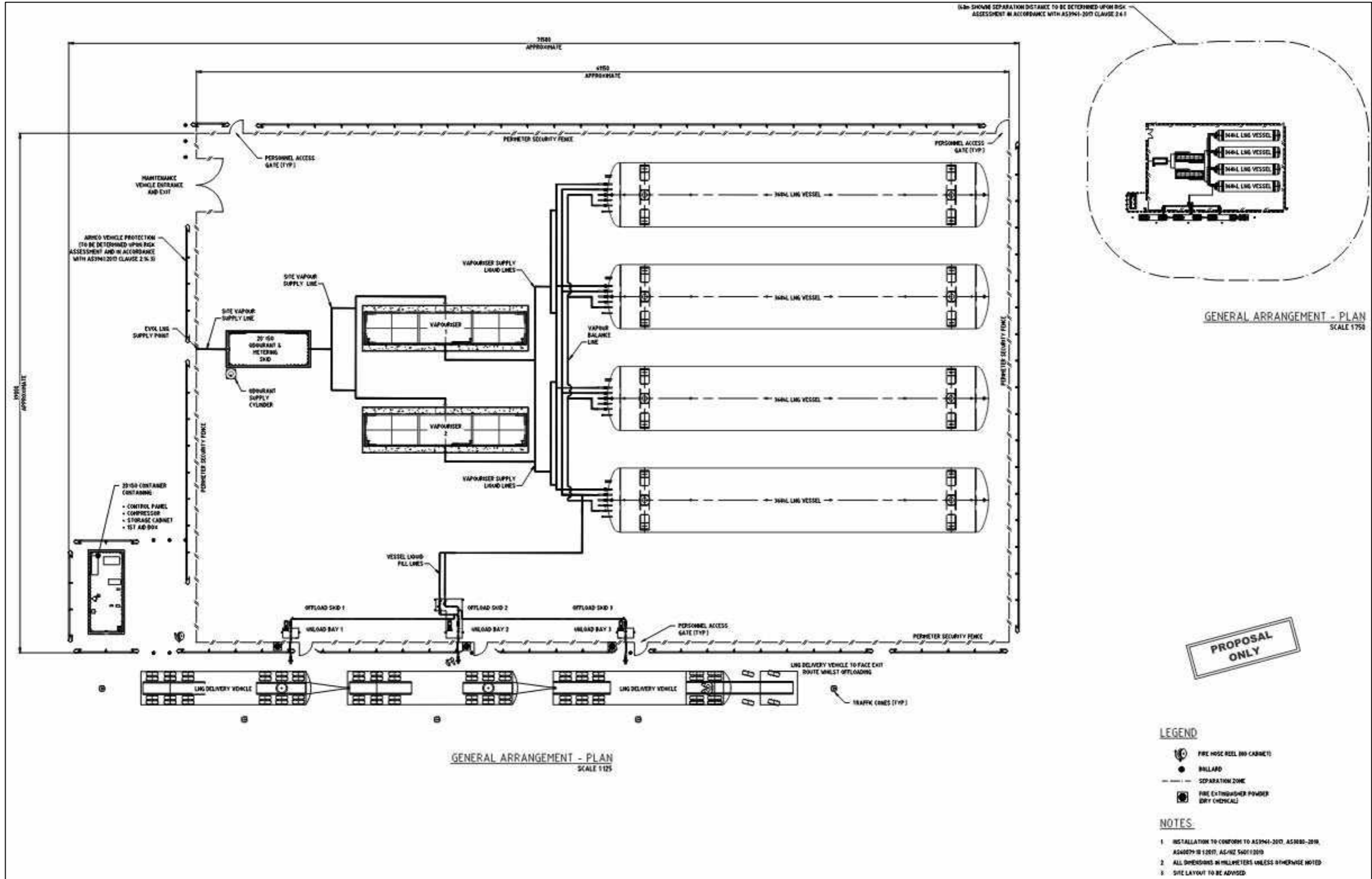


Figure 35: LNG Facility General Arrangement

6 WASTE WATER TREATMENT PLANT (WWTP) – CATEGORY 54

6.1 WWTP - Design Capacity

Rox proposes to construct a new Waste Water Treatment Plant (WWTP) at the Youanmi Gold Mine village. The WWTP will treat all of the wastewater generated at the village as it is expanded to cater for increased personnel during construction and operations. Table 22 below summarises the key details of the WWTP.

Table 22: WWTP Key Details

Category	Category Description	Production or Design Capacity	Proposed Activity
54	Sewage facility - 100 cubic metres or more per day: Premises (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters.	150 m ³ / day	<p>Construction of Waste Water Treatment Plant, comprising:</p> <ul style="list-style-type: none"> • Six x 50,000 L Tanks (Raw Sewage, Waste Activated Sludge, and Chlorine Contact / Irrigation storage); • Six x 50,000 L Tanks (Raw Sewage, Waste Activated Sludge, and Chlorine Contact / Irrigation storage); • Two x 'Ecofarmer 250 Trains'; • Power, water and air-supply, transfer pumps and pipes; and • 4 Ha fenced irrigation sprayfield with 16 sprinklers.

6.2 WWTP - Overview

The existing mine village was built in the 1980's for commencement of open pit mining, with a capacity for 51 residents. Renovations have been made in the last two years to modernise them for exploration personnel, and they will continue to be used. As the Project continues to ramp up during construction and into operations, new rooms and facilities will be required.

Rox proposes to expand accommodation at the mine site to cater for the increase in personnel during construction and operations. A new accommodation village with a total of 300 rooms will be built adjacent to the existing Youanmi camp (Figure 36). Construction is planned in multiple phases:

- Phase 1: 60-room village expansion, commenced September 2025;
- Phase 2: 120-room village expansion, new kitchen & dining facilities, fresh and wastewater treatment plants, commencing January 2026; and
- Phase 3: Additional 120-room expansion, with rooms provided on a hire basis for approximately 18 months to allow for peak personnel numbers during construction phase. Installation to commence February 2026.

The Wastewater Treatment Plant (WWTP) has been designed by Remote Water Treatment Services (RWTS) to service the maximum village capacity of 300 persons. The system designed is

an Activated Sludge Bioreactor Plant, to be installed within Phase 2 of the Youanmi Village footprint.

Treatment capacity is 80 kL/day, with the system capable of managing peak inflow of 100 kL/day, which equates per person to a nominal 266 L/Day and maximum of 333 L/Day. Treated wastewater will be combined with up to 27 kL of brine water from the reverse osmosis (RO) plant. discharged to a fenced spray-field east of the village (Figure 36).

Maximum total discharge is scheduled at 127 kL (m³) per day, however a licensed capacity of 150 m³ / day has been proposed. This is to assist management of the system during unforeseen or emergency situations.

The WWTP General Arrangement is shown in Figure 37 and the Spray-field layout in Figure 38. A full set of drawings is provided as Appendix 9. RWTS (2025a). WWTP Design Drawings. The design report for the WWTP is provided as Appendix 10. RWTS (2025b). Youanmi Village Sewage Treatment System Design Information.

The WWTP consists of a series of tanks and two containerised 'Ecofarmer 250 Trains' arranged in a Sequential Batch Reacting (SBR) configuration. The SBR Process treats waste water via a combined anoxic/aerobic biological suspended growth treatment. This process relies on bacterial action to achieve the following:

- Coagulate and remove the non-settleable colloidal solids and carbonaceous organic matter;
- Convert the colloidal and dissolved carbonaceous organic matter into various gases and cell mass; and
- Reduce the nutrients such as nitrogen and phosphorus and other trace organic compounds.

The system includes the following storage tanks, as shown in Figure 37:

- 3 x 50,000 litre Raw Sewage Storage (Balance) Tanks;
- 1 x 50,000 litre Waste Activated Sludge (WAS) Storage Tank.
- 2 x 50,000 litre poly Chlorine Contact / Irrigation storage tanks.

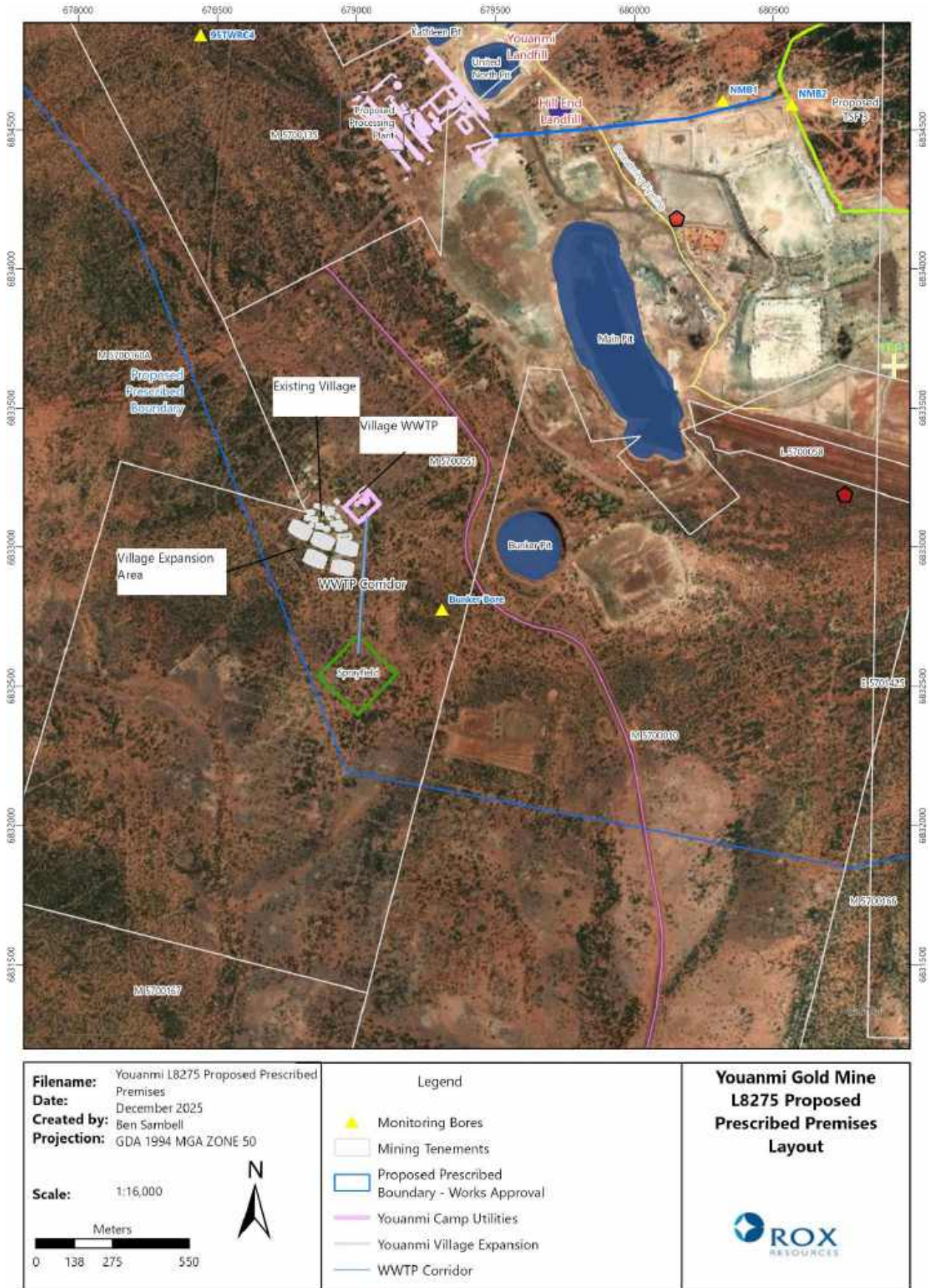
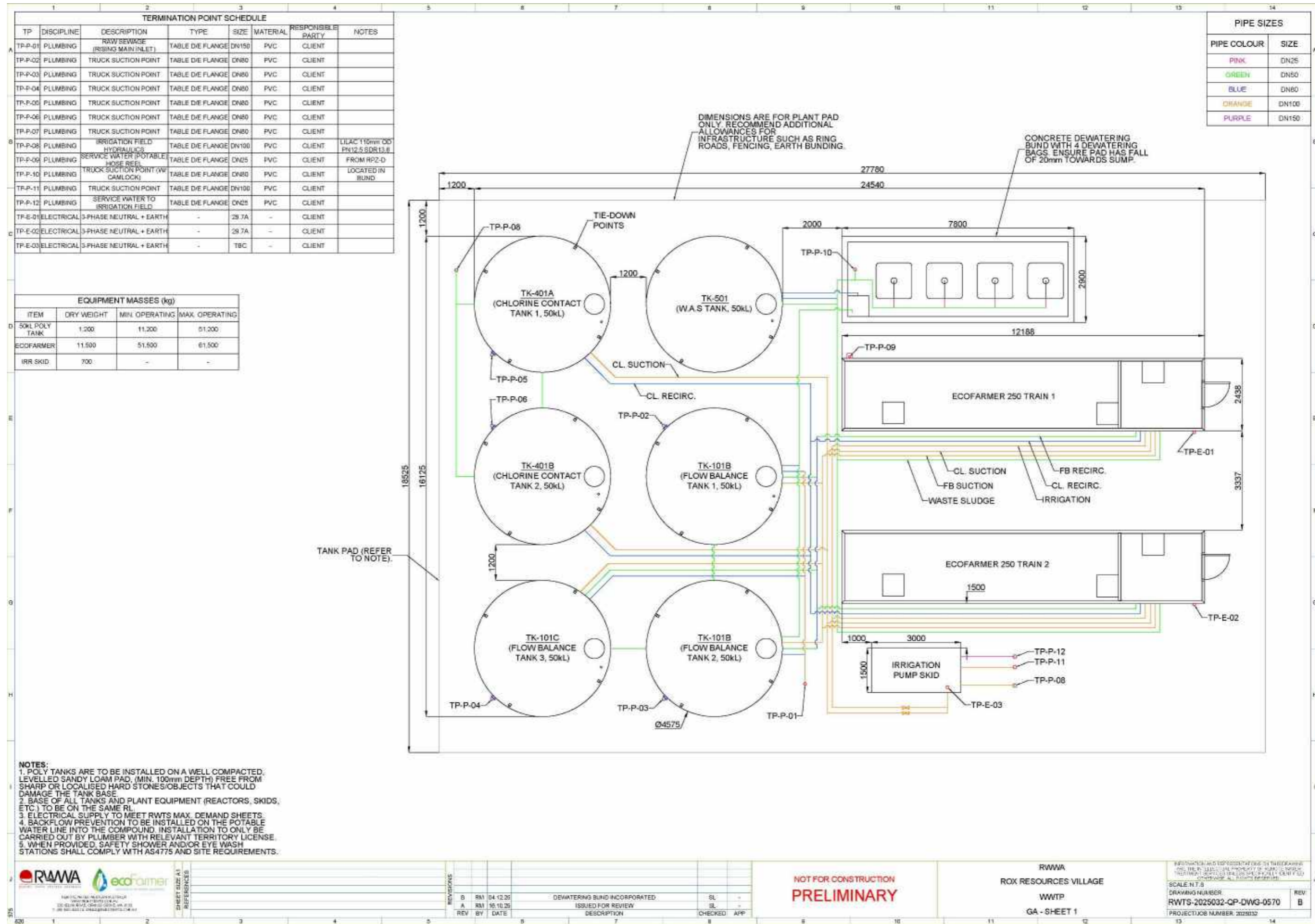


Figure 36: Village Expansion – WWTP and Spray-Field Plan



REV	BY	DATE	DESCRIPTION	CHECKED	APP
B	RM	04.12.20	DEWATERING BUND INCORPORATED	SL	-
A	RM	05.10.20	ISSUED FOR REVIEW	SL	-

NOT FOR CONSTRUCTION
PRELIMINARY

RWWA
 ROX RESOURCES VILLAGE
 WWTP
 GA - SHEET 1

SCALE	DRAWING NUMBER	REV
N.T.S.	RWTS-2025032-QP-DWG-0570	B

Figure 37: WWTP General Arrangement

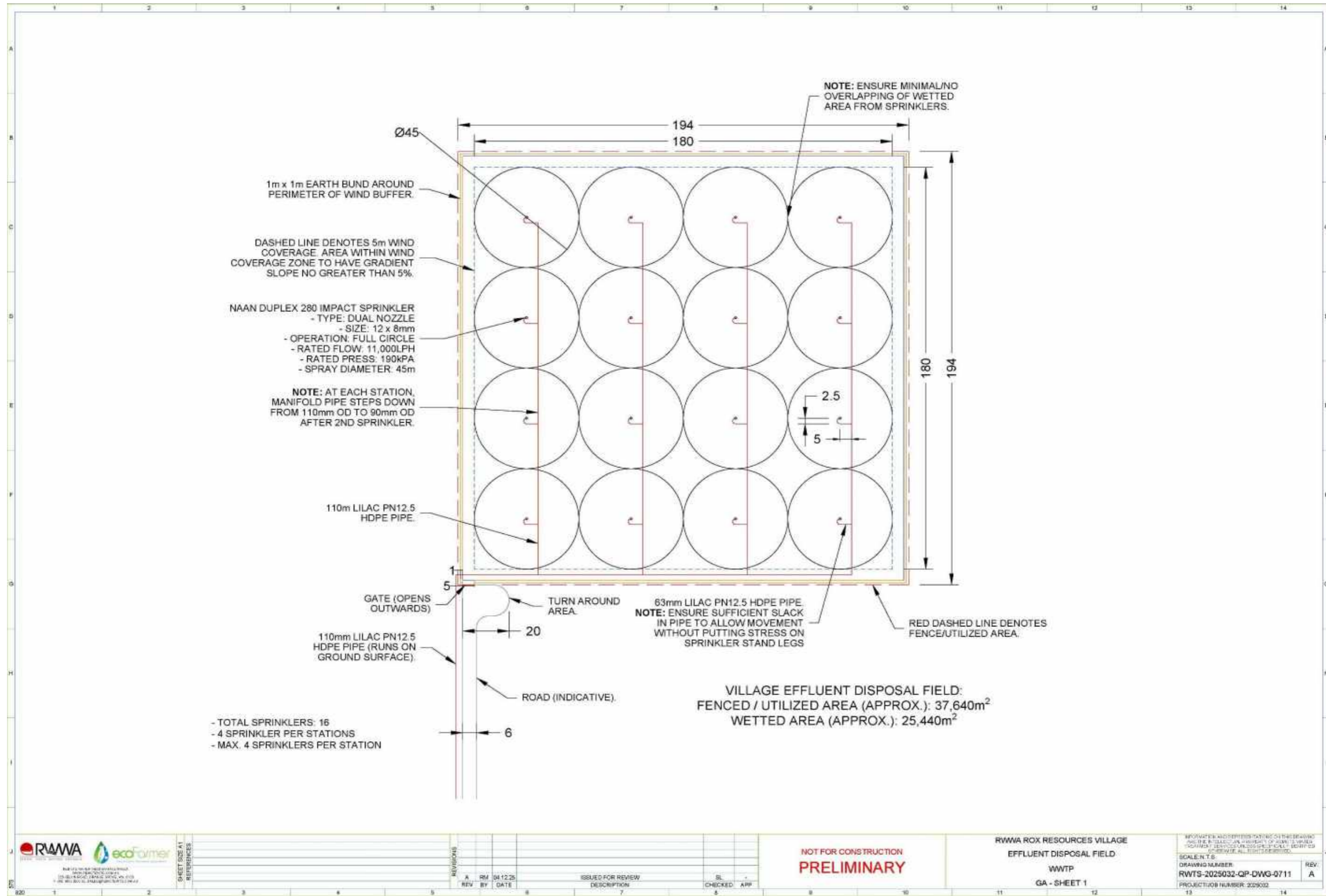


Figure 38: Spray Field General Arrangement

6.3 Sewage Treatment

6.3.1 Basis of Design

The hydraulic and organic loadings have been set as the basis for design of the WWTP, which has been sized according to this basis and the effluent standard requirements. The WWTP will produce secondary treated effluent meeting these standards provided influent loadings are not to be exceeded, and upstream management and servicing procedures maintained.

Table 23 below presents the design influent concentrations and the effluent quality expected. The influent concentrations relative to the hydraulic load for design are proportional, meaning the influent concentrations can be higher, if the hydraulic load is lower. The system is required to be tuned to site concentrations experienced. Table 24 summarises the various tanks incorporated in the WWTP design, along with their function and capacity.

Table 23: Design Influent and Effluent Quality

Characteristic & Units	Average Influent	Effluent Quality / Volume
PDWF ¹ (m ³ /day)	10 m ³ Min. Flow	100 m ³ Max. Flow
Design Irrigation Rate (DIR) (mm)	2.89	4.45 max
Biological Oxygen Demand - BOD (mg/L)	360	<20
Suspended Solids - SS (mg/L)	360	<30
Total Nitrogen - N (mg/L)	100	<20
NH ₃ - N (mg/L)	80	-
Total Phosphorus - P (mg/L)	20	<7.5
Faecal Coliforms (E-Coli) (units/100 ml)	-	<1,000
Total Dissolved Solids - TDS (mg/L)	-	<2,800

Table 24: Tanks & Sizing

Tank Description	Function	Capacity
Balance Tanks	Receives Raw sewage from the Site.	Coerco 50KL Capacity: 3 x 50,000 L
Waste Activated Sludge Tank	Waste Solids Storage Tank to assist in managing MLSS levels and system biological sludge age	Coerco 50KL Capacity: 1 x 50,000 L
2 x Sequential Batch Reactor (SBR) and Plant Room	Aeration, mixing, settling, decant. Treats effluent with a combination of air and mixing schedules controlled via the PLC an air induction pump adds the oxygen and then mixes the chamber for nitrogen conversion	Each Train - Overall: L. 12.0 m x H. 3.0 m x W. 2.4 m Each Train - Nominal Usable SBR Process Area Capacity: 50,000 L
Final Effluent/Chlorine Contact and blended RO brine storage Tanks	Treated effluent collection. Upon the decant phase of the SBR treated effluent is decanted and disinfected with Sodium Hypochlorite via chlorine	Coerco 50KL Capacity: 2 x 50,000 L

Tank Description	Function	Capacity
	dosing system and stored within the chlorine contact tank/ brine/ wet weather storage tanks before discharged to irrigation.	

6.3.2 Treatment Summary

The following information summarise the various components of the WWTP system, including design effluent quality. Full descriptions of the treatment process are contained in Appendix 10. RWTS (2025b). Youanmi Village Sewage Treatment System Design Information.

Raw sewage reports to the Balance Tanks (150,000 L) via a pump station comprising duty and standby pumps. The balance tanks are sized to hold the estimated peak flow influent and deliver a steady flow to the Sequential Batch Reactor (SBR). SBR inflow reports initially to an aerobic tank, then passes through treatment stages in an anoxic tank, aeration tank and clarifier tank.

Each cycle is a sequence of multiple aeration & anoxic cycles followed by settling, decanting and re-filling. Each sequence is adjustable for optimum treatment and nutrient removal based on site conditions through the HMI screen. Smart dosing is provided for balancing of Carbon to Ammonia Ratio, as well as Ammonia/Nitrogen and Phosphorous.

The WAS tank (stores waste activated sludge and foreign material. Waste sludge is then dewatered via Geobags and polymer dosing. A concrete dewatering bund is included in the design, sufficient to hold 4 Geobags for dewatering via dehydration.

Geobags will be disposed of in accordance with DoH requirements, regulated by the Shire of Sandstone via the licensed landfill on site. Off-site disposal of liquid or solid waste may also be required during the construction phase, which will be done via a licensed contractor.

Sludge age will average 8 - 21 days depending on hydraulic/organic loads. Each cycle will decant approximately 9,500 L / treat approximately 8,400 L of fluid – 2 trains provide a total maximum of 12 cycles per day. Discharge is to a dedicated 4 ha spray-field east of the village, via irrigation by 16 sprinklers arranged in 4 stations (Figure 38).

The overall treatment process will take approximately 24 hours. Treated waste water is sent for chlorine dosing to the chlorine contact / brine storage tanks and then blended with RO brine water. Chlorine delivery can be adjusted to ensure adequate initial dose is provided for minimum PPM hours needed for effective disinfection – based on final effluent quality. The target residual is 0.70 ppm after 3 hours of disinfection prior to irrigation to the environment.

Nitrogen in the form of Ammonia, and phosphorous are the two key nutrients that require reduction before treated effluent can be discharged. Chemical Nitrogen and Phosphorous removal employs smart-chemistry, and biological Nitrogen and Phosphorous removal employs a smart Anoxic operating phase controlled by software and methodology. These nutrients are reduced to as low as practical to ensure they comply with licence limits.

A final chemical polish/removal of remaining phosphorous results in TP levels <2.5 mg/l consistently when combined with the RWTS Hybrid SBR Process. This process produces Turbidity values <5 ntu. High Level warning limits and High-High Level alarm limits notify the operator the system is performing outside recommended guidelines.

Chlorine disinfects the final polished effluent from the SBR. A chlorine dosing system delivers a set amount of chlorine to the effluent flow during the decant process to disinfect the body of water fit for final irrigation. Irrigation is inhibited if complete disinfection has not occurred. A secondary disinfection function provides a delayed delivery of chlorine that is fully adjustable by the system operator. This is a reliable and robust disinfection platform that typically provides low E-Coli and Coliform levels when operated and maintained correctly.

6.4 Interim Sewage Treatment

As the expansion of workforce accommodation will be done in stages, a containerised WWTP system will be installed initially to service the Phase 1. This system will supplement the existing septic system to process all waste water from showers, ablutions, kitchen & laundry facilities and mine offices.

This system is designed to handle up to 80 persons/day, providing for the 60 new rooms plus spare capacity. It is an 8m x 3m containerised system, capable of treating up to 19.2 m³ of waste water per day (~7,000 m³ per annum). Treated water will be pumped for discharge to the 4 ha spray field, located to the east of the camp site (Figure 36).

This interim WWTP plus the existing septic treatment system are designed to treat <20 m³ per day, and therefore does not trigger the threshold for a Category 85 Prescribed Premises under Part V of the *Environmental Protection Act 1986*. The Shire of Sandstone will regulate approval for this facility in accordance with the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974.

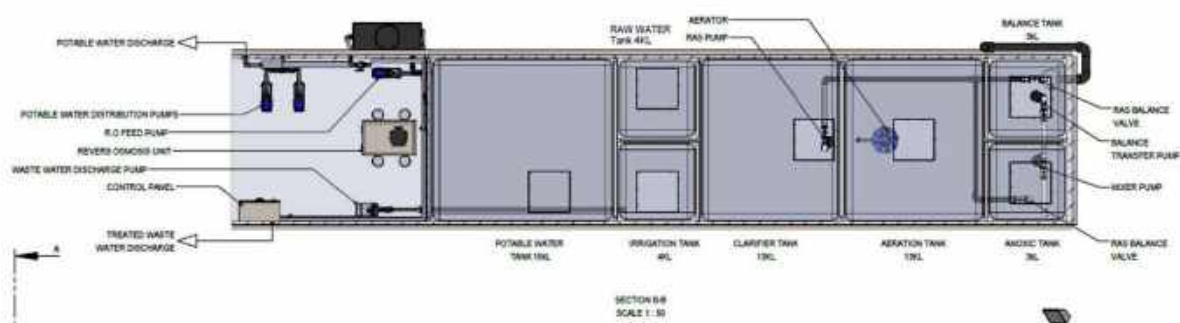


Figure 39: Interim WWTP Design

Water quality limits are set for effluent to minimise potential health risks and effects on the receiving environment. They are set before application monitored to determine compliance. Table 25 shows the design influent and effluent water quality specifications. The basic principles for land application are:

- The build-up of any substance in the soil should not preclude sustainable use of the land in the long term;
- The effluent is not detrimental to the vegetative cover;
- Any change to the soil structure should not preclude the use of the land in the long term;
- Any runoff to surface waters or percolation to groundwater should not compromise the agreed environmental values; and
- No gaseous emissions to cause nuisance odour (ANZECC/ARMCANZ, 1997).

Table 25: Interim WWTP Design Specifications

Parameter	Influent	Effluent output
Biological Oxygen Demand (BOD)	300 mg/L	<20 mg/L
Total Suspended Solids (TSS)	300 mg/L	<30 mg/L
Total Nitrogen (TN)	60 mg/L	<30 mg/L
Total Phosphorus (TP)	12 mg/L	<8 mg/L
pH	6.5 – 8.5	6.5 - 8.5
Oil & Grease	30 mg/L	
Free Chlorine	-	0.2 – 2.0 mg/L
E-Coli		<1,000 cfu/100 mL

6.5 Waste & Emissions

6.5.1 Effluent

Table 26 below summarises the WWTP effluent quality and volume to be discharged to the spray-field. Further details on the site conditions in the WWTP and spray-field area are provided in Section 13: Environmental Context. Further details on emissions, potential impacts and management controls are provided in Section 14: Controls & Management.

Table 26: Effluent Quality / Volume

Characteristic & Units	Effluent Quality / Volume
PDWF (m ³ /day)	100 m ³ / day (Max.)
ADWF (m ³ /day)	80 m ³ / day (Design)
RO Brine (m ³ /day)	27 m ³ / day (Max.)
Contingency	23m ³ /day
Irrigation Water (m ³ /day)	150 m ³ (Max)
Design Irrigation Rate – DIR (mm)	2.89 (average) 4.45 (max)
Biological Oxygen Demand - BOD (mg/L)	<20
Suspended Solids - SS (mg/L)	<30
Total Nitrogen - N (mg/L)	<20
NH ₃ – N (mg/L)	-
Total Phosphorus – P (mg/L)	<7.5
Faecal Coliforms (E-Coli) (units/100 Ml)	<1,000
Total Dissolved Solids – TDS (mg/L)	<2,800

6.5.2 Construction

Prior to construction, clearing of vegetation is required for the new (Stage 2) village, which includes the footprint required for the WWTP. All clearing will be conducted in accordance with requirements and conditions of native vegetation clearing permit (NVCP); CPS 11021/1), which has been issued for development of the mine and infrastructure.

The footprint of the village will be cleared of vegetation, and the topsoil stripped to a nominal depth of 100 mm. Some clearing will also be required for the spray-field, particularly along the fence-line and water pipe corridors, however vegetation is sparse in this area and most will remain un-disturbed.

Construction of the WWTP will involve excavation for concrete footings and the trenches required for supporting underground services, such as electrical and plumbing pipework. Earthworks will be conducted to prepare the site for the concrete slabs and bunded areas where the WWTP is to be located, followed by concrete works and installation of the pre-fabricated tanks and components.

Construction details, specifications and notes are included in Appendix 9. RWTS (2025a). WWTP Design Drawings, and Appendix 10. RWTS (2025b). Youanmi Village Sewage Treatment System Design Information.

6.5.3 WWTP Controls & Management

The WWTP will be actively managed by the village operator to ensure the system is working effectively and efficiently, and that the required effluent quality is achieved. The system requires appropriate fine-tuning and adjustments to meet site conditions, which will be done in accordance with the manufacturers specifications and guidance.

Visual inspections of the WWTP and spray-field will be undertaken daily, to ensure all components of the system are operating as designed.

Treated effluent throughput and quality is recorded continually by the system, which is monitored continuously by the operator. High & low level quality and volume alerts and alarms are also incorporated in the system, to trigger remedial actions as required.

Treated effluent samples will be taken monthly for laboratory analysis. Results will be reviewed immediately on receipt, and any negative trends or compliance items investigated and addressed. All monitoring results will be reported in the Annual Environmental Report (AER).

7 LANDFILL – CATEGORY 64

7.1.1 Existing Landfill – Cat. 63

There is an existing landfill at the mine site, currently situated within the United North waste rock dump (Figure 40 & Figure 41). The landfill is licensed via L8275/2008 as a Category 63: Class 1 inert landfill site. The assessed design capacity is 5,000 tonnes per annual period and the site is authorised to accept:

- Clean fill;
- Inert Waste Type 1;
- Uncontaminated fill;
- Inert Waste Type 2 - tyres, rubber and plastics.

Putrescible waste of <20 tonnes per annual period has also been disposed to the landfill in separate trenches.

7.1.2 Putrescible Landfill – Cat. 64

Development of the project is increasing personnel on site, which will increase generation of putrescible waste. Rox proposes to change the classification of the landfill to Class II, Category 64: Putrescible Landfill as putrescible waste is likely to exceed the 20 tonnes per year. Putrescible waste that cannot be reused or recycled will be disposed to the landfill. No changes are proposed to the existing licence conditions regarding management of the landfill, apart from the addition of putrescible waste and change of Category.

Rox will ensure all waste disposed to complies with waste types permitted for disposal in a Class II facility, in accordance with the Landfill Waste Classification and Waste Definitions 1996 (as amended 2019), published by DWER. This document provides guidance and criteria to be applied in determining the classification of wastes for acceptance to landfills licensed or registered in Western Australia in accordance with Part V Division 3 of the *Environmental Protection Act 1986*.

Existing landfill management includes:

- Inert and putrescible waste will be disposed into trenches, excavated within the United North WRD footprint. This waste dump is located over 100m away from any surface water feature and greater than 3m above the groundwater table;
- Putrescible waste disposed of at the Landfill is kept separate from the inert wastes;
- The tipping area of the landfill will not be greater than 30 m width and 3m in depth;
- The landfill will be covered on a monthly basis with inert material that is readily available with the waste rock dump footprint;
- Existing fencing surrounds the landfill facility which is designed to capture windblown waste (should it occur) and to prevent scavenging animals from entering;
- Stormwater will be diverted from the landfill trenches to ensure stormwater does not come in contact with waste;
- The landfill will be inspected regularly and where windblown waste is observed, this will be collected;
- Records of the type and volume of waste disposed of in the landfill will be kept, ensuring the annual cumulative waste volumes is compliant with Prescribed Premises Category limit, and reported in the AER; and
- No unauthorised waste is disposed of in the land fill.

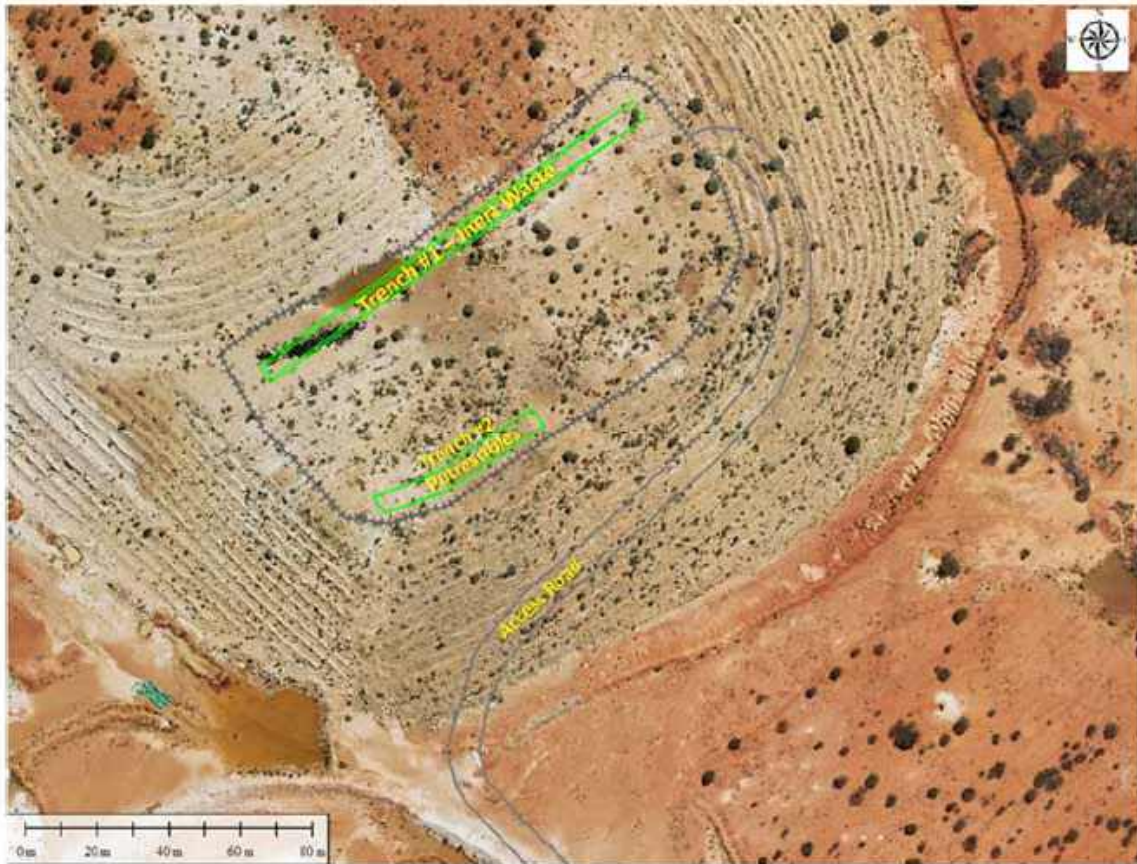


Figure 40: Landfill Trenches & Waste Type



Figure 41: Drone view (NW) of United North Access and Landfill

8 OTHER ACTIVITIES

8.1.1 Water Supply

The groundwater licence in place for the project (GWL208485) allows for annual water abstraction of 1,807,000 kL. Dewatering of Youanmi Main pit, United North Pit and Underground Operations will provide the primary supply for the process plant and dust suppression around site.

Once a steady state of production has been achieved from the TSF decant return system, raw water will be pumped from Kathleen & Rebel pits at a rate of approximately 1,300,000 L/annum. Water will be directed to:

- Processing Plant - up to 1,170,000m³/annum will be pumped to the processing plant, via the process water pond and or the raw water ponds. A raw water pond will be constructed with an overflow to the process water pond, but not vice versa. The process water pond will also receive water from:
 - The TSF (decant return water);
 - Excess mine dewatering via turkeys' nest dams or poly water storage tanks minus the volume of water used in dust suppression.

Water quality will vary during the LOM pending depth of water in pits and underground operations. Salinity increases at depth in underground workings, shown in 1996 when salinities in Hill end (~250 m deep) were about 9,000 mg/L TDS, compared to Youanmi Deeps (Down to 670 m.) of about 120,000 mg/L TDS (Rockwater 1996).

Main Pit water varied from saline to hypersaline (27,000 and 46,000 mg/L TDS) between mid-2022 to 2025, and dewatering discharge measured 50,000 mg/L TDS in April 2025 at the discharge point (AQ2 (2025a)). It is likely water supply will become progressively more saline over time, however there are also less saline options if project requirements dictate. Bunker Pit is low-salt (~2,300 mg/L TDS) and there is potential to develop dedicated supply bore-fields proposed by AQ2 (2025a).

8.1.2 Hydrocarbon Storage

The primary diesel compound will be located at the contractor's workshop area and will comprise a series of self-bunded tanks and with a concrete bunded refuelling apron. Bulk oil will be stored within a concrete bunded area and/or on self-bunded pallets. Waste oil will be collected in designated waste oil tanks and removed from site by a licenced contractor.

A workshop maintenance facility will be constructed onsite to support the mining fleet and will generally consist of covered repair and servicing bays, with unsealed hardstand work areas surrounding them. The facility will be supported with water and compressed air services and be adequately lit for night works. All diesel storage tanks will comply with statutory requirements.

8.1.3 Explosives Storage

A magazine compound to facilitate blasting activities has been constructed on the eastern side of the existing United North WRD. This location meets the required separation distance stipulated in AS 2187.1:1998 Explosives – Storage Transport and Use and storage of explosives will be in accordance with Dangerous Goods Safety (Storage and Handling of Explosives) Regulations 2007. An explosive storage licence has been obtained via DMPE.

8.1.4 Treatment of Hydrocarbon Contaminated Water

Hydrocarbon-contaminated water from the vehicle washdown bay and workshop will report to a concrete sump, prior to being treated through an oil-water-separator. Treated water will then report to a poly water storage tank, prior to being reused at the washdown bay and/or dust suppression around the site. The concentration of total hydrocarbons in the treated water is anticipated <15 mg/L.

8.1.5 Bioremediation Pad

Bioremediation pads will be established to manage and treat hydrocarbon contaminated soil collected following any leaks or spills that may occur across the life of the project. Pads will be approximately 0.5ha and comprise a compacted layer of clayey mine-waste material, with earthen bunds to control runoff. Figure 42 shows the location of the bio-remediation area.



Figure 42: Bioremediation Pad Location

9 ENVIRONMENTAL COMMISSIONING

9.1 Commissioning Schedule

The Project will be constructed, developed and commissioned in stages as presented in Table 27, also shown in Figure 43. Note, this schedule is indicative at this early stage of the Youanmi Project development, and subject to achieving all required regulatory approvals, supply delays, inclement weather or other unforeseen circumstances out of Rox control. DWER will be notified of any substantive changes.

The commissioning process for each prescribed premise activity is described below. Rox will submit compliance documents for the applicable facilities once construction has been completed and prior to commencement of commissioning.

Table 27: Indicative Schedule - Construction, Development and Commissioning

Stage	Component	Estimate Construction Dates
Stage 1	Landfill	Q2 2026
Stage 2	Wastewater Treatment Plant	Q2 2026
Stage 3	Evaporation Ponds	Q3 2026
Stage 4	Power Station	Oct 2026 – June 2027
Stage 5	TSF3 – Starter Embankment (462 mRL)	Oct. 2026 – June 2027
Stage 6	Processing Plant	May 2026 – June 2027

9.2 Landfill Facilities

The commission process for the landfill will have the following phases:

- Pre-commissioning – checks to confirm the infrastructure has been built according to relevant plans and specifications; and
- Commissioning – commence disposal of waste materials to landfill.

9.3 Waste Water Treatment Plant

The commission process for the WWTP will have the following phases:

- Pre-commissioning – checks to confirm the infrastructure has been built according to relevant plans and specifications;
- Wet-commissioning - test operation of equipment and facilities with water; and
- Commissioning – add waste-water into system and commence disposal of waste water to spray-field.

9.4 Evaporation Ponds

The process for commissioning of the Evaporation ponds will involve the following phases:

- Pre-commissioning – static checks on unpowered equipment to confirm that the infrastructure has been built according to relevant specifications; and
- Commissioning – test operation of equipment and facilities with water.

9.5 Power Station

- Pre-commissioning – checks to confirm the infrastructure has been built according to relevant plans and specifications;

- Wet-commissioning - test operation of equipment and facilities with fuel; and
- Commissioning – add load to distribution network and commence to power-up infrastructure.

Site preparation works to be undertaken prior to construction of the Prescribed Premises proposed do not form part of the Works Approval Application. Site preparation works include clearing of vegetation (NVCP approved), bulk earthworks (including excavation, trenching, culverts, shaping, sheeting, compaction works) and civil works relating to ground preparation of hard stand areas for laying slabs.

Foundation / footings, columns, sumps and other concrete works and foundations (including processing plant foundations) do not constitute any form of emissions yet to be assessed or approved under this Works Approval Application.

9.6 Processing Plant & TSF3

To commission the processing plant will involve the following phases:

- Pre-commissioning – static checks on unpowered equipment to confirm that the infrastructure has been built according to relevant specifications;
- Dry-commissioning – test operation of ‘empty’ equipment and facilities without the addition of ore, water, reagents or air;
- Wet-commissioning – test operation of equipment and facilities with water; and
- Ore-commissioning - test operation of equipment and facilities with ore, reagents, water and air.

Wet commissioning of each component will not begin until pre-commission and dry commissioning tests have been passed. During ore commissioning, material feed to the processing plant will be gradually increased until steady-state design volume is achieved.

The commission process for the TSF will be combined with the processing plant, as all water and subsequent tailings waste will be discharged to the TSF. Once wet-commissioning of the plant reaches the point where discharge of water is required, it will report to the TSF. The commissioning phases for the TSF include:

- Pre / Dry-commissioning – static checks on unpowered equipment to confirm that the infrastructure has been built according to relevant specifications;
- Wet-commissioning – test operation of equipment and facilities with water; and
- Tailings-commissioning - test operation of equipment and facilities with tailings.

To enable gold processing to continue as the Processing Plant and TSF3 transitions from ore commissioning to operations, a Time Limited Operations is requested for a period of 6 months (180 calendar days). This will allow time for compiling the monitoring data and other information from construction and commissioning, and assessment of the Prescribed Premises Licence Application. Activities undertaken during Time Limited Operations will not differ from future licensed operations.

9.7 Environmental Commissioning

Environmental commissioning is testing undertaken to validate actual environmental performance relative to predicted performance. This is a separate activity to commissioning that may occur for production or to check that contractors have completed construction works as agreed.

Rox understands that specific requirements for environmental commissioning may be required by the DWER and Works Approval conditions. Rox will liaise with DWER regarding commissioning and time-limited operation, to ensure compliance is maintained prior to issue of the amended licence.

9.8 Environmental Compliance Report

Following construction, Rox will submit an Environmental Compliance Report for the Youanmi Project Processing Plant, Power Station, Landfill, Evaporation ponds, Wastewater Treatment plant and TSF 3 in accordance with Works Approval conditions. The Environmental Compliance Reports will be prepared by a suitably qualified or experienced professional, to confirm that infrastructure has been constructed with no material defects, and that all Works Approval conditions relating to the construction and installation of the infrastructure have been complied with.

9.9 Licence Application

Rox will submit a Licence Amendment Application following the completion of works in accordance with the conditions of the granted Works Approval. This will be submitted once the required reports (Environmental Compliance Report) are provided to the DWER. Rox is planning for the Time Limited Operations to begin, once the TSF 3 - Starter Embankment) is completed. Operation under Licence conditions will begin when the Licence is granted (prior to the expiry of the Works Approval).

Rox understands that for the staged construction of TSF 3 that the later Stages cannot be operated under the granted Licence until the works have been certified as compliant following submission of an Environmental Compliance Report. The granted Licence will require an Amendment Application to incorporate the operation of each of the stages of TSF 3, and provide any relevant conditions related to the new works. Rox requests that TSF 3 are authorised as Time Limited Operations to allow for the assessment of the Licence Amendment Application.



		CY25		CY26				CY27			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Key Project Milestones	Deliverables	DFS	Funding and FID	Mill construction and commissioning				First gold	Operating		
Growth	Resource extensional drilling			Extensional drilling - From Surface and underground							
	Exploration drilling			Exploration drilling - From Surface							
Development	Resource definition drilling			Resource definition drilling - From Underground							
	Approvals	MDCP Plant & Tails									
		Works Approvals									
	Camp Construction	Phase 1 60 Rooms	Phase 2 - 240 Rooms and Dry Mess								
	Design	Plant Engineering Drawings and Early Component Orders									
	Mill Construction			Processing Plant Ground Works	Processing Plant Construction						
	Related Infrastructure Construction					Construction of Tailings Storage Facility, Power Station, Oxygen Facility					
	Dewatering	Main pit and start of Youanmi UG									
	Underground Mining	United North Decline		Commence Pollard Decline, Rehab of Main Decline, building to Steady Production Build +190kt Stockpile							

Figure 43: Timeline - Pathway to Production (DFS, Nov. 2025)

10 OTHER APPROVALS

10.1 Mining Act 1978

The Youanmi Project has previously been approved for development and mining by the Department of Mines, Petroleum and Exploration (DMPE) under the *Mining Act 1978*. Rehabilitation and Closure of all mining related disturbance and infrastructure is to be done in accordance with the Mine Closure Plan and subsequent amendments.

In June 2025, Rox submitted a revised and updated Mining Proposal and Mine Closure Plan for the Project (REG ID: 50661) for further mining and development at the Project. Reg. ID: 50661 and has since been approved by DMPE, which underpins re-entry to the existing underground portals within Main Pit and United North Pit, plus further development and mining of underground resources.

An updated approval under the Mining Act 1978 has been prepared and submitted which includes infrastructure detailed in this Works Approval application.

10.2 Environmental Protection Act 1986 (Native Vegetation Clearing)

A Native Vegetation Clearing Permit (NVCP) for the Processing Plant, TSF3, Evaporation Ponds, village and power infrastructure is required. The NVCP was approved on 8th August 2025: Purpose Permit - CPS 11021/1, which covers clearing for construction and operation of all infrastructure proposed in this application. All clearing activities will be undertaken in accordance with this permit and associated conditions.

10.3 Rights in Water and Irrigation Act 1914

Groundwater abstraction at the Project is authorised by the *Rights in Water and Irrigation Act 1914* (RIWI Act) abstraction licence; GWL 208485(1). This licence authorises the combined extraction of up to 1,807,000 kL from pits and production bores at Youanmi to facilitate mining and development of the Project. Groundwater abstraction, management, monitoring and reporting is conducted in accordance with conditions of the licence and associated Groundwater Licence Operating Strategy (GLOS).

11 STAKEHOLDER ENGAGEMENT

11.1 Stakeholder Identification

This section identifies the key stakeholders, describes the ongoing stakeholder strategy and presents the engagement outcomes to date. Interest in the Project includes neighbouring pastoral stations, indigenous groups, the local shire and regulators. Table 28 lists the identified stakeholders and their primary interest.

Rox Resources has engaged with all relevant stakeholders as part of the exploration and feasibility phases for each of the project's development into operations. The Stakeholder Register is provided as Appendix 1 to the Works Approval Application, and is not duplicated in this Supporting Document.

Table 28: Youanmi Stakeholders

Stakeholder	Interest
Yuinmery Pastoral Station	Yuinmery Station is a neighbour to the Youanmi project. Initial consultation with the pastoralist has been undertaken.
Atley Pastoral Station	The Youanmi Project is bordered by Atley Station to the north, east and south. Initial consultation with the pastoralist has been undertaken.
Shire of Sandstone	The project is located within the Shire of Sandstone and utilises roads managed by the Shire. Initial consultation has occurred and discussions are ongoing with the Shire.
Badimia Barna Native Title Group	Native Title Claimants
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)	Regulator
Department of Water and Environmental Regulation (DWER)	Regulator
Department of Biodiversity, Conservation and Attractions (DBCAs)	Government department responsible for management of conservation significant flora and fauna, of which several occur within the wider project area.
Department of Planning, Land and Heritage (DPLH)	Government department responsible for management of land and Heritage. The Youanmi townsite was gazetted in 1910.

Quarterly, Ad-hoc or as required, *Methods selected will be influenced by the issue to be discussed.

12 SENSITIVE RECEPTORS

12.1 Residential Receptors

A sensitive land use is a residence or other land use which may be affected by an emission or discharge associated with the proposed activities. The WA Environmental Protection Authority (EPA) Guidance Statement No.3 “Separation Distances between Industrial and Sensitive Land Uses” notes that land uses considered to be potentially sensitive to emissions from industry and infrastructure include residential developments, hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, childcare facilities, shopping centres, playgrounds, and some public buildings.

The Project is situated within the Shire of Sandstone, with the nearest town to the project being Sandstone, situated 90 km east of Youanmi. The closest residence to the project are the pastoral homesteads of Meeline Station, Atley Station and Yuinmery Station. Yuinmery Station homestead is 17km, Atley station homestead is located approximately 29km and Meeline Homestead approximately 60km from the Youanmi mining area (Table 29 and Figure 44). No negative social impacts are anticipated from the proposed activities in this works approval.

Table 29: Socio-Economic Receptors and Distance from Prescribed Premises Boundary

Residential and Social Sensitive Premises	Distance from Prescribe premises boundary
Town of Sandstone	90 km northeast
Yuinmery Station Homestead	17 km east (Homestead)
Meeline Station and Homestead	60 km west (Homestead)
Atley Station and Homestead	29 km northwest (Homestead)

12.2 Environmental Receptors

Native Vegetation Solutions (NVS) completed a reconnaissance flora and vegetation survey of the Youanmi Project in 2022, covering an area of approximately 1,751 hectares (NVS 2022). No Threatened Flora were recorded in the survey area, (DBCA, 2022a). One Priority Flora species was recorded in the survey area, *Calytrix hislopilii* (P3). Six locations with a total population size of 139 plants were recorded around 740 meters North West of the landfill.

No Threatened Ecological Communities (ECs) or Priority Ecological Communities (PECs) were recorded in the survey area. No unique or restricted vegetation communities were identified, and all vegetation types/communities are common, widespread and well represented in the Eastern Murchison subregion.

Western Ecological undertook a single season detailed terrestrial vertebrate survey of the project area and surrounds in October 2022, recording 78 vertebrate species including 47 bird species, 15 reptiles and 16 mammals (13 native and three introduced). Twenty-five vertebrate fauna species and one invertebrate species of conservation significance (including Priority species) were identified from database searches of a 100 km radius from the survey area including seven mammals, 17 birds and one reptile. Four of these species are considered possibly or likely to occur in the survey area (Table 31). No fauna of conservation significance were recorded in the survey area, however, one Malleefowl sighting was recorded opportunistically 7 km south of the survey area.

The location of the Environmentally Sensitive fauna relative to the Prescribed Premises boundary is shown in Figure 51, with no negative impacts anticipated from the proposed activities. Further information is provided in Section 13.3 Biodiversity.

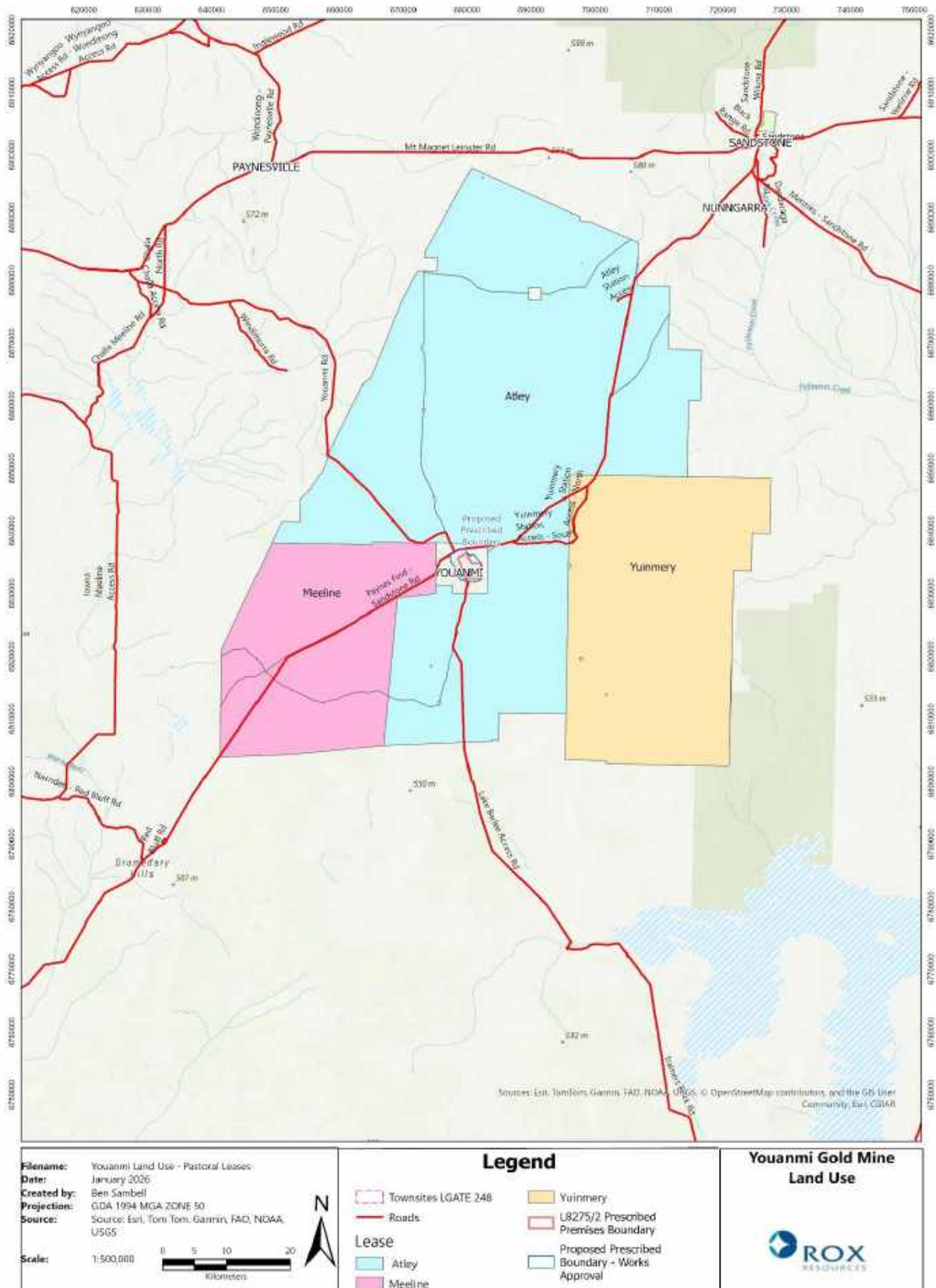


Figure 44: Sensitive Residential Receptors

13 ENVIRONMENTAL CONTEXT

13.1 Climate

The Youanmi Project is located in the arid climatic region in Western Australia, characterised by hot, dry summers and cold winters. According to the Bureau of Meteorology (BoM), mean maximum daily temperature at Mount Magnet Airport (approximately 89 km north-west of the Project area) is 28.7°C, with a mean minimum daily temperature of 15.3°C. The hottest month is January, with a mean maximum temperature of 38.2°C. The coldest month is July with a mean minimum temperature of 7.1°C and a mean maximum of 19.1°C.

The mean annual rainfall (1995 – 2024) at Mount Magnet Airport (BoM weather station 7600) is 244.7 mm. Rainfall at the project is erratic, and average rainfall figures can be misleading. The average annual evaporation rate of 3,440 mm, which exceeds the mean average rainfall in all months and is the dominant component of the hydraulic regime (BoM 2025a). Figure 45 below shows the climatic data for the Project area.

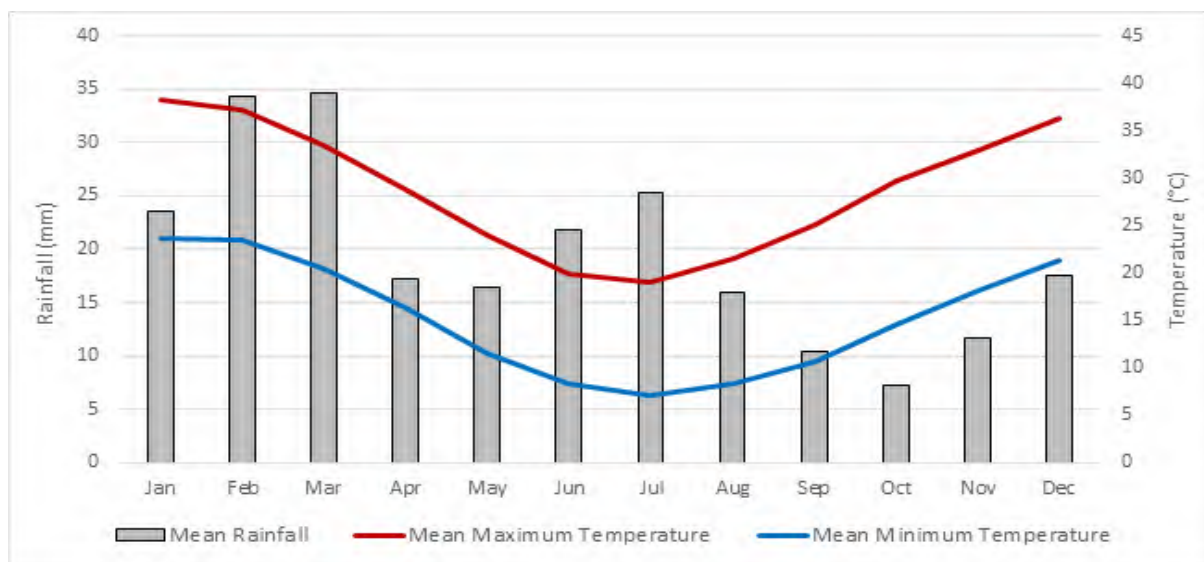


Figure 45: Climatic data for the project area

13.2 Ground & Surface Water

13.2.1 Hydrology and Hydrogeology Studies

The last operating periods (1987 – 1993, and 1995 – 1997) resulted in a number of open pits, with underground operations extending beneath Main Pit into the Main Lode and Pollard workings. Excess dewater was managed in a series of unlined evaporation ponds. When mine dewatering ceased in 1997, the underground and pits filled with groundwater.

Ground and surface water studies were carried out by AQ2 (2025a and 2025b) to support the currently proposed restart to underground mining, plus associated ore processing, tailings storage, dewater management and ancillary infrastructure described in this application. Summaries of AQ2 (2025a and 2025b) are provided in the sections below. Table 30 details these and previous hydrology & hydrogeological Studies completed for the Youanmi Project.

The two AQ2 study reports (AQ2 2025a and 2025b) are provided as Appendix 3. AQ2 (2025a). Youanmi DFS Water Studies, and Appendix 8. AQ2 (2025b). Evaporation Pond Expansion Hydrological Impact Assessment. The reports document the methodology and outcomes of the

studies and assessments completed on the local surface water and groundwater systems, which included:

- Project water supply studies;
- Dewatering investigations, including potential surplus volumes requiring discharge;
- Development of the integrated Site Water Balance, including current and required discharge options;
- Hydrological flood studies, potential surface water impacts, risk and management;
- Environmental, hydrogeological and hydrological impact assessments for TSF3 and the evaporation pond extension, including:
 - Construction impacts and management;
 - Operations impact assessment, including potential impacts of spills, overflow and seepage on local environmental values, plus groundwater & surface water regimes, and
- Proposed water management strategies, controls and monitoring.

Table 30: Summary of Hydrology & Hydrogeological Studies

Study Name	Reference
Youanmi Gold Mine: Results of Groundwater Monitoring Jan 1993–June 1996	Rockwater, 1996
Assessment of Dewatering Flows Youanmi Gold Mine	Wharton, 2021
Hydrogeological Assessment Grace Pit	Rockwater, 2022a
Hydrological assessment of Youanmi Report	Rockwater, 2022b
H2 Level Hydrogeological Assessment	Rockwater, 2022c
Dewatering to Northern Pits	AQ2, 2024
Youanmi DFS Water Studies	AQ2, 2025a
Evaporation Pond Expansion Hydrological Impact Assessment	AQ2, 2025b

13.2.2 Water Balance

A site water balance model has been developed for the Youanmi Mine Operations by AQ2 (2025a). The Water Balance circuit for the Project is shown schematically below in Figure 46. The model was developed in GoldSim for the purpose of achieving the following over the mine life:

- Quantifying water demands for different streams of water required at the mine.
- Comparing the water demands to the available supply of water from different mandatory water generating activities (such as dewatering);
- Quantifying the amount of make-up water required from discretionary supply sources for each of the water streams;
- Quantify the amount of surplus water (across the different streams) which may be generated by the Project; and
- Account for fluctuations in the water circuit due to climatic variability.

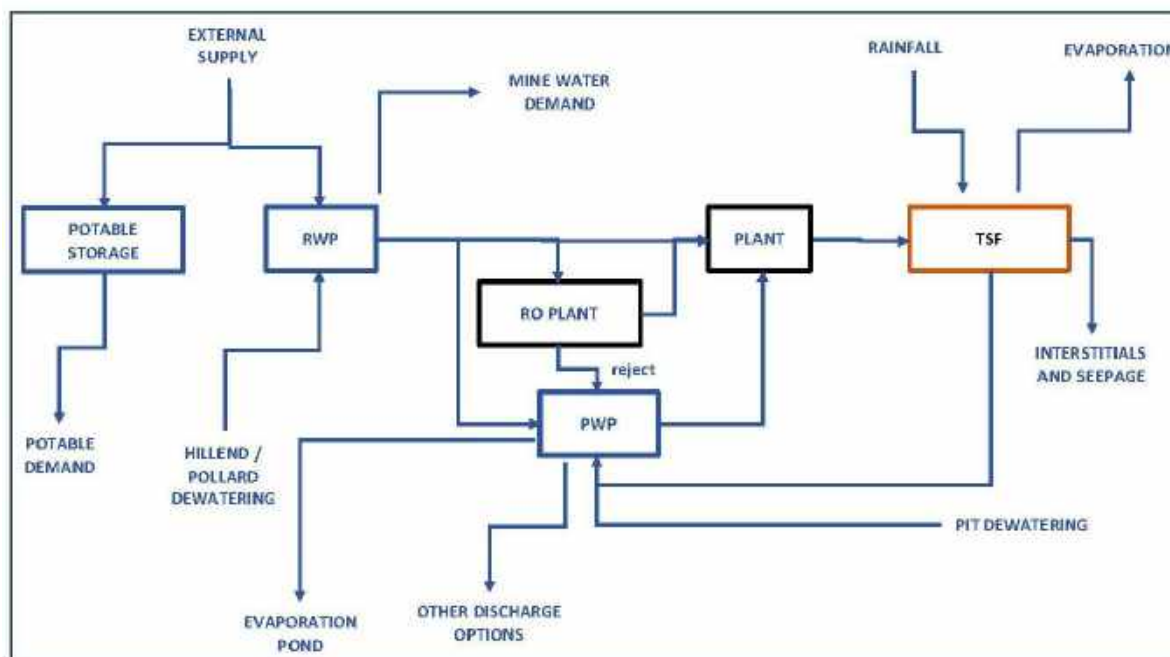


Figure 46: Adopted water circuit for Water Balance (AQ2 2025a)

13.2.3 Hydrogeology

The Youanmi deposits lie near the faulted contact (Youanmi Fault, trending at about 3300) between schistose and gneissic granitic rocks to the north and east, and greenstones to the west and south. The greenstones are mainly mafic volcanics and volcanoclastics with minor banded iron (BIF) and chert horizons. There are common dolerite dykes and porphyry dykes and sills. Mineralisation is associated with shear zones that splay to the north-north-west from the Youanmi Fault; or to the north-east (Rockwater 2022).

The local and regional underlying bedrock has little to no primary aquifer permeability and its aquifer potential is associated with fracture and weathering induced secondary permeability and porosity.

The main zones of permeability are probably within the mineralised shears, the BIF and chert, and to a lesser degree, the transition-zone (slightly weathered) rocks. Permeability (hydraulic conductivity) may decrease with depth, as very deep fractures tend to be closed. Some of the faults are considered to be hydraulic barriers, resulting in different groundwater levels and salinities in each fault block. However, a drive at the 1050 level (50 m AHD) intersected large groundwater flows when it cut the Main Pit Fault in BIF, and the permeability is reported to extend down to at least 940 RL (-60 m AHD) (Rockwater 1996).

The original water-table level was probably about 30 m below ground level, but there are no pre-mining water-level records in the area. A water level of 23.2 m bgl (451 m AHD) is recorded for Town Well, west of the mining area, and pre-mining water levels were probably similar in the mining area. The original water-table would have sloped gently downwards to the south: Data from the DWER Water Information Reporting (WIR) database indicate hydraulic gradients (downwards to the south) of 0.0052 in the area north of Town Well, and 0.0016 in the area to the south. The groundwater would have discharged to the Lake Noondie palaeodrainage, south of Youanmi.

Groundwater salinities measured in shallow pastoral wells within 10 km of Youanmi ranged from 820 to 9,300 mg/L TDS (WIR database); salinities of less than 2,000 mg/L TDS were measured in the Rebel pit bore, United North Pit (to early 1995) and in Bunker pit in 1994. Groundwater salinity increases with depth, and so the salinity of water produced from United North and Bunker pits increased as water levels were lowered. Groundwater salinity also increased with depth in the underground workings; in 1996, salinities were lower in the Hill end workings (about 9,000 mg/L TDS) at about 250 m depth, than in the Youanmi Deeps (about 120,000 mg/L TDS) at depths down to about 670 m.

AQ2 (2025a) summarised water quality monitoring records from mid-2022 to 2025 for production bores, monitoring bores and pit lakes, which indicate the following:

- Salinities recorded in pit lakes:
 - Main Pit – between 27,000 and 46,000 mg/L TDS (saline to hypersaline);
 - Rebel, Kathleen and United North Pits – 3,000 to 7,500 mg/L TDS (brackish);
 - Bunker Pit – between 400 and 5,200 mg/L TDS, averaging 2,300 mg/L TDS (fresh to brackish).

The recent water analysis in these pits indicates an increased salinity in the pit lake water since 1995, likely attributed to the high evaporation rates that increase the salt concentrations within the pits.

Table 27 summarises recent analysis of groundwater water quality in the Youanmi monitoring bores. The data indicates groundwater is generally slightly alkaline, ranging from neutral to alkaline (pH range of 6.95 to 8.2) of a sodium chloride type water. Salinities are in the range of pre-mining groundwater and of low cyanide (particularly free cyanide) concentrations. Metal concentrations were also found to be low, with most of the metals and minor constituents below levels of detection. There were some low concentrations of arsenic, barium, boron, nitrate, and two BTEX constituents.

Salinities recorded in monitoring bores included:

- Town bores along the creek line (94TWRC2 & 94TWRC4) – between 370 and 1,400 mg/L TDS (fresh);
- NMB1 and NMB2 east of the mining area – 5,000 to 8,000 mg/L TDS (brackish);
- Evaporation pond bores – SMB2 and SMB3 from 2,000 to 4,000 mg/L TDS (brackish) and SMB3 from 18,000 to 41,500 mg/L TDS (saline);
- Bunker Bore and Rebel Bore– average 820 and 1,200 mg/L TDS, respectively (fresh).

Groundwater levels from recent monitoring indicate the following:

- Pre-mining groundwater levels in the mine area were around 20 mbgl;
- Levels in monitoring bores range from 427 mAHD in YD64 near Main Pit, to 440.4 mAHD in the 94TWRC1 (Town Well). Water levels have ranged between 21.5m and 32m bgl, with levels steady since Jan. 2021, with minor seasonal fluctuations;
- The water table levels in the open pits range from 417 mAHD in Main Pit, to 432 mAHD in the Rebel Pit. These are lower than groundwater levels in surrounding rocks due to evaporation losses from the pits. Water levels in Rebel, Kathleen, United North and the Main Pits fluctuate in response to rainfall and evaporation;

- Current groundwater levels have been influenced by the mined-out pits, which are all groundwater sinks. That is, the pit lakes that have developed are all below the general water table, as a result of evaporative loss from the lake surfaces, and the pits act as groundwater sinks.
- The pit lake in the Main Pit prior to pumping beginning was around 50 m below ground surface and the pit lakes in the northern pits were around 40 m below surface. As a result, there was groundwater flow to all pits and this flow has influenced the general groundwater flow patterns and local groundwater levels.

The predicted water table mound around the TSF shows a water table rise of 5 m extending around 190 m from the inside toe of the TSF after 10-years operation. This equates to the water table approximately 25 m below surface at the margins of the TSF. The mound rapidly decreases in magnitude with distance from the TSF and the predicted water table rise is less than 1 m at 320 m distance from the inside toe of the TSF.

Seepage losses will be minimal at the start of operation and gradually increase as the height of the TSF is raised. Seepage flows will initially be semi-radially away from the TSF under the influence of the water table mound, but will eventually come under the influence of regional hydraulic gradients and flow to the south south-east towards the Main Pit. Main Pit is a long-term groundwater sink during (due to dewatering) and after mining (post-closure). It is not expected there will be any seepage flow away from the Project site.

AQ2 (2025a) determined an additional 20 L/second of dewater required discharge and management. An expansion of the existing evaporation ponds was deemed viable and the design developed by TailCon (2025b). An addition hydrological study was commissioned to assess the hydrological impacts of the EPE (AQ2 2025b). Hydrogeological aspects included:

- Development of a seepage model to predict the likely maximum water table mounding for the EPE;
- Determine the seepage flow direction;
- Groundwater monitoring recommendations.

The AQ2 (2025b) model predicted the water table mound outside of the area cleared for the EPE to be <10 m. This is well below ground surface (i.e. 14 mbgl), also below the 6 mbgl trigger level for implementing preventative actions. There are minimal impacts anticipated on vegetation (due to inundation of tree roots) and surface soils due to water table mounding.

Seepage will move away from the EPE initially semi-radially but will become dominated by existing regional hydraulic gradients a short distance away from the EPE. Seepage flows will then largely be in an Westley direction towards the Main Pit. The ultimate fate of any seepage will be towards and into the Main Pit (i.e., seepage flows will be “captured” by the pit).

There are no known Groundwater Dependent Ecosystems (GDE’s) or other groundwater users within the predicted water table mounding area. Dewater discharge to the proposed EPE will have no long-term impact on the local hydrogeological environment.

Further information on groundwater risks, controls, management and monitoring is provided in Section 14: Controls & Management. Also Category specific infrastructure described in Section

2: Processing Plant – Category 5 Section 3: Tailings Storage Facility (TSF) – Category 5, and
Section 4: Evaporation Ponds - Category 6.

Table 31: Laboratory analysis of monitoring bores (June 2025)

Bore ID		95TWRC4	NMB1	NMB2	SMB1	SMB2	SMB3	Bunker Bore	Rebel Bore
Analyte	Unit								
Date Sampled		16 June 2025							
Acidity	pH	7.85	7.91	7.78	7.46	8.01	7.99	7.64	8.05
Electrical Conductivity (EC)	µS/cm	2,180	8,620	11,200	34,700	3,640	3,660	701	2,010
Total Dissolved Solids (TDS)	mg/L	1,290	5,020	5,080	21,100	1,970	1,970	456	1,080
Total Suspended Solids (TSS)	mg/L	78	<5	8	36	30	<5	<5	<5
Hydroxide Alkalinity as CaCO ₃	mg/L	<1	<1	<1	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO ₃	mg/L	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO ₃	mg/L	154	230	165	99	196	224	66	137
Total Alkalinity as CaCO ₃	mg/L	154	230	165	99	196	224	66	137
Acidity as CaCO ₃	mg/L	3	15	17	32	9	3	3	3
Total Hardness as CaCO ₃	mg/L	0.001	0.075	0.080	0.038	0.017	0.047	0.001	0.027
Aluminium	mg/L	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/L	<0.01	0.044	0.023	<0.005	<0.001	<0.001	0.002	0.003
Bromide	mg/L	1.68	3.43	5.72	15.60	3.04	2.57	0.21	1.24
Calcium, Ca	mg/L	98	250	339	2,930	120	108	20	60
Cadmium, Cd	mg/L	<0.0001	0.0001	0.0001	0.0009	<0.0001	<0.0001	<0.0001	<0.0001
Caesium	mg/L	<0.001	0.001	0.001	<0.005	<0.001	0.001	<0.001	<0.001
Chromium	mg/L	<0.001	0.001	0.001	<0.005	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/L	<0.001	0.039	0.012	0.007	<0.001	0.001	<0.001	<0.001
Copper	mg/L	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	0.002	0.003

Bore ID		95TWRC4	NMB1	NMB2	SMB1	SMB2	SMB3	Bunker Bore	Rebel Bore
Analyte	Unit								
Lead	mg/L	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
Lithium	mg/L	0.010	0.046	0.059	0.037	0.015	0.027	<0.001	0.038
Manganese	mg/L	<0.001	1.13	0.004	<0.005	<0.001	<0.001	0.013	0.001
Nickel	mg/L	<0.001	0..05	0.001	0.01	<0.001	<0.001	<0.001	<0.001
Rubidium	mg/L	0.003	0.028	0.026	0.046	0.011	0.01	0.004	0.01
Selenium	mg/L	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01
Thallium	mg/L	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
Thorium	mg/L	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001
Uranium	mg/L	0.001	0.075	0.080	0.038	0.017	0.047	0.001	0.027
Zinc	mg/L	0.008	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Magnesium, Mg	mg/L	46	134	328	1,800	73	76	12	43
Silicon	mg/L	27.9	26.7	27.5	32.30	26.8	23.80	11.5	24.10
Sulphate, SO ₄	mg/L	114	419	652	202	226	218	15	102
Sodium, Na	mg/L	257	1,320	1,450	1,870	480	498	95	260
Potassium, K	mg/L	7	22	32	57	20	20	7	12
Mercury	mg/L	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Free Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Fluoride	mg/L	0.2	0.6	0.6	0.20	0.6	0.70	0.4	0.60
Nitrate as N	mg/L	11.7	9.4	10.4	13.80	17.2	11.40	0.43	13.30
Total Nitrogen	mg/L	13.1	12.4	11.1	14.30	19.3	12.70	0.9	14.80



Bore ID		95TWRC4	NMB1	NMB2	SMB1	SMB2	SMB3	Bunker Bore	Rebel Bore
Analyte	Unit								
Total Phosphorus	mg/L	0.10	0.04	0.03	0.02	0.03	0.02	0.02	0.59
Total Recoverable Hydrocarbons	µg/L	<100	<100	<100	<100	µg/L	<100	<100	<100

13.2.4 Hydrology

The Youanmi mine site is located within the broader Reaside-Ponton catchment (DWER 2025), which forms part of an extensive regional drainage system. Within that drainage system, the Lake Noondie catchment is extensive. The mine site is located towards the top of the Lake Noondie catchment with drainage from the site reporting to a tributary of one of the main Lake Noondie drainage lines. The drainage path from the mine site to Lake Noondie is approximately 28 km (Figure 46: Regional Hydrology (AQ2 2025a)).

The existing pit areas (other than Bunker Pit) are located along a localised ridge line with runoff from the ridge line flowing to the east or west. The ridge line acts as a catchment divide to two localised surface water catchments, which convey water through the Project area, which are referred to as Catchment A and B for this report. Catchment A and B converge immediately downstream of the mining area with any drainage flow continuing from the convergence point to Lake Noondie (Figure 47: Local Hydrology (AQ2 2025a)).

Catchment A, located to the west of the ridge commands a catchment area of 37 km² to the point where it converges with Catchment B. Catchment A contains a defined creek line (named Western Creek for this report) with a sandy/gravelly base and hosts the historic water supply bores for the Youanmi townsite.

Catchment B has an area of 70 km² and is located on the eastern side of the ridge. In the upper parts of the catchment defined creek channels are apparent, however the main drainage path within this catchment adjacent to the Project (Eastern Creek) is poorly defined. Flow is likely to be characterised by a broad area of concentrated shallow sheet-flow.

The Processing Plant is located within Catchment A and there is potential it could be impacted by flooding from Western Creek. The TSF and the Evaporation Pond Expansion (EPE) are located in Catchment B and potentially could be impacted by flooding of Eastern Creek.

A surface water assessment was completed to identify management measures which may be required to reduce the impact of flooding on the operation of the Youanmi mine site. Additionally, consideration of any surface water management measures required to reduce the environmental impact of the project have also been considered.

A 2D hydraulic flood model was developed in HEC-RAS to assess surface water risks to the mine site and to identify the requirements for the site surface water management strategy. The flood model simulated rainfall-runoff processes to understand the potential distribution of flood waters across the site.

RORB hydrology models were created for Catchment A and Catchment B to simulate flow hydrographs for Western Creek and Eastern Creek respectively. The models were used to develop flow hydrographs for different exceedance probability events (1% AEP and PMF events). Results from this model informed Rox Resources' assessment of suitable locations for the proposed mine site infrastructure.

The resulting peak flows from the RORB model are shown in Table 28, The estimated PMP rainfall depths are shown in Table 29, and the resulting PMF peak flow rate estimates from Catchment A and B are summarised in Table 30.

Table 32. Project Catchment Peak Flow Rates

Catchment (Figure 47)	Area (km ²)	RORB 1% AEP Peak Flow (m ³ /s)
1 - Western	37	51
2 - Eastern	70	113

Table 33. PMP Rainfall Depth Estimation (110km² Catchment)

3-hour (mm)	4-hour (mm)	5-hour (mm)
440	510	540

Table 34. PMF Peak Runoff Rates

Catchment A (m ³ /s)	Catchment B (m ³ /s)
1,070	2,100

The predicted 1% AEP maximum flood depths and velocities from the flood model prior to further development of the Project are provided in Appendix 3, AQ2 (2025a). Youanmi DFS Water Studies. Key observations from the flood maps are as follows:

- The TSF is located on a local drainage line, plus extends into the Eastern Creek floodplain;
- Western Creek is a more defined flow channel than Eastern Creek but still has a broad floodplain extending away from the low flow channel. The flood plain is constrained where the creek passes between Bunker Pit/Bunker Waste dump and the other existing mining areas;
- The extents of the available terrain data for the flood model mean that the extent of flooding within Eastern Creek is constrained by the model boundary;
- Flooding from the Western and Eastern Creek join at the south east corner of the model prior to leaving the model through a boundary condition;
- Limited flood risk to the existing mine development footprint area.

Post-development flood model maps are shown below in Figure 49: Youanmi Gold Mine 1% AEP Flood Depth (AQ2 2025a) and Figure 50: Evaporation Pond Expansion 1% AEP Flood Depth (AQ2 2025b).

Details of the surface water assessments completed identified the following:

- Potential inundation of the Processing Area by flooding from Western Creek. The western side of the Processing Area could be constructed upon a raised earth pad to be out of the predicted Western Creek flood levels, or the Processing Area could be moved to the east (further uphill) out of the flood prone area. Any raised pad installation may require erosion protection along its outer face where it extends into the flood plain;

- The TSF extends within the Eastern Creek floodplain. Minor drainage works could be considered around the northern perimeter of the TSF to assist drainage of local runoff along the north side of the TSF. Erosion protection along the toe of the TSF should consider that flow velocities up to 1.5 m/s may occur through Eastern Creek during a PMF event;
- The hydrological impacts associated with the EPE are predicted to be low, with only minor changes to local flow conditions. The proposed EPE embankments are not predicted to be overtopped during the 1% AEP flood event and operational freeboard within the EPE of 0.5 m should be sufficient to contain a 72-hour 1:1000-year AEP rainfall event.

Further information on surface water risks, controls and management is provided in Section 14: Controls & Management. Also Category specific infrastructure described in Section 2: Processing Plant – Category 5 Section 3: Tailings Storage Facility (TSF) – Category 5, and Section 4: Evaporation Ponds - Category 6.

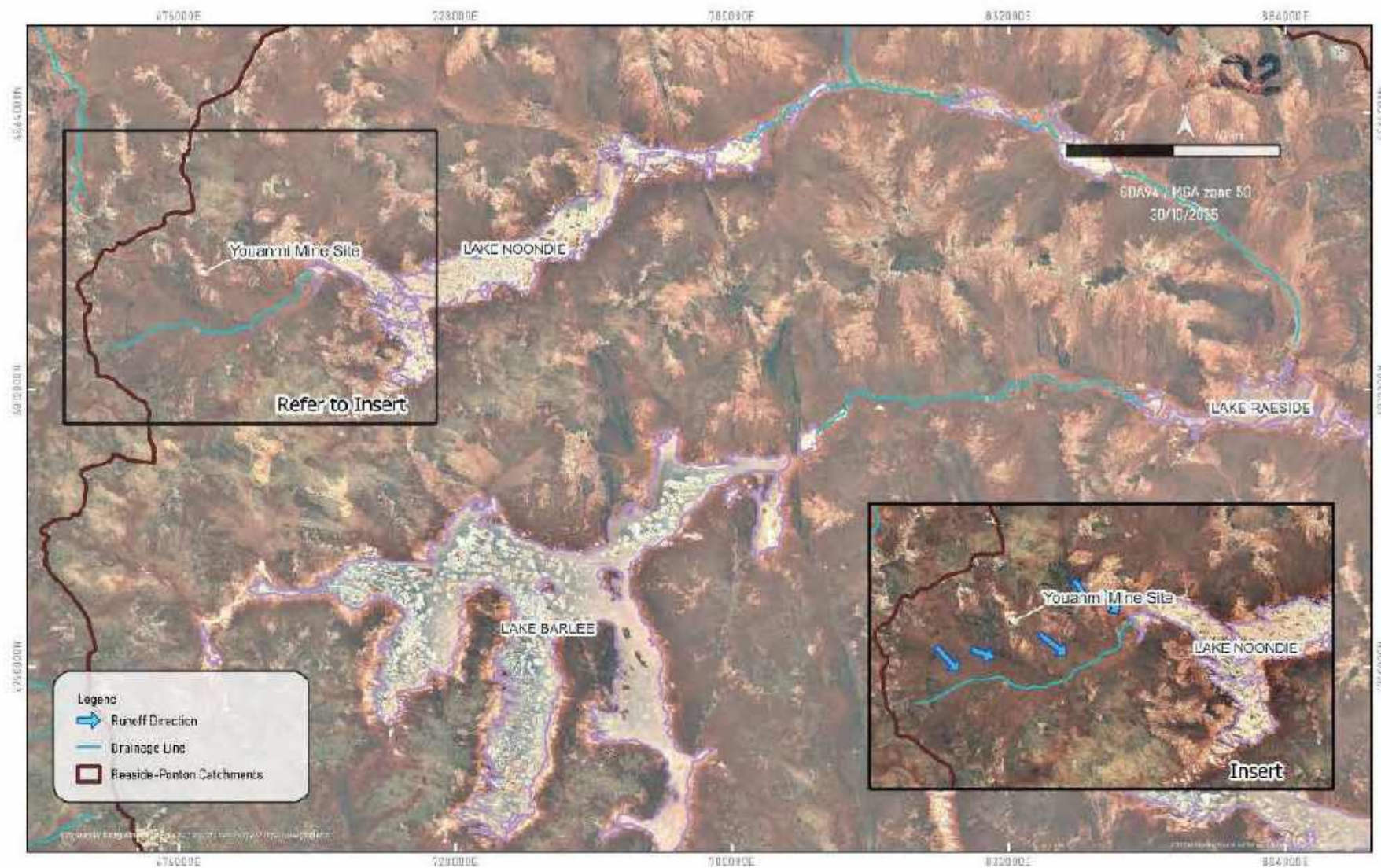


Figure 47: Regional Hydrology (AQ2 2025a)

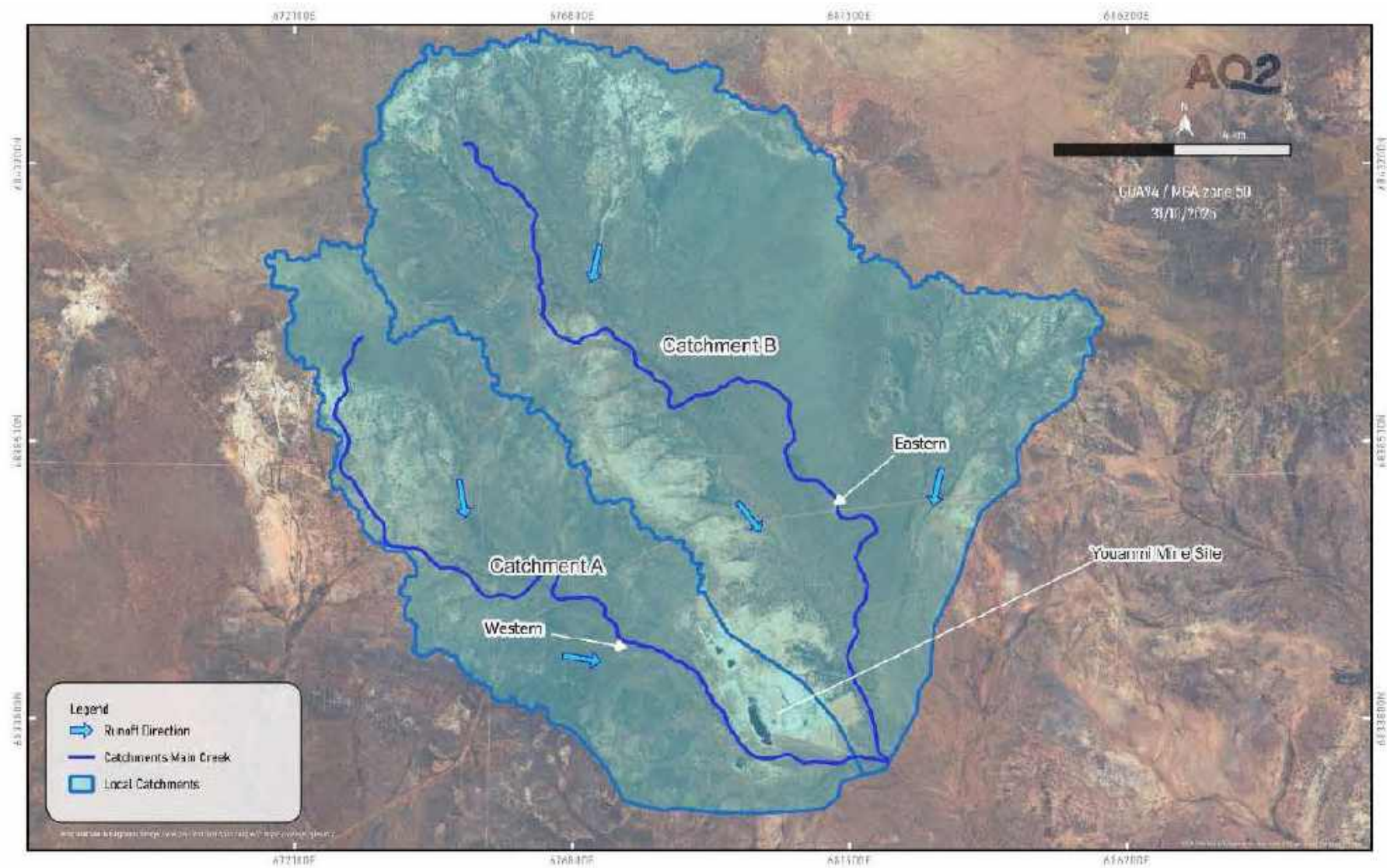


Figure 48: Local Hydrology (AQ2 2025a)

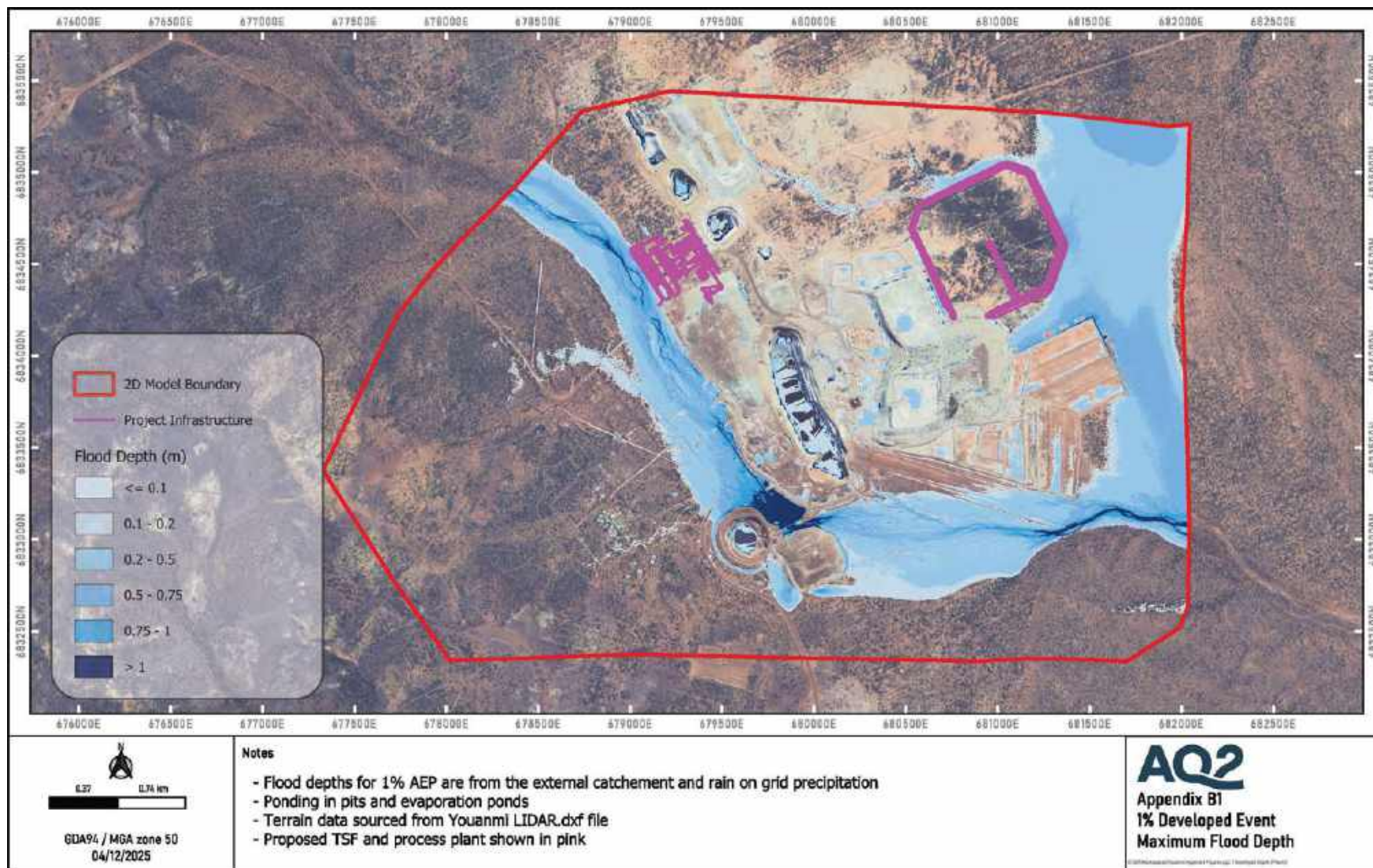


Figure 49: Youanmi Gold Mine 1% AEP Flood Depth (AQ2 2025a)

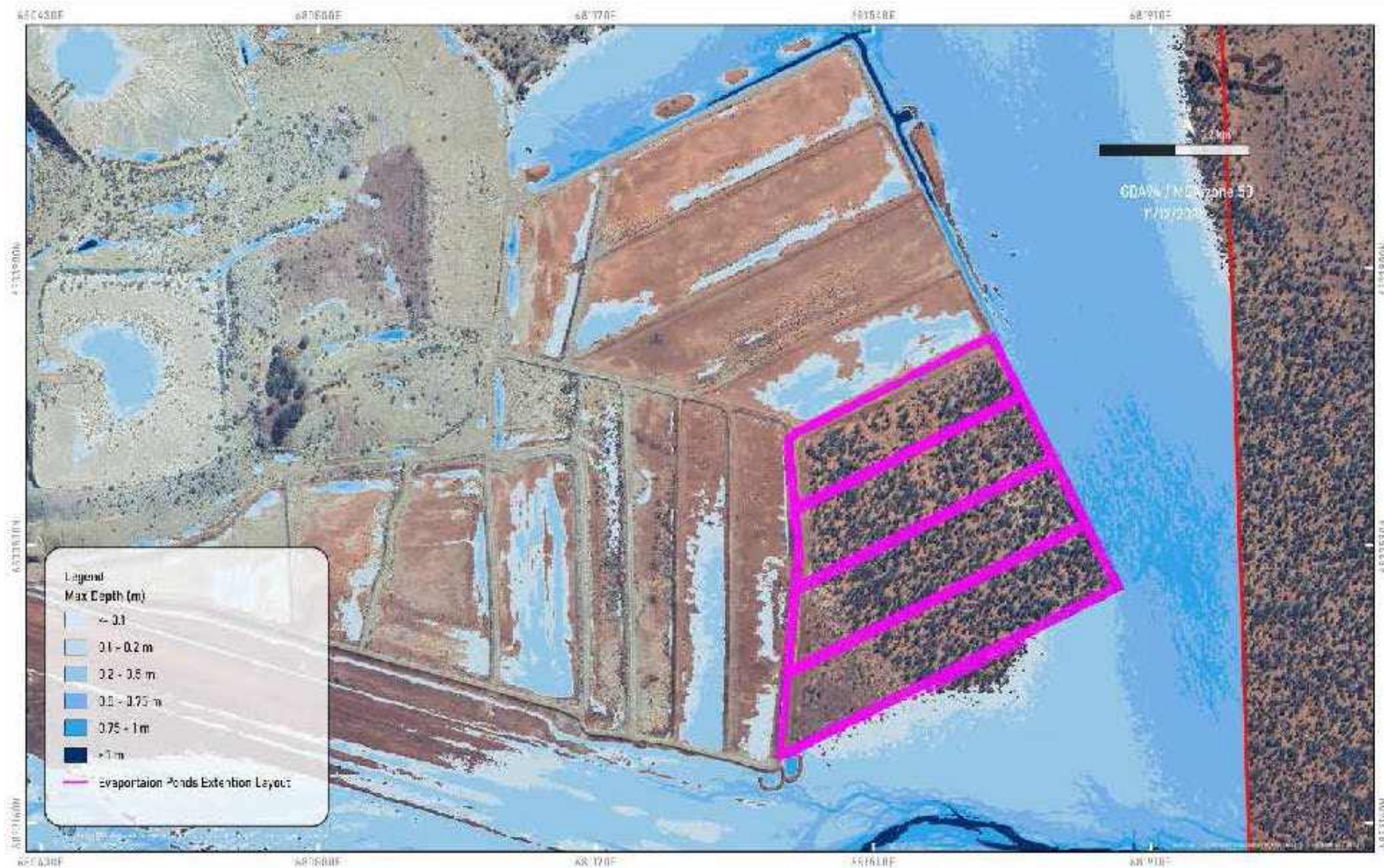


Figure 50: Evaporation Pond Expansion 1% AEP Flood Depth (AQ2 2025b)

13.2.5 Groundwater Dependent Ecosystems

No Groundwater Dependent Ecosystems (GDE's) have been identified within or near the project area (AQ2, 2024). The nearest wetland is an ephemeral salt-lake (Lake Noonie) located 23 km east of the mine site which will not be impacted by the project.

The BOM GDE Atlas shows no aquatic GDEs (i.e., no wetlands of environmental significance) present in the vicinity (10 km radius) of the Youanmi project area (AQ2 (2025a)).

13.3 Biodiversity

13.3.1 Flora

Native Vegetation Solutions (NVS) completed a reconnaissance flora and vegetation survey of the Youanmi Project in 2022, covering an area of approximately 1,751 hectares (NVS 2022). The general vegetation group descriptions within the survey area is described as a Mulga shrubland with emergent Eucalyptus spp, and also a Mulga creek line (NVS 2022).

The field assessment established that the condition of the vegetation in the proposed disturbance area ranged from "Completely Degraded" to "Very Good" with most of the area falling into the "Good" Category. Areas which were affected by historic exploration were deemed in "Degraded" or "Good" condition. No areas of vegetation were assessed to be in "Pristine" condition.

Six weed species was recorded within the survey area, *Nicotiana glauca* (Tree Tobacco) *Citrullus amarus* (Pie Melon), *Lysimachia arvensis* (Pimpernel), *Rumex vesicarius* (Ruby Dock), *Salvia verbenaca* (Wild Sage) and *Sonchus oleraceus* (Common Sowthistle). None of these species are considered Declared Pests (DPIRD, 2022).

No Threatened Flora were recorded in the survey area (DBCA, 2022a). One Priority Flora species was recorded in the survey area, *Calytrix hislopilii* (P3). Six locations with a total population size of 139 plants were recorded around 740 meters North West of the landfill.

No Threatened Ecological Communities (ECs) or Priority Ecological Communities (PECs) were recorded in the survey area. No unique or restricted vegetation communities were identified, and all vegetation types/communities are common, widespread and well represented in the Eastern Murchison subregion.

13.3.2 Fauna

Western Ecological (2022) undertook a single season detailed terrestrial vertebrate survey of the project area and surrounds in October 2022, recording 78 vertebrate species in and around the project area, including 47 bird species, 15 reptiles and 16 mammals (13 native and three introduced).

Twenty-five vertebrate fauna species and one invertebrate species of conservation significance (including Priority species) were identified from database searches of a 100 km radius from the survey area including seven mammals, 17 birds and one reptile). Four of these species are considered possibly or likely to occur in the survey area Table 35. No fauna of conservation significance were recorded in the survey area, however, one opportunistic Malleefowl sighting was recorded 7 km south of the survey area.

Table 35: Conservation significant fauna likely or possibly occurring in the project area.

Common name	Scientific name	EPBC status	WA status	Comments	Likelihood of occurrence
Forked-tailed Swift	<i>Apus pacificus</i>	Mi	Mi	Suitable habitat is present in the study area and the study area is in the species' known distribution	Likely
Hooded Plover	<i>Thinornis cucullatus tregallasi</i>		P4	Limited or no suitable habitat is present in study area but is nearby.	Possible
Malleefowl	<i>Leipoa ocellata</i>	VU	VU	Limited or no suitable habitat is present in study area but is nearby. Recorded approximately 7km south.	Possible
Peregrine Falcon	<i>Falco peregrinus</i>		OS	Limited or no suitable habitat is present in study area but is nearby.	Possible

A desktop assessment was completed by Clarke Lindback and Associates in 2022 (CLA 2022) to determine the potential occurrence of fauna species of conservation significance in the Project area and surrounds, and to address potential impacts on conservation significant fauna.

Searches of the DBCA Threatened/ Priority fauna spatial database (DBCA, 2022), and the EPBC Protected Matters search tool (DAWE, 2022) were done to inform compilation of a list of conservation significant fauna within the Project. The search identified 16 fauna species of conservation significance recorded, or, that could potentially occur with the Project area and 80 km buffer (DBCA 2022, DAWE 2022) (Table 36 & Figure 51). Migratory and marine species were not considered as the Project will not involve disturbance of water bodies

The Project area is located within the medium priority survey area for the Night Parrot (*Pezoporus occidentalis*) and potential range of the Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*). According to DBCA guidance material these are included in Table 36, with an assessment of the potential occurrence/impact of the Project on these species.

It is considered that Malleefowl (*Leipoa ocellata*), Peregrine Falcon (*Falco peregrinus*) and Northern shield-backed trapdoor spider (*Idiosoma clypeatum*) could potentially occur in the Project surrounds.

Table 36. Potential impact on Fauna of Conservation Significance potentially in area

SPECIES	CONSERVATION STATUS		LIKELIHOOD OF OCCURRENCE/POTENTIAL IMPACT
	DCCEEW*	DBCA**	
FAUNA			
<i>Amytornis striatus striatus</i> (Striated Grasswren-sandplain)		P4	This species prefers spinifex habitat with or without low shrubs, on sandy or loamy plains (Johnstone and Storr 2004). This habitat is not located in the Project area, thus, it will not be impacted. Further to this the Project area is outside of its current known distribution (BirdLife International 2022a).
<i>Amytornis textilis textilis</i> (Western Grasswren)		P4	This Grasswren species tended to be associated with bluebush <i>Maireana sedifolia</i> (chenopod shrubland). This habitat is not present in the Project area. Further to this the Project area is outside of its current known distribution which is restricted to the Shark bay region (BirdLife International 2022b). Consequently, there will be no impact to this species as a result of the proposed project.
<i>Apus pacificus</i> (Fork-tailed Swift)	MI	MI	The Fork-tailed Swift does not breed in Australia but is a visitor to all states (Higgins 1999). It is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. They probably roost aerially, but are occasionally observed to land. Given they are almost exclusively aerial they will not be impacted by the proposed project should they occur in the Project area.
<i>Falco peregrinus</i> (Peregrine Falcon)		OS	The Peregrine Falcon is an uncommon but wide-ranging bird across Australia (Barrett <i>et al.</i> 2003). It occurs mainly along rivers and ranges as well as wooded watercourses and lakes and nests primarily on cliffs, granite outcrops and quarries. The Project area is highly disturbed, lacks potential foraging habitat, as a result this species is considered unlikely to occur in the Project area. Given this, the Peregrine Falcon would not be impacted by the proposed Project.
<i>Leipoa ocellata</i> (Malleefowl)	VU	VU	Malleefowl prefer habitat with a dense canopy and an open ground layer in which they can construct their mounds (Benshemesh 2007). The species may occur in areas surrounding the Project, however, no mounds were identified by NVS (2022) during the vegetation survey. There is no suitable habitat in the project area as it is highly disturbed with none to little vegetation cover in the canopy and ground layer. Accordingly, there will be no impact to this species as a result of the proposed project.
<i>Motacilla cinerea</i> (Grey Wagtail)	MI		The Grey Wagtail is a rare visitor with very few records in Australia (Johnstone & Storr 1998, DotE 2015). This species occurs where there is running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields (Morecombe 2004). There are no records of this species in the local

SPECIES	CONSERVATION STATUS		LIKELIHOOD OF OCCURRENCE/POTENTIAL IMPACT
	DCCEEW*	DBCA**	
			area or region and no habitat in the Project area, therefore no impacts to the Grey Wagtail as a result of the proposed project.
<i>Polytelis alexandree</i> (Princess Parrot)	VU	P4	There is one record of this species in the DBCA threatened fauna database from 1915 at Sandstone. The Princess Parrot inhabits sand dunes and sand flats in the arid zone of western and central Australia. It occurs in open savanna woodlands and shrublands that usually consist of scattered stands of <i>Eucalyptus</i> (including <i>E. gongylocarpa</i> , <i>E. chippendalei</i> and mallee species), <i>Casuarina</i> or <i>Allocasuarina</i> trees; and understorey of shrubs such as <i>Acacia</i> (especially <i>A. aneura</i>), <i>Eremophila</i> , <i>Grevillea</i> , <i>Hakea</i> and <i>Senna</i> ; and a ground cover dominated by <i>Triodia</i> species (Garnett & Baker 2021). This habitat is not located in the Project area, thus, this species is considered unlikely to occur.
<i>Pezoporus occidentalis</i> (Night Parrot) *1, ***	EN	CR	This species was present only in the EPBC PMST database (there were no records in the DBCA threatened fauna database), and there are limitations with this PMST as outlined above. Sightings of the Night Parrot in WA comes from the Pilbara (12 April 2005) at a well near the Fortescue Marshes (Davis & Metcalf 2008), and near Matuwa (Lorna Glen), which is about 160 km north-east of Wiluna, in 2009 (Hamilton et al. 2017). There has been a more recent sighting just few years ago south east of Balgo in the Great Sandy Desert, but no exact location has been made public or published. The Night Parrot is a highly elusive nocturnal ground dwelling parrot found in the arid and semi-arid zones of Australia (DoE 2020c). The broad habitat requirements of night parrots include areas of old-growth spinifex (<i>Triodia</i>) for roosting and nesting, together with foraging habitats that are likely to include various native grasses and herbs, and may or may not contain shrubs or low trees (DPaW 2017). These may be in expanses or isolated patches, but sometimes associated with other vegetation types, such as dense chenopod shrubs. As the Project area contains no spinifex and little understorey, this species is considered unlikely to occur.
MAMMALS			
<i>Dasyurus geoffroii</i> (Chuditch) *1	VU		Listed only in EPBC search results – this species is now extinct in the region. The Chuditch previously occurred throughout arid and semi-arid Australia, but is now primarily restricted to the south west of WA, predominantly the Jarrah Forest and nearby areas. Though, there are small, isolated subpopulations that persist in the Avon Wheatbelt, eastern Goldfields Woodlands and Mallee and in Fitzgerald National Park and Ravensthorpe Range (Woinarski et al. 2014).
<i>Dasyercus blythi</i> (Brush-tailed Mulgara)		P4	There is one record of this species in the DBCA threatened fauna database from Lake Mason Station, approximately 100 km to the north east of the Project area. The Brush-tailed Mulgara is associated mostly with hummock (spinifex) grasslands but also uses other vegetation types (often sandplains, grasslands and woodlands) when mixed with or

SPECIES	CONSERVATION STATUS		LIKELIHOOD OF OCCURRENCE/POTENTIAL IMPACT
	DCCEEW*	DBCA**	
			adjacent to hummock grasslands. It is mainly nocturnal and shelters during the day in excavated burrow systems (Woinarski et al. 2014). There is no habitat for this species in the Project area, therefore it is unlikely to occur and there should be no impacts associated with the proposed project.
<i>Macroderma gigas</i> (Ghost Bat)	VU	VU	The Ghost Bat requires undisturbed roost caves or mineshafts in which to shelter during the day. There is one record of this species in the DBCA threatened fauna database from Mt Kenneth. The record is from a cave on west side of Mt Kenneth – 72km southwest of the Project area. No date is provided for the record it is just recorded as historical (written). This species is now restricted to the Pilbara and Kimberley in WA. There is also no suitable habitat in the Project area.
<i>Macrotis lagotis</i> (Bilby)	VU	VU	Throughout most of its range, the Bilby occurs in low densities, shows low site fidelity and can be highly mobile in response to resource availability (Southgate et al. 2007, Woinarski et al. 2014). Bilbies occupy a variety of habitats including Mitchell Grass and stony downs country of cracking clays, desert sandplains and dune fields sometimes containing laterite, hummock grasslands (Spinifex) and massive red earths with Acacia shrubland (Southgate et al. 2007, Van Dyck 2008). They are omnivorous and have a diet consisting of insects and their larvae, seeds, fruit and fungi, the proportions of which can vary depending on location (Southgate & Carthew 2006). Contraction in its geographic range means it is now only found in a few locations in Australian sandy deserts and the Pilbara. There is only one historical record (secondary sign and its certainty is given as moderately certain) in the DBCA threatened fauna database – no date is given. The locality is recorded as Windimurra and the record is about 70 km north west of the Project area. There is no suitable habitat in the Project area and the species is now regionally extinct.
<i>Pseudomys chapmani</i> (Western Pebble-mound Mouse)		P4	There is one record of this species in the DBCA threatened fauna database. The record is from 2012 with the locality given as Ularring, with the site given as BHPBIO mainline and its certainty is recorded as certain, but the observation type is not provided i.e., was it an animal of a pebble-mound. This record could possibly be an error or an historical pebble mound i.e., very old. The Western Pebble-mound Mouse occurs in the Pilbara and nearby rocky areas of the Little Sandy Desert (Woinarski et al. 2014).
<i>Sminthopsis longicaudata</i> (Long-tailed Dunnart)		P4	This species prefers rocky habitats that support low open woodlands or Acacia shrublands with an understorey of Spinifex (Burbidge et al. 2008). Closest records are >100km north of the Project at Lake Mason Station and >100km east of the Project area at Ularring. There is minimal understorey and no rocky habitat in the Project area.
INVERTEBRATES			

SPECIES	CONSERVATION STATUS		LIKELIHOOD OF OCCURRENCE/POTENTIAL IMPACT
	DCCEEW*	DBCA**	
<i>Idiosoma clypeatum</i> (Northern shield-backed trapdoor spider)		P3	This species could potentially occur in the Project area surrounds (undisturbed areas). As it has a known extent of occurrence of over 120,000 km ² , it is not considered to be a short range endemic species by the definition of Harvey (2002) and the small size of the Project is not expected to impact the conservation significance of this species (if it did occur).
<i>Ogyris subterrestris petrina</i> (Arid Bronze Azure Butterfly) ***	CR	CR	The Arid Bronze Azure Butterfly (ABAB) is known from only two existing subpopulations in WA. One occurs at Barbalin Nature Reserve (BNR), and at a second site ~100 km from Barbalin (DBCA 2020). There was a population at Lake Douglas, 12 km south west of Kalgoorlie, however, this population is reported to have become extinct in about 1993 as no ABAB have been recorded there since then (CA 2015, DBCA 2020). The species (and host ant) preferred habitat is woodland with smooth barked eucalypts – the Project area is largely Mulga shrubland. This habitat is not located in the Project area, thus it is highly unlikely to occur.

* – listed under the *Environmental Protection and Biodiversity Conservation Act 1999* – rankings provided in Appendix 1

** - under *Biodiversity Conservation Act 2016* -- rankings provided in Appendix 2

***DBCA search results indicate “the search area is within the potential range of the arid bronze azure butterflies host ant and within the high and medium priority survey areas for night parrots”

*1 – from the EPBC PMST results



Figure 51. Location of DBCA conservation significant fauna records relative to the Project area

13.3.3 Short Range Endemics and Subterranean Fauna

Short-range endemics (SREs) are fauna that have a naturally small range of less than 10,000 km². In addition, these species possess similar ecological traits including poor powers of dispersal, confinement to specialised often discontinuous habitats, slow growth and low fecundity. There are no SREs relevant to the project area.

The presence of subterranean fauna is strongly linked to geology and hydrology, and the availability of suitable micro-habitats (e.g., air-filled voids or caves for troglofauna, or aquifers that are not hypersaline). The main threats include excavation of geologies known to support subterranean fauna, groundwater extraction, dewatering for below water table excavation and groundwater reinjection of waste or excess water (EPA, 2016).

The nearest wetland is an ephemeral Salt Lake (Lake Noondie) located 23 km east of the mine site, which contains a widespread species of aquatic fauna commonly found in salt lakes in Western Australia (Bennelongia, 2021 and 2022). There are also areas of calcrete near the lake that may be a habitat for stygofauna and troglofauna. Lake Noondie will not be impacted by the proposed Youanmi project.

Previous (and existing) disturbance to the area, including extensive dewatering of hypersaline water and ore and waste rock removal from the area suggest the region is unlikely to support subterranean fauna species (Bennelongia 2021 and 2022).

14 EMISSIONS, POTENTIAL IMPACTS & MANAGEMENT

14.1 Emissions and Impacts

The key potential emissions and impacts identified from construction and subsequent operation of the proposed infrastructure in Categories 5, 6, 52, 54 & 64 include:

- Dust:
 - Fugitive dust during vegetation clearing, earthworks and operation of fixed and mobile plant;
 - Wind erosion of open areas or TSF3 impacting vegetation or the community.
- Noise:
 - Operation of fixed and mobile plant impacting fauna or the community;
- Hydrocarbons & Chemicals:
 - Leaks, spills or seepage of hydrocarbons or chemicals from storage, containment infrastructure, operating plant and machinery causing death or decline of local vegetation or fauna and contamination of soils;
 - Transport of leaks, spills or seepage of hydrocarbons or chemicals to the surrounding environment via contaminated stormwater, or into groundwater, impacting vegetation health, and soil, surface water or groundwater quality.
- Tailings & Decant:
 - Leaks, spills or seepage from pipelines or containment infrastructure releasing contaminated water to the surrounding environment - impacting vegetation health, soils and groundwater or surface water quality;
 - Ingestion of decant water containing process chemicals by fauna (ie. birds & bats), causing mortality;
 - Entrapment in tailings mud or containment infrastructure by terrestrial fauna causing mortality;
- Saline Water:
 - Dewatering operations causing negative impacts or changes to local surface water or groundwater regimes;
 - Leaks, spills or seepage from pipelines or containment infrastructure releasing saline or hypersaline water to the surrounding environment - impacting vegetation health, soils and groundwater or surface water quality;
 - Entrapment in containment infrastructure by terrestrial fauna causing mortality;
- WWTP Nutrients & Faecal Matter:
 - Leaks, spills or unmanaged discharge to land causing contamination of soil, surface water or groundwater;
- Gas and Particulates:
 - CO₂ (and CO₂ equivalent), particulates or other greenhouse gasses from internal combustion engines (ICE), gold smelting or carbon regeneration reducing air quality of the local or broader community.
- Stormwater:
 - Erosion of soils from constructed infrastructure or cleared areas causing reduced surface water quality or sedimentation impacts downstream;
 - Stored or spilt saline, process or decant water, hydrocarbons or chemicals becoming entrained in stormwater flows, causing contamination of surface water, soils or groundwater.

- **Putrescible & General Waste:**
 - Windblown waste causing reduced health or death of native fauna;
 - Putrescible waste attracting native or feral fauna, leading to changes in behaviour or increased mortality of natives by feral predation or competition;
 - Leachate causing contamination of surface water or groundwater.

14.2 Risk Assessment

A risk assessment has been conducted for the activities proposed in this Works Approval, to further identify and evaluate the risks associated with the activities proposed during construction and operation. The review identified control measures that will be used to treat risks (using a risk reduction hierarchy) and demonstrate that environmental impacts and risks are reduced to 'As Low as Reasonably Practicable' (ALARP).

Where possible, Rox has avoided or eliminated the risk of environmental harm which may have been caused by Prescribed activities. The risk register is a live document that will be maintained through implementation of the EMS system. Mitigation and management measures will be adapted over time to maintain ALARP risk levels.

The risk assessment has been undertaken in accordance with the DWER (2020) Guideline: Risk assessments, for activities prescribed under Part V, Division 3, Environmental Protection Act 1986. Table 37 shows the Risk Rating Matrix, and Table 38 shows the Risk Criteria descriptions of Consequence and Likelihood.

The Risk Assessment for this works approval is provided in Appendix 11. Risk Assessment Table Section 14.3: Table 39.

Table 37: Risk Rating Matrix (DWER 2020: Guideline – Risk Assessments)

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

Table 38: Risk Criteria (DWER 2020: Guideline – Risk Assessments)

Consequence		
The department will use the following criteria to assess the consequences of a risk event occurring:		
	Environment	Public health ¹ and amenity (such as air and water quality, noise and odour)
Severe	<ul style="list-style-type: none"> Onsite impacts: catastrophic Offsite impacts local scale: high level or above Offsite impacts wider scale: mid level or above Mid to long-term or permanent impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are significantly exceeded 	<ul style="list-style-type: none"> Loss of life Adverse health effects: high level or ongoing medical treatment Specific Consequence Criteria (for public health) are significantly exceeded Local scale impacts: permanent loss of amenity
Major	<ul style="list-style-type: none"> Onsite impacts: high level Offsite impacts local scale: mid level Offsite impacts wider scale: low level Short-term impact to an area of high conservation value or special significance[^] Specific Consequence Criteria (for environment) are exceeded 	<ul style="list-style-type: none"> Adverse health effects: mid level or frequent medical treatment Specific Consequence Criteria (for public health) are exceeded Local scale impacts: high level impact to amenity
Moderate	<ul style="list-style-type: none"> Onsite impacts: mid level Offsite impacts local scale: low level Offsite impacts wider scale: minimal Specific Consequence Criteria (for environment) are at risk of not being met 	<ul style="list-style-type: none"> Adverse health effects: low level or occasional medical treatment Specific Consequence Criteria (for public health) are at risk of not being met Local scale impacts: mid level impact to amenity
Minor	<ul style="list-style-type: none"> Onsite impacts: low level Offsite impacts local scale: minimal Offsite impacts wider scale: not detectable Specific Consequence Criteria (for environment) likely to be met 	<ul style="list-style-type: none"> Specific Consequence Criteria (for public health) are likely to be met Local scale impacts: low level impact to amenity
Slight	<ul style="list-style-type: none"> Onsite impact: minimal Specific Consequence Criteria (for environment) met 	<ul style="list-style-type: none"> Local scale: minimal impacts to amenity Specific Consequence Criteria (for public health) criteria met

Likelihood	
The department will use the following criteria to assess the likelihood of a risk event occurring.	
Almost certain	The risk event is expected to occur in most circumstances
Likely	The risk event will probably occur in most circumstances
Possible	The risk event could occur at some time
Unlikely	The risk event will probably not occur in most circumstances
Rare	The risk event may only occur in exceptional circumstances

14.3 Risk Assessment

Detailed Risk Assessment can be located in Appendix 11: **Prescribed Premises Risk Assessment**

14.4 Controls & Management

14.4.1 Dust

Dust can be generated at all stages of the Project. During construction dust can come from vegetation clearing and topsoil management, materials handling during excavation, transport and deposition of construction materials, and earthworks for installation of infrastructure. During operations, sources of dust can be from fixed plant such as the crusher, conveyors and transfer points, movement of ore and waste and operation of vehicles and machinery on unsealed roads. Dust lift-off from dried tailings can also come from the TSF surface.

Environmental impacts from dust generation include air pollution (particulates) and death or decline of vegetation health due to high levels of dust settling on plant leaves, preventing photosynthesis and respiration.

There are also potential human health impacts from dust, however the nearest permanent resident is approximately 17 km away and considered highly unlikely to be affected by dust from construction or operation of the Project.

Health and Safety risks on site from dust will be managed in accordance with safety requirements regulated by the Department of Local Government, Industry Regulation and Safety (LGIRS). This includes wearing appropriate PPE, monitoring and reporting, plus dust prevention and suppression.

Dust will be managed to minimise impacts on the surrounding environment via the following practices, which will be adopted as needed to ensure that dust generated from construction and operational work is minimised:

- Routine and regular dust suppression using water carts on roads, hardstand areas, ROM and all construction and operational areas, to maintain damp running surfaces that prevent dust lift-off;
- Clearing of vegetation undertaken progressively;
- Stripping and movement of topsoil not undertaken in windy conditions where practical;
- Vehicle speeds and movements to be managed via a Traffic Management Plan which addresses the requirement for dust management;
- Movement of heavy and light vehicles restricted to established roads and speed limits imposed for all vehicles - to reduce dust-generation;
- Water-cannons or sprinklers will be used on stockpiles or other areas not accessible to water carts, to reduce dust generation if required;
- Dust suppression sprays to be installed on all ore transfer points, chutes and conveyors on the crusher, processing plant and materials handling areas;
- Water sprays on crusher conveyors and at transfer points – to reduce dust generation;
- Progressive rehabilitation of waste dumps and other disturbed areas will be carried out to minimise areas that may generate dust in windy conditions; and
- Moisture conditioning of construction materials prevents dust generation.

14.4.2 Noise

Noise will be generated during construction via earthmoving, transport and construction machinery, tools and equipment. During operations noise is generated by operation of the Processing Plant, Crusher, Power Station, vehicles, tools and equipment.

Noise has been previously assessed at the Youanmi Gold Mine as not requiring specific management during project construction, mining or processing operations. This is due to the nearest permanent resident being approximately 17 km away and considered highly unlikely to be affected by noise from the Project. No specific noise-sensitive or conservation significant fauna identified in proximity.

No specific machinery or equipment is required for construction and operation of the Project which will alter this status. Noise will be managed to minimise impacts on the surrounding environment via the following practices:

- Regular maintenance of all vehicles and plant equipment;
- Adherence to the Environmental Protection (Noise) Regulations of 1997.

14.4.3 Gas & Particulates

Gaseous and particulate emissions will be generated during construction and operation of the prescribed premises infrastructure proposed. Internal combustion engines in vehicles and machinery emit various gases, including CO² (and CO² equivalent), oxides of Nitrogen as NO₂, CO (Carbon Monoxide), SO₂ (Sulphur Dioxide), volatile organic compounds (VOCs) and particulates, particularly diesel.

During operations, the Power Station gas and back up diesel turbines will also emit various gases, including CO² (and CO² equivalent), oxides of Nitrogen as NO₂, CO (Carbon Monoxide), SO₂ (Sulphur Dioxide), volatile organic compounds (VOCs) and particulates.

The carbon regeneration process used to re-use barren carbon involves heating the barren carbon in a kiln to remove any impurities. The off-gas from the Carbon Regeneration Kilns may contain volatile organic compounds (VOCs) mercury or other pollutants which are emitted as gases. Similarly, gaseous and particulate emissions may be generated during the gold smelting process. Gold melting furnaces release both gaseous and particulate emissions, with the primary concerns being sulphur dioxide (SO₂), arsenic and other heavy metals.

Receptors include sensitive or conservation significant flora and fauna, staff and residential receptors. Potential impacts include decline in vegetation health, reduced air quality for employees (amenity) in Project area and the community.

Gas and particulate emissions will be managed to minimise impacts on the surrounding environment via the following practices:

- Regular maintenance of all vehicles and plant equipment;
- Minimising use of gas and diesel powered turbines at the Power Station.

14.4.4 Hydrocarbons and Chemicals

Waste oil and hydrocarbon contaminated waste will be generated during construction and operation of the Prescribed Premises proposed, through servicing of vehicles, mobile and fixed plant, and other machinery. Leaks and spills of hydrocarbons or chemicals can occur during refuelling or servicing, or from transport or storage containment.

Hydrocarbon or chemicals can contaminate the soil directly at the spill site, and can also be spread further than the immediate impacted area via surface water contaminated runoff. This can result in soil, groundwater and surface water pollution and vegetation death or reduction in vegetation health downstream.

Rox will implement the following measures to minimise risks of contaminating soils, surface water or groundwater from hydrocarbon or chemical spills:

- Hydrocarbons and chemicals stored in appropriate bunded areas;
- Hazardous chemicals, fuel and other hydrocarbons will be stored in accordance with Australian Standards;
- Waste oils are stored in bunded containment and oily rags, filters, hoses and other materials contaminated by hydrocarbons are stored in dedicated bins. Hydrocarbon waste is removed from site by a licensed contractor;
- Generators at the power station contained within bunded, impermeable compounds, and portable generators 'self bunded';
- Plant, vehicles, machinery and equipment regularly serviced and maintained, within designated workshop areas where possible;
- Washdown water from hardstand areas is directed to an oil water separator for treatment, and sludge from the washdown pad removed to bioremediation area;
- Personnel handling hazardous materials to be made aware of the MSDS guidance, and trained in spill response of that material prior to commencing work,
- Spill management equipment appropriate to the volume and type of material stored will be available at the storage location, clearly labelled and highly visible at all times;
- All spills are contained, controlled and cleaned up immediately;
- Contaminated soil resulting from spills and / or runoff will be removed for treatment at bioremediation pads constructed on site, treated in situ if appropriate, or removed from site and disposed to a licensed facility;
- Bunding and surface water management structures in place to ensure containment of potentially contaminated runoff;
- All staff and contractors adhere to Hydrocarbon and Chemical Procedures;
- Regular inspections of workshops and fuel / chemical storage area are completed by contractors and Rox staff.

14.4.5 Tailings and Decant

The tailings waste stream comprises saline water (from dewatering) used in the plant plus cyanide, reagents and process chemicals, and is anticipated to comprise the following:

- A silicate rich fraction from the sulphide flotation underflow, confirmed as Non-Acid Forming (NAF) (JT Met 2024) due to both low sulphide sulphur content and residual lime from the cyanidation process; and
- A fraction that is rich in post-neutral Albion oxidation leach products which are predominantly gypsum, goethite and hydrated silicates. Also potentially some sulphide sulphur content due to incomplete sulphide oxidation, however also likely to be NAF if there is sufficient residual lime from the cyanidation process. This fraction may also contain elevated arsenic, antimony, copper and zinc due to arsenopyrite and other sulphides in the ore such as stibnite, chalcopyrite and sphalerite (EGI 2025).

Tailings water is potentially harmful to native fauna if contacted or ingested, in particular birds and bats due to the cyanide, reagents or other chemicals, heavy metals or acid content. These risks are mitigated by the saline and potentially hypersaline water to be used for processing. Adams et al (2013) found that at salinity of 50,000 mg/L TDS or above (hypersaline), water is

unpalatable to all vertebrate fauna and they will avoid it. Saline water (14,000 – 50,000 mg/L TDS) is unpalatable to all Australian livestock, but palatable to some native fauna.

Leaks or spills of tailings from the plant or delivery pipelines could lead to soil contamination or direct mortality or decline of vegetation due to sedimentation, toxic levels of salinity or entrained chemicals or metals.

Seepage of tailings water to groundwater has the potential to contaminate the aquifer with elevated salinity, heavy metals and other deleterious chemicals. This can have negative impacts on groundwater dependent vegetation, subterranean fauna or other beneficial users of the groundwater.

Seepage can also contribute to mounding or raised groundwater levels in the TSF vicinity. This can also cause decline or mortality of vegetation through saturation of root zones, or due to toxic levels of salinity, metals or chemicals entrained in seepage water.

To manage tailings effectively and safely, and to minimise and manage seepage from TSF3, the following measures will be implemented:

- TSF3 design conforms to Code of Practice – Tailings Storage Facilities in Western Australia (DMP 2013); and ANCOLD Guidelines on Tailings Dams – Planning, Design, Construction, Operation and Closure (Revision 1, 2019);
- TSF3 constructed in accordance with design specifications by competent, qualified professionals using appropriate equipment with material of correct specifications;
- TSF3 construction supervised and signed off by competent, qualified professionals;
- Open trenching and excavations (during construction) to have egress ramps at regular intervals, inspected daily and backfilled asap;
- Fauna egress matting in all lined ponds and excavations;
- Fences and / or physical barriers to block access to confined spaces – lids or mesh screens on tanks and drums, gates, doors etc;
- Routine monitoring of WAD cyanide in process water and tailings decant water;
- Weekly / monthly management inspections, record keeping and emergency actions;
- Supernatant pond size minimised and maintained >100m from embankment;
- All tailings, process water and decant return pipelines are bunded to contain spills, with scour pits or sumps along the length of the above-ground pipelines corridors to ensure leaks or spillages are contained within bunded areas;
- Pipelines installed with electromagnetic flow meters and pressure sensors downstream of pump station and upstream of TSF discharge, to provide constant monitoring of the tailings pipeline, and shutdown in the event of pipeline failure;
- Supernatant water collected from TSF surface via a central rock-ring decant system, to minimise tailings water percolating through the TSF, maximise settled density of tailings and efficiently manage supernatant water for re-use in the plant;
- Seepage interception cut-off trench and collection drain installed beneath TSF3, to capture seepage water and direct to external collection sumps and back to process-water ponds for re-use;
- Supernatant pond size minimised and maintained >100m from embankment;
- TSF operated with designed freeboard of 0.5m with continuous, in situ telemetry monitoring of pond level;

- Tailings, decant and seepage management are guided by a TSF Manual), prepared prior operation of TSF3, in accordance with DMPE guideline. The OMPS covers essential duties and tasks, including:
 - Tailings deposition methodology;
 - Decant operation;
 - Routine daily inspections of tailings lines, decant systems and water return, freeboard, process water pond, embankments etc, including timing, criteria, records & reporting;
 - Inspections include fauna present, mortality and fauna specific actions;
 - Weekly / monthly management inspections;
 - Monitoring and maintenance;
 - Record keeping; and
 - Emergency actions.
- Instrumentation and monitoring program to track phreatic surface, groundwater levels, and quality to identify issues and apply timely remedial actions as required; and
- Annual geotechnical audits conducted for TSF3 throughout operations.

14.4.6 Saline Water

Groundwater at the Project is generally brackish to weakly saline at shallow depths, increasing to hypersaline at depth in the underground workings, particularly in Youanmi Deeps (AQ2 2025a). Salinity of a sample in April 2025 from the dewatering discharge point was 50,000 mg/L TDS (hypersaline), which is likely to increase as dewatering continues. Dewater will be the primary supply for the Processing Plant, also dust suppression around site. Surplus is discharged to the evaporation ponds, Kathleen & Rebel pits.

Lined ponds and dams can pose an entrapment risk to terrestrial fauna, and if unable to escape will die. The physical properties of clay and natural earth lining (fine grained & sticky) of the evaporation ponds also present entrapment risk to terrestrial fauna, becoming stuck in the mud leading to death. However, this is mitigated by the properties of saline water, as it becomes less palatable >14,000 mg/L TDS and unpalatable >50,000 mg/L TDS (Adams et al 2013). Terrestrial fauna will be less inclined to enter a storage or transfer pond, or evaporation ponds to get to water.

Leaks or spills of saline water can potentially occur during all stages of the project, due to failure of pipelines, inadequate storage facilities or operational incidents. Potential impacts include increase in soil and surface water salinity (contamination) leading to vegetation death or reduction in vegetation health in the immediate vicinity.

Overtopping of dewater or tailing storage containment can potentially lead to high volumes of saline water discharge to the environment and flowing downstream or migrating with surface water flow. This can lead to vegetation death or decline and soil contamination over a larger area, potentially outside of the Prescribed Premises boundary.

Seepage of saline water can also contribute to mounding or raised groundwater levels adjacent the evaporation ponds and TSF3. This can cause decline or mortality of vegetation through saturation of root zones, or due to toxic levels of salinity entrained in seepage water.

Over-spray during dust suppression onto adjacent vegetation can lead to soil contamination and vegetation death or decline in the immediate vicinity. Overwatering roads can cause salt levels to build up and potentially washed downstream by surface water flows, contaminating soil and

impacting vegetation health. Salt from spills can also be transported by surface water and impact downstream environment.

The proposed tailings and saline water management methods and controls include:

- Containment infrastructure designed by a suitably qualified engineers and constructed in accordance with approved designs;
- Suitable qualifications of pipeline construction crews, and quality control during construction (e.g., weld inspections / records);
- Dewatering and water supply pipelines located on disturbed areas surrounded by existing mine disturbance (as far as possible) to reduce impact of leaks or spills;
- Open trenching and excavations (during construction) to have egress ramps at regular intervals, inspected daily and backfilled asap;
- Process water dam constructed with an HDPE liner of permeability $<1 \times 10^{-8} \text{m/s}$;
- Fauna egress matting in all lined ponds;
- Water sensors installed at process water pond for constant monitoring of water level, with high level alarms and management alerts to maintain safe operating freeboard;
- Evaporation ponds fitted with visual level markers, also an electronic system with high level alarms and alerts to monitor and manage freeboard levels in evaporation ponds to prevent overtopping;
- Seepage interception trench and collection drain installed downstream of evaporation ponds and TSF3 to capture saline seepage water and direct to collection sumps and return to ponds or plant;
- Pipelines containing saline water fully banded to contain potential leak or spills;
- Pipelines installed with electromagnetic flow meters, pressure sensors and / or telemetric systems for constant monitoring and shutdown in the event of failure;
- Secondary containment sumps sized to contain the maximum volume of water able to be pumped between a leak occurring, detection and pump cut-out (redundancy time);
- Leaks or spills to be controlled and contained immediately on detection, followed by clean up and remediation of impacted area as soon as possible;
- Inductions and training of all staff and contractors involved in dust suppression, dewatering, tailings & process water operations, storage and management;
- Pipelines and storage infrastructure inspected daily during operation – to ensure correct freeboard levels, and leaks or spills are identified and reported immediately (internally) and to DWER in accordance with licence conditions and S72 of EP Act;
- Dust suppression preferentially using dribble-bars to prevent overspray, and actively managed to minimise over-watering and salt build-up on roads and hardstand areas;
- Daily, weekly & monthly management inspections, record keeping and emergency actions as required;
- Inspections include fauna present, mortality and fauna specific actions; and
- Groundwater, surface water and vegetation monitoring programs.

14.4.7 WWTP

The WWTP will be actively managed by the village operator to ensure the system is working effectively and efficiently, and that the required effluent quality is achieved. The system requires appropriate fine-tuning and adjustments to meet site conditions, which will be done in accordance with the manufacturers specifications and guidance.

Visual inspections of the WWTP and spray-field will be undertaken daily, to ensure all components of the system are operating as designed. Treated effluent throughput and quality is recorded continually by the system, which is monitored continuously by the operator. High & low level quality and volume alerts and alarms are also incorporated in the system, to trigger remedial actions as required.

Treated effluent samples will be taken monthly for laboratory analysis. Results will be reviewed immediately on receipt, and any negative trends or compliance items investigated and addressed. All monitoring results will be reported in the Annual Environmental Report (AER).

14.4.8 Stormwater

Uncontrolled surface water runoff from the Process Plant, TSF3 and surrounding operational areas has potential to carry contaminants into the surrounding environment. Contaminants could include heavy metals, chemicals or hydrocarbons in tailings or seepage water, saline process water or from spills. This can lead to pollution of surface water or groundwater resources, soils or direct mortality of vegetation via contaminants and negatively impact downstream environmental values.

Constructed infrastructure such as the TSF can interfere with natural volumes and direction of surface water flows. This can contribute to focusing flows or 'shadowing' effects immediately downstream, affecting sediment erosion or deposition, or vegetation health. Reduced water flows from shadowing can lead to increased mortality and/or ecological changes downstream.

Stormwater can carry increased sediment loads from erosion of open areas, roads and hardstands, constructed infrastructure such as the TFS or evaporation pond embankments, tailings within the TSF, stored topsoil or other stockpiles. Higher levels of entrained sediment in runoff can be deposited downstream and accumulate in lower lying areas. This can potentially result in direct mortality of vegetation or prevention of recruitment, also pollution of surface water.

Environmental risks posed by stormwater are mitigated and managed by the following:

- Locate infrastructure to avoid or minimise disturbance to surface water flows;
- Containment dams or ponds designed to contain a minimum of all direct rainfall from a 1/100 year ARI flood event level, and maintain sufficient freeboard to comply with regulatory levels;
- Diversion drains and bunding installed to prevent stormwater entering infrastructure areas and carrying saline water, process chemicals, hydrocarbons or sediment-laden contamination downstream;
- Diversion drain constructed around the northern and eastern boundary of TSF3, to assist ensuring positive drainage of the Eastern Creek floodplain occurs, prevent stormwater entering the facility, and reduce erosion risk at the TSF toe;
- TSF3 and evaporation pond embankments designed with sufficient factors of safety to manage risk of catastrophic failure due to seismic, erosion or other events;
- Direct rainfall onto TSF3 collected and managed via decant return system;
- Rainfall to the processing plant retained in collection in sumps and utilised in the plant;
- Hydrocarbons and chemicals stored appropriately in bunded containment, and spills addressed immediately,

- Culverts installed at road embankments and infrastructure areas where necessary to provide continuity of surface water flows;
- Surface water monitoring program of sampling points in Western and Eastern Creeks - upstream, in close proximity and downstream of Project development areas.

14.4.9 Putrescible & General Waste

The existing landfill at the mine site is situated within the United North waste rock dump and licensed via L8275/2008 as a Category 63: Class 1 inert landfill site. The assessed design capacity is 5,000 tonnes per annual period and the site is authorised to accept clean fill, Inert Waste Type 1, Uncontaminated fill, and Inert Waste Type 2 - tyres, rubber and plastics.

Putrescible waste of <20 tonnes per annual period has also been disposed to the landfill in separate trenches. Development of the project will increase generation of putrescible waste, which has triggered the proposed change of classification to Class II, Category 64: Putrescible Landfill. All putrescible waste that cannot be reused or recycled will be disposed to the landfill.

No changes are proposed to the existing management of the landfill, which includes:

- Inert and putrescible waste disposed into trenches, excavated within the United North WRD footprint. This waste dump is located over 100m away from any surface water feature and greater than 3m above the groundwater table;
- Putrescible waste disposed of at the Landfill is kept separate from the inert wastes;
- The tipping area of the landfill not greater than 30 m width and 3m in depth;
- The landfill is covered on a monthly basis with inert material that is readily available with the waste rock dump footprint;
- Existing fencing surrounds the landfill facility which is designed to capture windblown waste (should it occur) and to prevent scavenging animals from entering;
- Stormwater is diverted from the landfill trenches to prevent contact with waste;
- Regular inspections of landfill, including collection of windblown waste if observed;
- Records kept of the type and volume of waste disposed in the landfill, to track cumulative waste volume for compliance reporting; and
- No unauthorised waste is disposed of in the land fill.

14.5 Monitoring

14.5.1 Vegetation

Quarterly vegetation monitoring will be conducted as per licence conditions, with more locations added on completion of construction activities. The final vegetation monitoring point locations will be provided with the Licence Amendment Application for operation of prescribed infrastructure.

14.5.2 Groundwater

Ten new groundwater monitoring bores are proposed to be installed at the Youanmi mine site, to complement the existing monitoring network and program. The new bores will assist in monitoring of potential impacts from dewatering and discharge to existing points and the expanded evaporation ponds, seepage from TSF3 and evaporation ponds and water supply pumping.

Monitoring bores are shown below in Table 40: Monitoring Bore - Locations and Figure 52: Proposed Monitoring Bore Layout (AQ2 2025a). Note that the bore locations shown in Figure 52 are indicative only, with final locations to be confirmed in the amendment application (L8275/2008/2) following installation. Two of the bores have already been installed (TSF-BH-01 and TSF-BH-03), with accurate co-ordinates provided in Table 40, and locations shown in Figure 13: TSF3 – Monitoring Instrumentation Detail (TailCon 2025a).

Monitoring (and production) bores will be drilled using mud rotary techniques to provide hole stability during drilling and casing. Installation will be at approximately 20-40m depth, to be determined by the supervising hydrogeologist during installation. The new monitoring bores will be constructed with PVC casing, slotted at selected depths and with their annulus gravel packed, as shown in Figure 53: Proposed Monitoring Bore Design (AQ2 2025a).

Rox proposes the monitoring schedule for the groundwater bores to be the same as that currently included in L8275, summarised below in Table 41.



Figure 52: Proposed Monitoring Bore Layout (AQ2 2025a)

Table 39: Monitoring Bore - Locations

Monitoring Bore ID	Status	GDA194 MGA Zone 50) coordinates (m)	
		Easting (mE)	Northing (mN)
MB04	Proposed	680756	6833191
MB05	Proposed	680152	6834183
MB06	Proposed	678918	6835421
SMB4	Proposed	681785	6833342
SMB5	Proposed	681876	6833631
SMB6	Proposed	681669	6834400
SMB7	Proposed	681996	6833177
TSF MB 01	Proposed	681027	6835109
TSF MB 02	Proposed	681348	6834802
TSF MB 03	Proposed	681068	6834203

Table 40: Monitoring Bore – Parameters and Limits

Monitoring Points	Parameters	Limits	Units	Frequency
Existing (licensed) bores; and Proposed bores.	*Standing Water Level (SWL)	>4 m (bgl)	mAHD	Quarterly
	pH	≥6.0 ≤9.0	-	
	EC	-	mS/cm	
	Total Dissolved Solids (TDS)	-	mg/L	
	Total Suspended Solids (TSS)	-		
	Total Titratable Acidity	-		
	Total Alkalinity	-		
	Weak Acid Dissociable (WAD) Cyanide (CN)	0.5		

Monitoring Points	Parameters	Limits	Units	Frequency
	Copper (Cu)			
	Arsenic (As)			
	Zinc (Zn)			
	Iron (Fe)			
	Mercury (Hg)			
	Cyanide (CN)			
	Cadmium (Cd)			
	Chromium (Cr)			
	Selenium (Se)			
	Chromite (Chr)			
	Aluminium (Al)			
	Manganese (Mn)			
	Nitrate (NO ₃)			
	Phosphate (PO ₄)			
	Lead (Pb)			
	Selenium (Se)			
	Nickel (Ni)			
	Silicon (Si)			
	Cobalt (Co)			
	Magnesium (Mg)			
	Sodium (Na)			
	Total Nitrogen (TN)			
	Calcium carbonate (CaCO ₃)			
	Lithium (Li)			
	Caesium (Cs ₂ CO ₃)			
	Rubidium (Rb)			
	Uranium (U)			
	Thorium (Th)			
	Fluoride (F)			
	Thallium (Tl)			
	Chloride (Cl)			
	Sulphate (SO ₄)			
	Total Phosphorus (P)			
	Potassium (K)			
	Total recoverable hydrocarbons			

* Standing water level shall be determined prior to collection of water quality samples

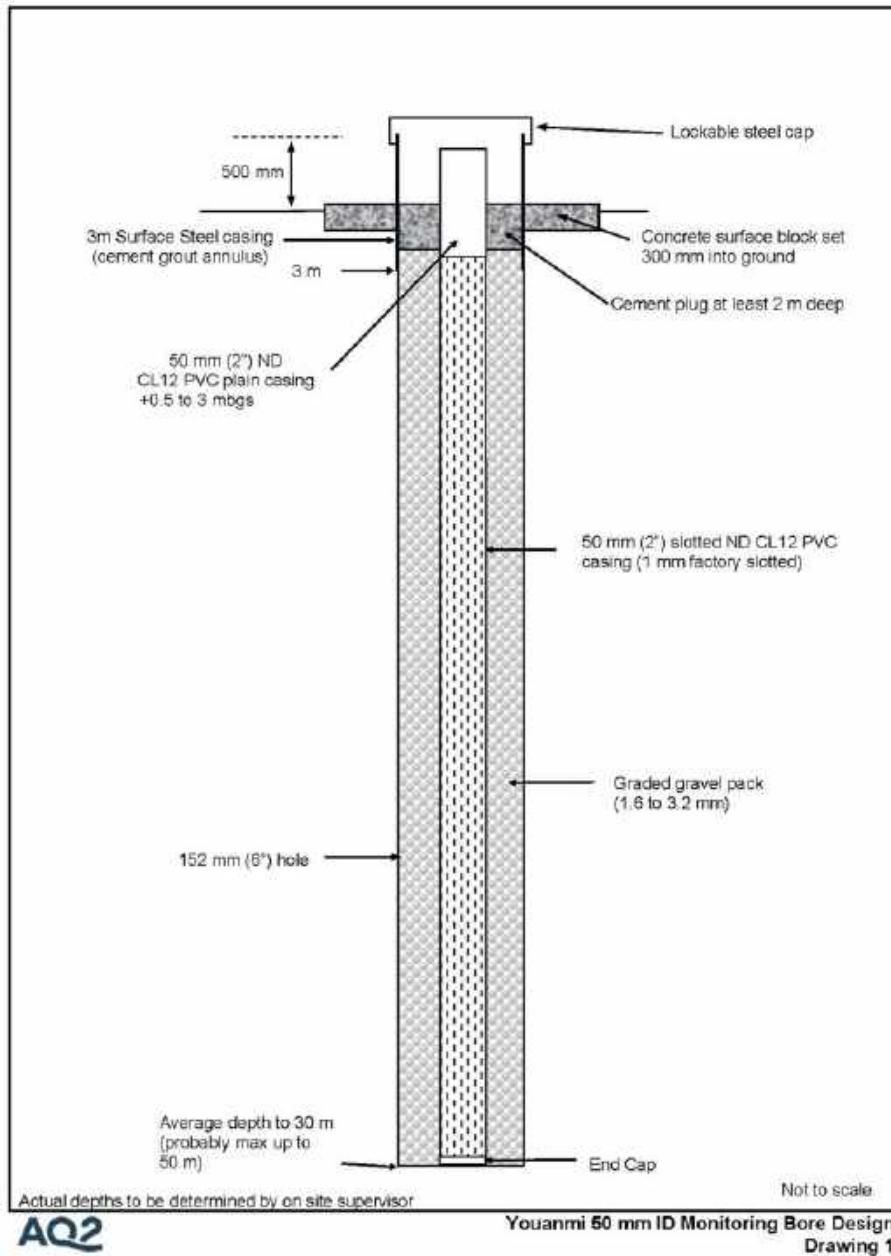


Figure 53: Proposed Monitoring Bore Design (AQ2 2025a)

15 WORKS APPROVAL FEES

Schedule 3 of the EP Regulations (1987) outlines the calculation of the Works Approval fee payable. This is based on the cost of works multiplied by a specified number of fee units, which are adjusted periodically to keep up with inflation. Currently, a single fee unit is priced at \$43.45 (DWER 2025).

The cost of works for the infrastructure proposed in this application is estimated at \$250 Million. This falls into the highest cost of works fee category (>\$100 Million), attracting 1,405 fee units for a total fee of \$61,117.50. A breakdown of the various costs applicable to this calculation is provided in Table 42 below.

Table 41. Works Approval Fees

Activity	Fee Component	Cost (\$M)	Number of Fee Units	Cost per Fee Unit (\$)	Calculated Fee (\$)
Cat. 5: Processing Plant & TSF3	Process Plant	203.0	1,405	\$43.45	\$61,117.50
	TSF3	12			
	Total	215			
Cat. 6: Evaporation Ponds	Total	2.5			
Cat. 52: Power Plant	Total	25.0			
Cat. 54: Sewage facility (WWTP)	Total	2.0			
Cat. 64: Class II Putrescible Landfill	Total	0.2			
Total Cost, fee units and fee		246.7 M	1,405	\$43.45	\$61,117.50

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17 APPENDICES

17.1 Appendix 1. MACA (2025). Youanmi Process Plant Design Report

17.2 Appendix 2. Tailcon (2025a). TSF3 Detailed Design Report

17.3 Appendix 3. AQ2 (2025a). Youanmi DFS Water Studies

17.4 Appendix 4. JT Met (2024). Geochemical analysis of tailings

17.5 Appendix 5. EGI (2026). Youanmi Tailings Geochemical Assessment

17.6 Appendix 6. Gas & Diesel Engine Emissions Data References

17.7 Appendix 7. TailCon (2025b). Evaporation Pond Extension Design Report

17.8 Appendix 8. AQ2 (2025b). Evaporation Pond Expansion Hydrological Impact Assessment

17.9 Appendix 9. RWTS (2025a). WWTP Design Drawings

17.10 Appendix 10. RWTS (2025b). Youanmi Village Sewage Treatment System Design Information

17.11 Appendix 11. Risk Assessment Table