Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L9420/2023/1
Licence holder	Calidus Resources Limited
ACN	006 640 553
Registered business address	Suite 12, 11 Ventnor Avenue WEST PERTH WA 6005
DWER file number	DER2023/000643
Duration	16/08/2024 to 15/08/2027
Date of issue	16/08/2024
Premises details	Warrawoona Gold Project MARBLE BAR WA 6760 G45/345, G45/347, L45/523, L45/649, M45/668, M45/547, M45/552, M45/669, M45/670, M45/671, M45/682, and M45/240 As defined by the map in Schedule 1

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore.	2.5 million tonnes per annual period
Category 12: Screening etc. of material.	300,000 tonnes per annum
Category 64: Class II or III putrescible landfill site.	3,000 tonnes per annum
Category 85: Sewage facility.	50 cubic metres per day

This licence is granted to the licence holder, subject to the attached conditions, on 16 August 2024, by:

Lauren Edmands
Digitally signed by Lauren Edmands
Date: 2024.08.16 07:28:11 +08'00'

Lauren Edmands
A/SENIOR MANAGER, RESOURCE INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
16/08/2024	L9420/2023/1	Licence granted.

Interpretation

In this licence:

(a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this licence:

(e) if dated, refers to that particular version; and

(f) if not dated, refers to the latest version and therefore may be subject to change over time;

(g) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(h) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

Infrastructure and equipment

Construction requirements

1. The licence holder must:

(a) construct and/or install the infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements;

(c) at the corresponding infrastructure location; and

(d) within the corresponding timeframe,

as set out in Table 1.

Table 1: Design and construction / installation requirements

Site infrastructure and equipment	Design and construction / installation requirements	Infrastructure location
TSF Stage 2 general details	Down valley thickened tailings distribution TSF: • Tailings thickened to >60% w/w solids; • 17 Mt storage capacity; • Single cross-valley earthfill embankment will provide containment at the north western end of the tailings storage area; • Containment around the remaining perimeter will be provided by the natural topography with two small containment bunds; • Stage 2A - RL 265.5 m (2m raise) • Stage 2B - RL 267.3 m (2m raise); and • Stage 2 will include an emergency spillway (in an area where the natural topography provides a suitable spillway location) constructed in competent natural ground.	Schedule 1: Maps, Figure 2, Figure 3 and Figure 5
TSF Stage 2 permeability demonstrated with testing performed across the areas	• Low permeability (between 0.8x 10^{-8} m/s and 2.6 x 10^{-8} m/s) foundation prepared by moisture conditioning and compacting Zone 1 filled cut off trench and upstream low permeability zone; • Compacted Zone 1 material to be placed against the abutments for a distance of approximately 100m from the ends of the embankment to reduce the potential for lateral seepage; • Upstream blanket of compacted low permeability material of minimum 300mm thickness to be provided on the impoundment floor to approximately 65m from the upstream toe of the embankment; and• Zone permeabilities: ➢ Zone 1: Clayey sand/Sandy clay (local borrow from superficial deposits) – 4.5m wide, 5 x 10-8 m/s;	

Site infrastructure and equipment	Design and construction / installation requirements	Infrastructure location
	➢ Zone 2: Well-graded sand filter site manufactured) – 1.5m wide, 1 x 10-5 m/s; and ➢ Zone 3: General fill (local borrow from weathered rock) – 4m wide, 1 x 10^{-6} m/s.	
TSF Stage 2 spigots	Spigots for the discharge of tailings, with location to be varied as level of tailings beach increases.	
TSF Stage 2 freeboard	• Emergency spillway (in an area where the natural topography provides a suitable spillway location) for each stage will be present throughout operation and post closure of the TSF to prevent the embankment from overtopping in the event of extreme rainfall events occurring when the design stages are at full tailings storage capacity; • Freeboard of 500mm maintained; and • Designed for storage of excess run-off from a 1:10 average exceedance probability (AEP) notional wet season, an extreme storage allowance for a 1:100 AEP, 72-hour duration storm event run-off.	
TSF Stage 2 decant structures	• Mobile decant pump on the upstream side of the embankment to collect supernatant water released from the discharged tailings slurry into the TSF, incidental rainfall runoff and transferred seepage recovered from the seepage collection trench; • Decant pond size minimized via recirculation of decant water back to the Processing Plant Thickener; and • Cyanide levels kept at <30mg/L using Caro's acid.	
TSF Stage 2 underdrainage	• Seepage interception trench to be constructed immediately downstream of the main embankment to allow for collection and return of any near surface seepage. The trench will run parallel to the main embankment downstream toes. If seepage is intercepted by the trench, a submersible pump will be installed in a seepage recovery sump to pump water back into the TSF impoundment to be collected by the decant recovery system.	
TSF Stage 2 tailings and decant return	• Designed so that cyanide levels kept at <30mg/L using Caro's acid.	
Sulphide Circuit	• Located adjacent to the main CIL Processing Plant; • Small standalone, modular and transportable plant consisting of flotation cells, concentrate thickener and filter press; and • Shed with concrete flooring. Dust controls: • Fixed sprays to form a mist within the ROM bin and at the stockpile feed conveyor discharge point; • Sprays fitted to tipping area of crusher to ensure ore remains moist during tipping and crushing activities; • Water sprays activated via a solenoid valve when a dump truck or front end loader is detected;	Schedule 1: Maps, Figure 6

Site infrastructure and equipment	Design and construction / installation requirements	Infrastructure location
	• Dust collector installed and operated on crusher discharge conveyor; • Dust collector, including maintenance access, installed on top of the lime silo to contain dust emissions during the pneumatic loading process; • The Concentrate Thickeners, Filter Press and Concentrate Loading Area will be enclosed by a shed with concreate flooring; and • Concentrate comes out of the filter press at around 10-15% moisture before being bagged inside the shed via a small loader, feed hopper, conveyor and bagging shute. Then bulk bags stored in the shed can be transferred by forklift into sea containers for transport and transport for processing by a third-party processing plant. Noise controls: • All plant equipment maintained to ensure they are operating efficiently; • Air compressors housed in sound attenuating enclosure; • Equipment and machinery designed to comply with Australian Standard noise limits; • Apply best available technology to minimise noise emissions; and • Compliance with the *Environmental Protection (Noise)* Regulations *1997*. Stormwater controls: • Stormwater diverted away from the Processing Plant by diversion drains and bunding; • Processing activities within bunded areas, which drain to sumps with recovery pumps to feed recovered spills back to the processing circuit; • Diversion and containment bunding to capture surface water runoff from the surrounding area to direct potentially contaminated runoff to the existing sediment pond located at the CIL plant and can be fed into the process circuit (if required); • Flood protection installed around operational areas; • The shed is proposed to have internal drainage to a collection sump with any collection put back through the circuit.	
2 x Mobile Crushing and Screening Plants (stemming production plants)	Design capacity 250 tonnes per hour Components: • Primary Crusher; • Secondary Crusher; • Primary and Secondary Screens; • Conveyors; • Stacker;	Schedule 1: Maps, Figure 2 and Figure 3

Site infrastructure and equipment	Design and construction / installation requirements	Infrastructure location
	• Dust Suppression System; and • Generator set for power. Dust controls: • Sprinklers nozzles installed at the crusher entry; • Fixed sprays to form a mist within the ROM bin and at the stockpile feed conveyor discharge point; • Fitted sprays on the tipping area of the crusher to ensure ore remains moist during tipping and crushing activities; • Water sprays area activated via a solenoid valve when a dump truck or front-end loader is detected; • Dust collector on crusher discharge conveyor; and • Dust collector on top of the lime silo to contain dust emissions during the pneumatic loading process. Rotary valve to control the discharge rate of the lime to the mill feed conveyor. Noise controls: • All plant equipment maintained to ensure they are operating efficiently; • Air compressors housed in sound attenuating enclosure; • All mining operations to comply with the *Environmental Protection (Noise) Regulations 1997*; • Equipment and machinery designed to comply with Australian Standard noise limits; and • Apply best available technology to minimise noise emissions.	
1 x Copenhagen Crushing and Screening Plant (crush ore from this pit (and adjacent satellite pits) prior to it being transported to the sulphide circuit at the main process plant)	Components: • Primary Crusher; • Secondary Crusher; • Primary and Secondary Screens; • Conveyors; • Stacker; • Dust Suppression System; and • Generator set for power. Dust controls: • Sprinklers nozzles installed at the crusher entry; • Fixed sprays to form a mist within the ROM bin and at the stockpile feed conveyor discharge point; • Fitted sprays on the tipping area of the crusher to ensure ore remains moist during tipping and crushing activities;	Schedule 1: Maps, Figure 2 and Figure 3

Site infrastructure and equipment	Design and construction / installation requirements	Infrastructure location
	• Water sprays area activated via a solenoid valve when a dump truck or front-end loader is detected; • Dust collector on crusher discharge conveyor; and • Dust collector on top of the lime silo to contain dust emissions during the pneumatic loading process. Rotary valve to control the discharge rate of the lime to the mill feed conveyor. Noise controls: • All plant equipment maintained to ensure they are operating efficiently; • Air compressors housed in sound attenuating enclosure; • All mining operations to comply with the *Environmental Protection (Noise) Regulations 1997*; • Equipment and machinery designed to comply with Australian Standard noise limits; and • Apply best available technology to minimise noise emissions.	

2. The licence holder must within 60 calendar days of an item of infrastructure or equipment required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification by a suitable qualified person that the items of infrastructure or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed plans and a detailed site plant for each item of infrastructure or component of infrastructure specified in condition 1;

(c) be signed by a person authorised to represent the works approval holder and cotans the printed name and position of that person.

4. The licence holder must operate the infrastructure or equipment required by condition 1 in accordance with the conditions of this Licence, following submission of the compliance documents required under condition 2.

Operational requirements

5. The licence holder must ensure that the site infrastructure and equipment listed in

6.

Table 2 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in

7. Table 2.

Table 2: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
Processing Plant	Daily inspections logs of the following: • Integrity of all reagent, process solution and process water lines, tanks and bunds; • Process solution, reagent, process water, product spills to ground and clean-up; • Reagent storage, pond freeboard levels, bund integrity; • Ore, water and reagent input volumes; and • Discharge tailings volume and density. Maintenance of the following dust controls: • Maintain and operate the fixed sprays to form a mist within the ROM bin and at the stockpile feed conveyor discharge point; • Maintain and operate the fitted sprays on the tipping area of the crusher to ensure ore remains moist during tipping and crushing activities; • Water sprays area activated via a solenoid valve when a dump truck or front-end loader is detected; • Dust collector must be maintained and operated on crusher discharge conveyor; and • Maintain and operate dust collector on top of the lime silo to contain dust emissions during the pneumatic loading process. Rotary valve to control the discharge rate of the lime to the mill feed conveyor. Maintenance of the following noise controls: • Compliance with the *Environmental Protection (Noise) Regulations 1997*; • Equipment and machinery design compliance with Australian Standards; and • Best available technology implemented. Maintenance of the following stormwater controls: • Stormwater must be diverted away from the Processing Plant by diversion drains and bunding; • Maintain bunds in the Processing Plant area that drains to sumps with recovery pumps to feed recovered spills back to the processing circuit; and • Maintain diversion and containment bunding to capture surface water runoff from the	Schedule 1: Maps, Figure 2 and Figure 3

Site infrastructure and equipment	Operational requirement	Infrastructure location
	surrounding area to direct potentially contaminated runoff to the retention basin and can be fed into the process circuit; and • Flood protection maintained around operational areas.	
Sulphide Circuit	General: • Material from the satellite pits including Copenhagen crushed via a mobile crushing and screening unit near the Copenhagen pit and then transported by road to the main processing plant and fed into the Sulphide Circuit using a FEL; and • Tailing feed into the tails thickener at the main CIL plant (for thickening and cyanide destruction) prior to being discharged to TSF. Maintenance of the following dust controls: • Fixed sprays to form a mist within the ROM bin and at the stockpile feed conveyor discharge point; • Sprays fitted to tipping area of crusher to ensure ore remains moist during tipping and crushing activities; • Water sprays activated via a solenoid valve when a dump truck or front end loader is detected; • Dust collector installed and operated on crusher discharge conveyor; • Dust collector, including maintenance access, installed on top of the lime silo to contain dust emissions during the pneumatic loading process; and • Concentrate comes out of the filter press at around 10-15% moisture before being bagged inside the shed via a small loader, feed hopper, conveyor and bagging shute. Then bulk bags stored in the shed can be transferred by forklift into sea containers for transport and transport for processing by a third-party processing plant. Maintenance of the following stormwater controls: • Stormwater diverted away from the Processing Plant by diversion drains and bunding; • Processing activities within bunded areas, which drain to sumps with recovery pumps to feed recovered spills back to the processing circuit; • Diversion and containment bunding to capture surface water runoff from the surrounding area to direct potentially contaminated runoff to the existing sediment pond located at the CIL plant	Schedule 1: Maps, Figure 6

Site infrastructure and equipment	Operational requirement	Infrastructure location
	and can be fed into the process circuit (if required); • Flood protection installed around operational areas; and • The shed is proposed to have internal drainage to a collection sump with any collection put back through the circuit	
Pipeline and services corridor (Processing Plant and Sulphide Circuit to TSF)	Pipelines containing tailings are either: • equipped with automatic cut-outs in the event of a pipe failure; or • provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; or • provided with telemetry systems and pressure sensors along pipelines carrying environmentally hazardous materials to allow the detection of leaks and failures. Twice daily inspections.	Schedule 1: Maps, Figure 2 and Figure 3
TSF Stage 1 and Stage 2	General: • Freeboard of 500mm maintained; • Tailings thickened to >60% w/w solids; and • Decant pond to be maintained at the minimum size. Daily inspections logs of the following: • Routine inspections for all components of the TSF including: ➢ Pumps, valves; ➢ Discharge locations and beaching performance; ➢ Location and size of decant pond; ➢ General integrity of embankment; ➢ Seepage downstream of main embankment including the embankment toe and seepage trench; and ➢ Fauna entrapment. Fauna Management and Monitoring: • Beach management via spigots placement to avoid ponding of supernatant water in areas other than the decant; and • Twice daily observations and recordings (after dawn and late afternoon) of fauna usage.	Schedule 1: Maps, Figure 2 and Figure 3
Bioremediation Facility	Maintenance of the following: • Constructed on flat or gently sloping land, not subject to flooding or groundwater / surface water features; • Impermeable base layer;	Schedule 1: Maps, Figure 2 and Figure 3

Site infrastructure and equipment	Operational requirement	Infrastructure location
	• At least 300mm clean fill compacted over the base layer to prevent damage to the base layer; • 2 cells (active and inactive); • Bunding around at least 3 sides to minimise run-on and run-off; • Ramped entrance with incline and 5 degree back slope into cells; • Signage; and • Spill kit and hydrocarbon waste bin.	
Sedimentation Ponds	Maintenance of the following: • 300 mm freeboard. Daily inspection logs of integrity of all water lines, tanks and bunds	Schedule 1: Maps, Figure 2 and Figure 3
Process Water Pond	Maintenance of the following: • HDPE lining; • Fencing; • 500mm freeboard; • Emergency overflow channel that flows to the event pond downstream in an emergency event. Daily inspection logs of integrity of all water lines, tanks and bunds	Schedule 1: Maps, Figure 2 and Figure 3
Raw Water Pond	Maintenance of the following: • HDPE lining; • 300mm freeboard; • Bunding; • Scour pits and sumps along pipeline corridors. Daily inspection logs of integrity of all water lines, tanks and bunds	Schedule 1: Maps, Figure 2 and Figure 3
Crushing and Screening Plants	Maintenance of the following dust controls: • Watering unsealed roadways with water carts; • Vehicle traffic confined to defined tracks and roadways; • Sprinklers nozzles installed at the crusher entry; • Maintain and operate the fixed sprays to form a mist within the ROM bin and at the stockpile feed conveyor discharge point; • Maintain and operate the fitted sprays on the tipping area of the crusher to ensure ore remains moist during tipping and crushing activities; • Water sprays area activated via a solenoid valve when a dump truck or front-end loader is	Schedule 1: Maps, Figure 2 and Figure 3

Site infrastructure and equipment	Operational requirement	Infrastructure location
	detected; • Dust collector must be maintained and operated on crusher discharge conveyor; and • Maintain and operate dust collector on top of the lime silo to contain dust emissions during the pneumatic loading process. Rotary valve to control the discharge rate of the lime to the mill feed conveyor. Maintenance of the following noise controls: • All plant equipment maintained to ensure they are operating efficiently; • Air compressors housed in sound attenuating enclosure; • All mining operations to comply with the *Environmental Protection (Noise) Regulations 1997*; • Equipment and machinery designed to comply with Australian Standard noise limits; and • Apply best available technology to minimise noise emissions.	
Landfill	Klondyke Waste Rock Dump site: • Inert Waste Type 1, Inert Waste Type 2, Putrescible Waste, Clean Fill and Uncontaminated Fill; • Active tipping face must be a maximum length of 30 m and a maximum height of 2 m; • Covered on a fortnightly basis with at least 0.3m of inert material that is readily available from the waste rock dump; • Maintain fencing to prevent access by livestock and other fauna; • Landfill inspected weekly and windblown waste must be collected monthly; • Landfill area must be located more than 100 m from surface water features; • Separated by at least 3m from the highest level of the groundwater table; • Stormwater must be diverted away from the landfill by diversion drains and bunding; • Stormwater diverted away from the landfill by diversion drains and bunding; and • Mobile fencing installed to prevent access by livestock and other fauna. Tyres: • Disposed of in batches not exceeding 1,000 used tyres; • Covered at regular intervals so that no more	Schedule 1: Maps, Figure 2 and Figure 3

Site infrastructure and equipment	Operational requirement	Infrastructure location
	than 1,000 used tyres are left exposed; • Each batch separated by at least 100mm of soil or another dense inert and incombustible materials, with a final over not less than 500mm; and • Fire breaks maintained.	
WWTP and irrigation area	Daily inspections logs of the following: • Integrity of all water lines, tanks and bunds; and • All piping and fittings to the irrigation spray field are free of damages and leaks. Monthly inspections logs of the following: • Observe the sprinklers in the irrigation field have even coverage and are operating as designed; and • Effluent discharge managed to ensure no ponding or runoff. RO brine must be mixed/diluted into the WWTP final effluent tank prior to discharge to the irrigation area. Design effluent quality criteria targeted at: • pH 6.8 – 8.5 pH units; • Biochemical Oxygen Demand <20mg/L; • Total Suspended Solids <30mg/L; • Total Nitrogen <30mg/L; • Total Phosphorus <8mg/L; • E.coli <1,000 mg/L; and • Free Chlorine 0.2 – 2.0 mg/L.	Schedule 1: Maps, Figure 2 and Figure 3
Irrigation Area	• Stormwater diverted away from the WWTP and irrigation area by diversion drains and bunding; and • Design Total Nitrogen and Total Phosphorus loading rates: ➢ Total Nitrogen 365 kg/ha/yr; and ➢ Total Phosphorus 98 kg/ha/yr.	Schedule 1: Maps, Figure 2 and Figure 3
Hydrocarbons / chemcials storage across the site	Maintenance to ensure the following: • Designed and constructed in line with Australian Standard AS 1940:2017 The Storage and Handling of Flammable and Combustible Liquids and Australian Standard AS 1692-2006 Steel Tanks for Flammable and Combustible Liquids; • Stored in bunded areas with collection sump to recover spillages; • Level indicators to detect leaks, based on drops in level; • Transport of hydrocarbons/chemicals confined	-

Site infrastructure and equipment	Operational requirement	Infrastructure location
	to defined roads and tracks with speed restrictions; • Spill kits must be stocked and place in strategic locations on site; • Designated bins and drums will be provided to dispose of waste hydrocarbons/chemicals to be transported offsite for disposal at licensed facilities; • Hydrocarbon contaminated water will be directed to an Oily Water Separator System and the treated wastewater used in dust suppression if the TPH concentration is less than 15mg/L. If TPH tests higher than 15mg/L then recirculated through treatment system; • Remediation of contaminated soils at the Bioremediation Facility, located in the vicinity of the landfill; • Ore processing activities will be conducted within bunded, hardstand areas; • The bunded areas will incorporate a collection sump to recover spillage; • Sump pump will discharge into the leach feed trash screen underflow distribution box; • Vehicles and machinery must be serviced within designated workshop areas; • Transport of material must be on defined roads and tracks with speed restrictions; • Bins and drums must be provided and transported offsite for disposal at licensed facilities; • Stored in bunded areas with collection sump to recover spillages; • Level indicators must be maintained and operating to detect leaks, based on drops in level; • Maintain fuel bowsers and fuel delivery inlets located on concrete or HDPE lined pads to contain any spillages; and • All substances must be stored, handled, and disposed of in accordance with relevant legislation and guidelines.	

Emissions and discharges

Triggers and Limits

8. Subject to conditions 13 and 14, the licence holder must submit to the CEO a written report within 7 days of an exceedance where emissions:

(a) from the discharge point listed in Table 3;

(b) for the corresponding parameter;

(c) exceed the corresponding trigger value,

When monitored in accordance with condition 10, Table 5.

Table 3: Emissions trigger values

	Discharge point	Parameter	Trigger
1	TSF decant return pump	Tailings thickness	>60% w/w solids
2		WAD-CN	<30 mg/L

9. The licence holder must ensure that emissions from the discharge point listed in Table 4 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 10.

Table 4: Emissions and discharges limits

	Discharge point	Parameter	Limit
1	TSF decant return pump	pH	6-9 pH units
		WAD-CN	<50 mg/L
2	Oily Water Separator System dust suppression	Total Recoverable Hydrocarbons	<15 mg/L

Monitoring

10. The licence holder must monitor emissions:

(a) from each discharge point;

(b) at the corresponding monitoring location;

(c) for the corresponding parameter;

(d) at the corresponding frequency;

(e) for the corresponding averaging period;

(f) for the corresponding unit;

(g) using the corresponding method,

as set out in Table 5.

Table 5: Emissions and discharges monitoring

	Discharge point	Parameter	Frequency	Averaging Period	Unit	Method Sampling & Analysis
1	Tailings hopper	pH	Daily	Spot sample	pH units	AS5667.1-1998 AS5667.10-1998
		WAD-CN	Daily	Spot sample	mg/L	AS5667.1-1998 AS5667.10-1998
2	TSF decant return pump	pH	Daily	Spot sample	pH units	AS5667.1-1998 AS5667.10-1998
		WAD-CN	Daily	Spot sample	mg/L	AS5667.1-1998 AS5667.10-1998
		Acrylamide	Monthly	Spot sample	mg/L	AS5667.1-1998 AS5667.10-1998
3	WWTP Irrigation Tank	Volume of reject brine discharged from the RO Plant at the WWTP to the Final Irrigation Tank should be recorded.	Quarterly	Cumulative weekly	m^3	AS5667.1-1998 AS5667.10-1998
		pH		Spot sample	pH units	
		Biochemical Oxygen Demand			mg/L	
		Total Dissolved Solids				
		Total Suspended Solids				
		Total Nitrogen				
		Total Phosphorus				
		E.coli				
		Free Chlorine				
4	Oily Water Separator System dust suppression	Total Recoverable Hydrocarbons	Prior to discharge in dust suppression	Spot sample	mg/L	AS5667.1-1998 AS5667.10-1998

11. The licence holder must conduct a groundwater monitoring programme in accordance with the requirements specified in Table 6 and record the results of all monitoring activity conducted under that programme.

Table 6: Ambient groundwater monitoring

	Parameter	Monitoring location	Unit	Frequency	Averaging period	Method Sampling & Analysis
1	SWL	Groundwater monitoring network for: TSF including at least TSFMB01 TSFMB02 TSFMB03 TSFMB04 TSFMB12 Village Camp: MB11 Processing Plant: MB10	mbgl	Quarterly	Spot sample	AS5667.1-1998 AS5667.10-1998
2	pH		pH units			
3	Electrical Conductivity, EC		µS/cm			
4	Total Dissolved Solids, TDS		mg/L			
5	Sulfate, SO_4					
6	Ammonia, NH_3					
7	Nitrite, NO_2					
8	Nitrite + Nitrate, NO_3					
9	Total Kjeldahl Nitrogen, N					
10	Total Nitrogen, TN					
11	Total Phosphorus, TP					
12	Reactive Phosphorus, P					
13	Total CN					
14	WAD-CN					
15	Acrylamide					
16	Aluminium, Al					
17	Arsenic, As					
18	Boron, B					
19	Barium, Ba					
20	Beryllium, Be					

	Parameter	Monitoring location	Unit	Frequency	Averaging period	Method Sampling & Analysis
21	Cadmium, Cd	Groundwater monitoring network for: TSF including at least TSFMB01 TSFMB02 TSFMB03 TSFMB04 TSFMB12 Village Camp: MB11 Processing Plant: MB10	mbgl	Quarterly	Spot sample	AS5667.1-1998 AS5667.10-1998
22	Calcium, Ca					
23	Chloride, Cl					
24	Chromium, Cr					
25	Cobalt, Co					
26	Copper, Cu					
27	Fluoride, F					
28	Iron, Fe					
29	Lead, Pb					
30	Magnesium, Mg					
31	Manganese, Mn					
32	Mercury, Hg					
33	Molybdenum, Mo					
34	Nickel, Ni					
35	Antimony, Sb					
36	Selenium, Se					
37	Strontium, Sr					
38	Uranium, U					
39	Vanadium, V					
40	Zinc, Zn					
41	Phreatic surface levels within TSFs embankments	Vibrating Wire Piezometers VWP01 VWP02 VWP03 VWP04 VWP05 VWP06	m AHD	Monthly	Hourly	Data logger

12. The licence holder must undertake monitoring of the water balance for the TSF Stage 1 and Stage 2 each monthly period, and (as a minimum) record the following information:

(a) site rainfall;

(b) evaporation rate;

(c) decant water recovery volumes;

(d) volume of tailings deposited; and

(e) estimate of seepage losses.

Specified actions

13. The licence holder must, in the event of a parameter in condition 9, Table 4 exceeding the corresponding trigger value specified in that condition, undertake the management actions that correspond with the relevant parameter and corresponding monitoring location within the corresponding timeframes as specified in Table 7.

Table 7: Management actions required in the event of trigger value exceedance

Monitoring location	Parameter	Management action	Timeframe
TSF decant return pump	WAD-CN	• Investigate the cause(s) of any exceedances; and • Take relevant action(s) to minimize the likelihood of future exceedances of a similar nature	As soon as is practicable after the detection of an exceedance

14. The licence holder must include the following information in the report referred in condition 8, Table 3 in relation to any exceedances of any of the trigger values identified in that condition:

(a) the nature, volume, and a characteristics of the emissions or ambient concentrations exceedance;

(b) the time and date when the exceedance occurred;

(c) whether any environmental impact occurred as a result of the exceedance and, if so, what the impact was and where the impact occurred;

(d) the details of the management actions taken pursuant with condition 13 in response to the exceedance;

(e) the details and result of any investigation undertaken into the cause of the exceedance; and

(f) the details of any action or specified measures that have been taken, or will be taken, to prevent the exceedance occurring again and for the purpose of minimising the likelihood of pollution or environmental harm.

15. The licence holder must put management measures in place to ensure that the WAD-CN limit as per condition 9, Table 4 is met within six months from the date of issue of this licence.

Records and reporting

16. The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

17. The licence holder must submit to the CEO no later than 60 days after the end of each annual period, an Annual Environmental Report for that annual period for the conditions listed in Table 8, and which provides information in accordance with the corresponding requirement set out in Table 8.

Table 8: Annual Environmental Report

Condition	Requirement
10, Table 5	Monitoring of emissions and discharges with interpretation of results against relevant standards.
0, Table 6	Monitoring of ambient groundwater monitoring with interpretation of results against relevant standards.
10	Summary of water balance
8, Table 3 13, Table 7 14	Summary of any exceedance reports provided to CEO.

18. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and

(b) prepare and submit to the CEO by no later than 60 days after the end of that annual period an Annual Audit Compliance Report in the approved form.

19. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

(a) the calculation of fees payable in respect of this licence;

(b) the works conducted in accordance with condition 1 Table 1 of this licence;

(c) any maintenance of infrastructure that is performed in the course of complying with condition 1, Table 1 of this licence;

(d) monitoring programmes undertaken in accordance with condition 0 Table 6 and condition 16 Table 6 of this licence; and

(e) complaints received under condition 16 of this licence.

20. The books specified under condition 19 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the licence holder for the duration of the licence; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this licence, the terms in Table 9 have the meanings defined.

Table 9: Definitions

Term	Definition
ACN	Australian Company Number
AEP	Annual Exceedance Probability
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples.
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling of groundwaters.
ANZEG 2018	Australian and New Zealand guidelines for fresh and marine water quality https://www.waterquality.gov.au/guidelines/anz-fresh-marine
AER	Annual Environmental Report
annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year.
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer of the Department. "submit to / notify the CEO" (or similar), means either: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
CIL	carbon-in-leach.
CN	Cyanide.
Clean Fill	has the meaning defined in the Landfill Definitions.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.

Term	Definition
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
FEL	Front End Loader
Freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
Inert Waste Type 1	has the meaning defined in the Landfill Definitions.
Inert Waste Type 2	has the meaning defined in the Landfill Definitions.
Landfill Definitions	means the document titled "Landfill Waste Classification and Waste Definitions 1996 (as amended 2018)" published by the Chief Executive Officer of the Department of Water and Environmental Regulation as amended from time to time.
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
m AHD	Elevation in metres to Australian Height Datum.
monthly period	means a one-month period commencing from first day of a calendar month until the last day of that same month.
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this licence.
prescribed premises	has the same meaning given to that term under the EP Act.
Putrescible Waste	has the meaning defined in the Landfill Definitions.
RO	Reverse osmosis
ROM	Run Of Mine
TSF	Tailings Storage Facility
Uncontaminated Fill	has the meaning defined in the Landfill Definitions.

Term	Definition
WAD-CN	Weak Acid Dissociable Cyanide.
waste	has the same meaning given to that term under the EP Act.
WWTP	Wastewater Treatment Plant

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).

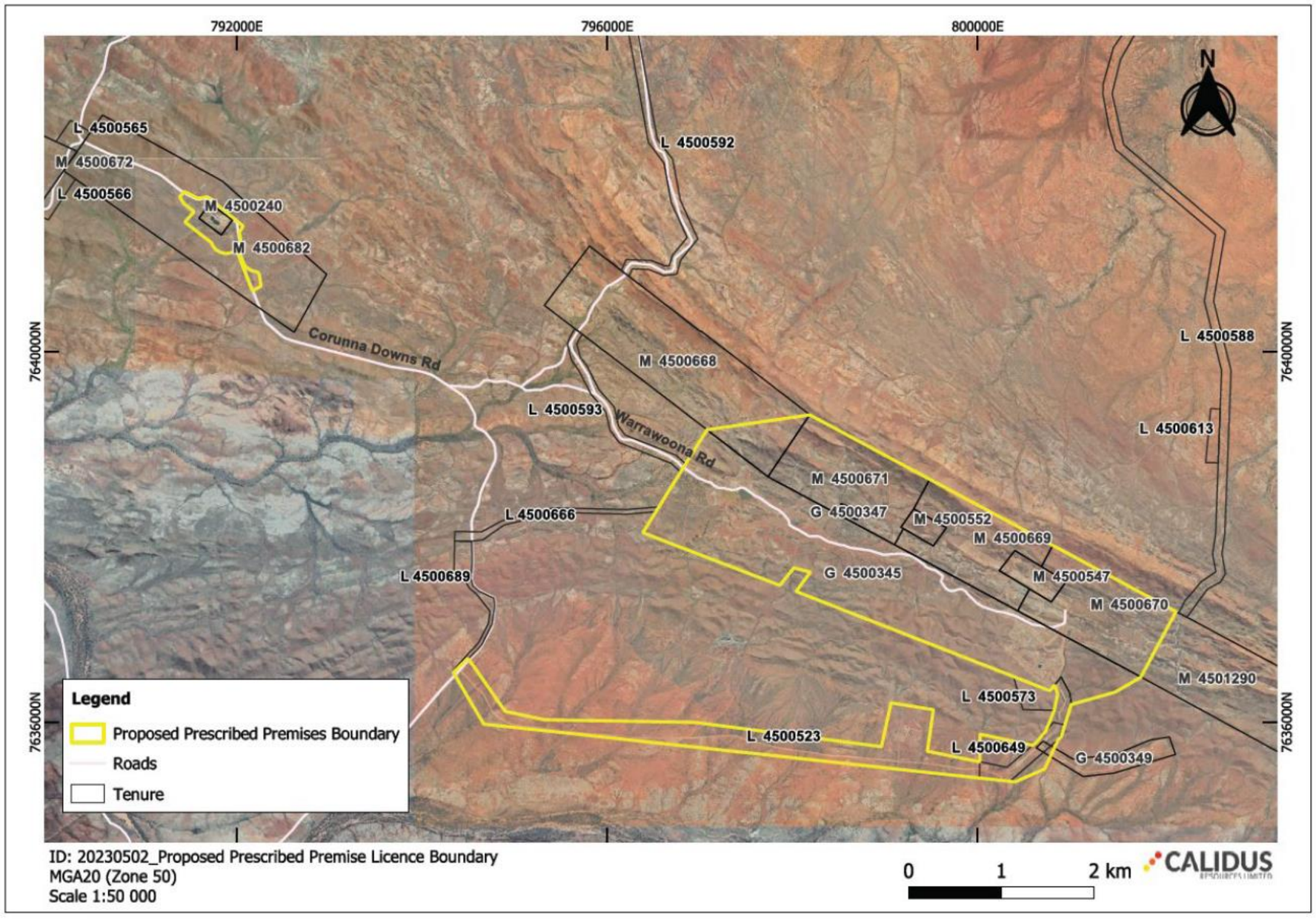

Figure 1: Map of the boundary of the prescribed premises

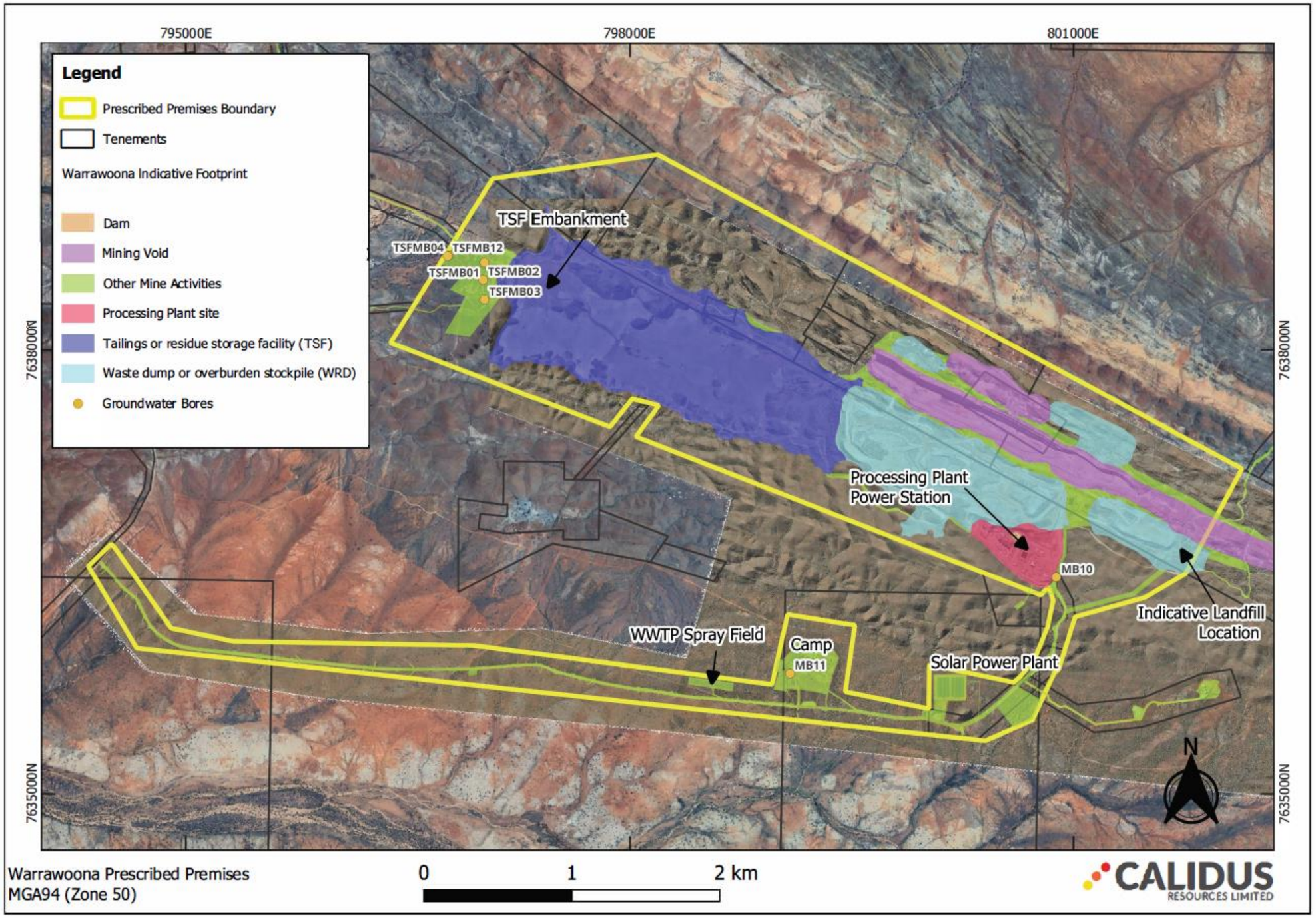

Figure 2: Site Layout (1 of 2)

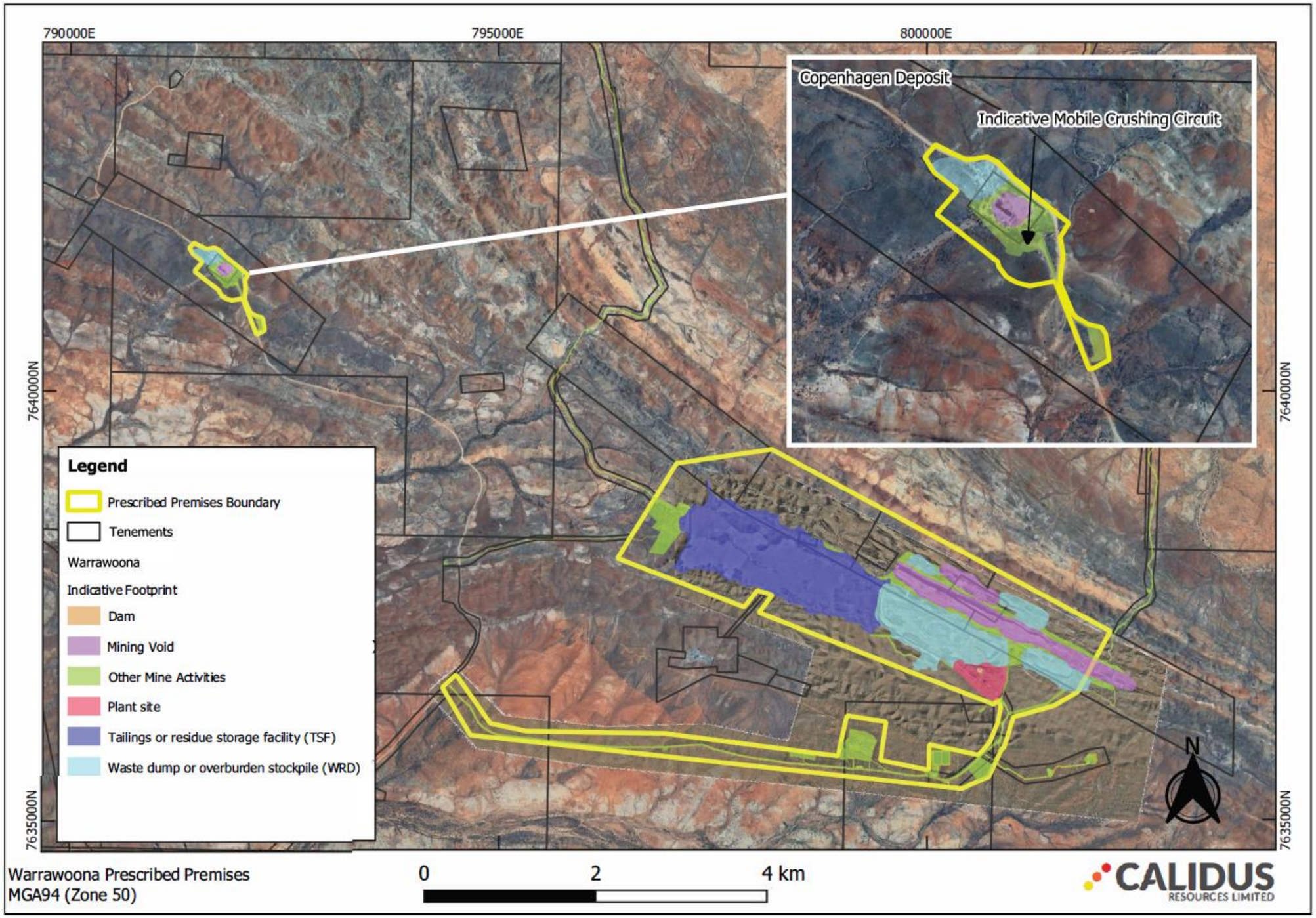

Figure 3: Site Layout (1 of 2)

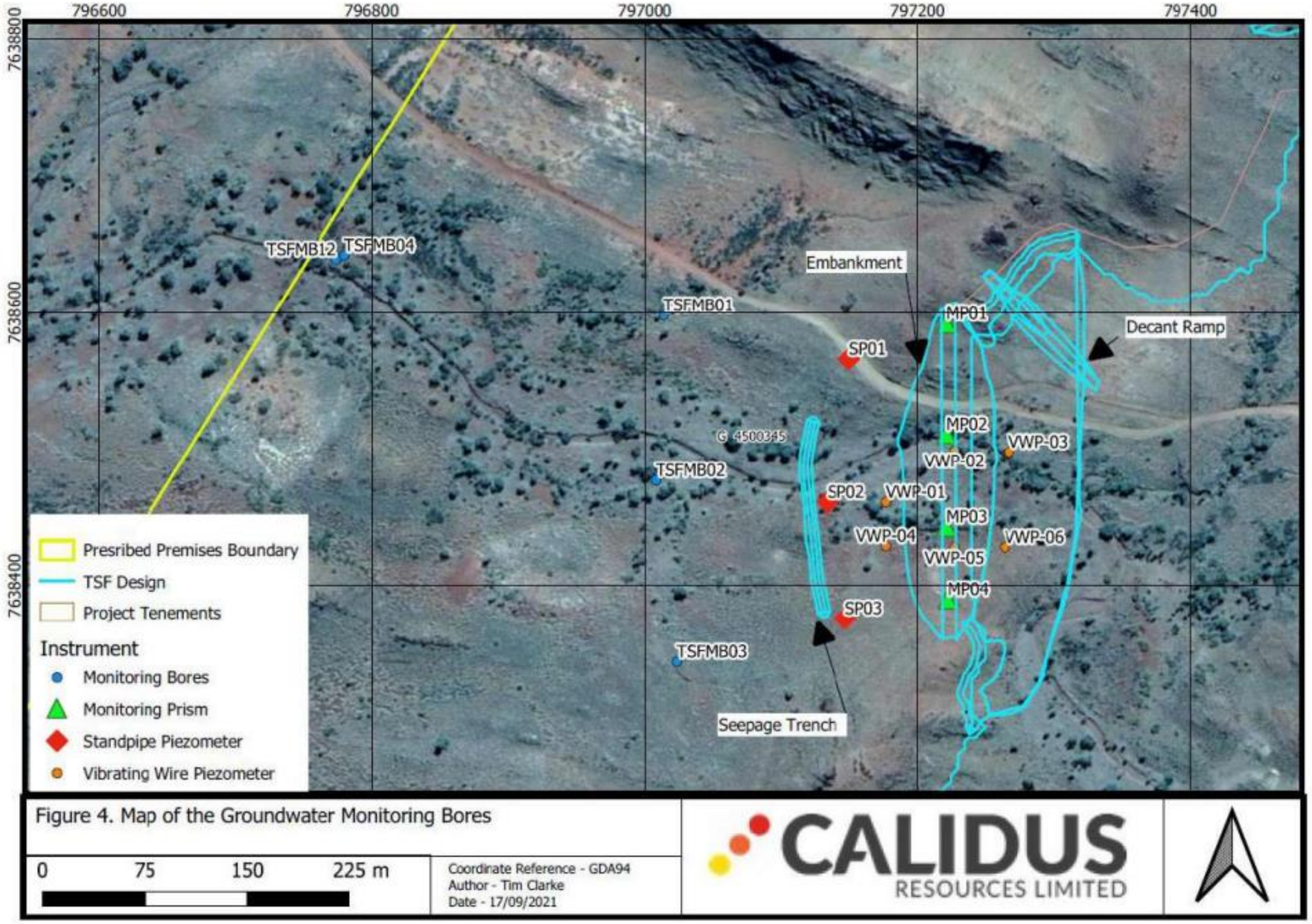

Figure 4: Map of the TSF Groundwater Monitoring Bores

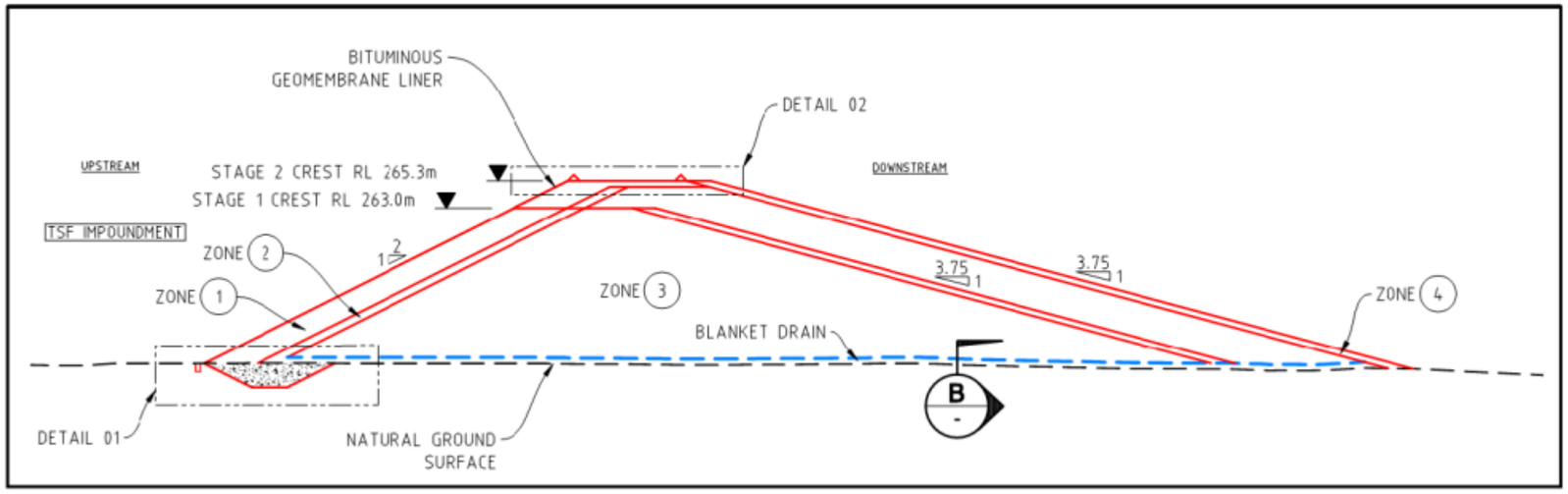

Figure 5: TSF Embankment Geometry

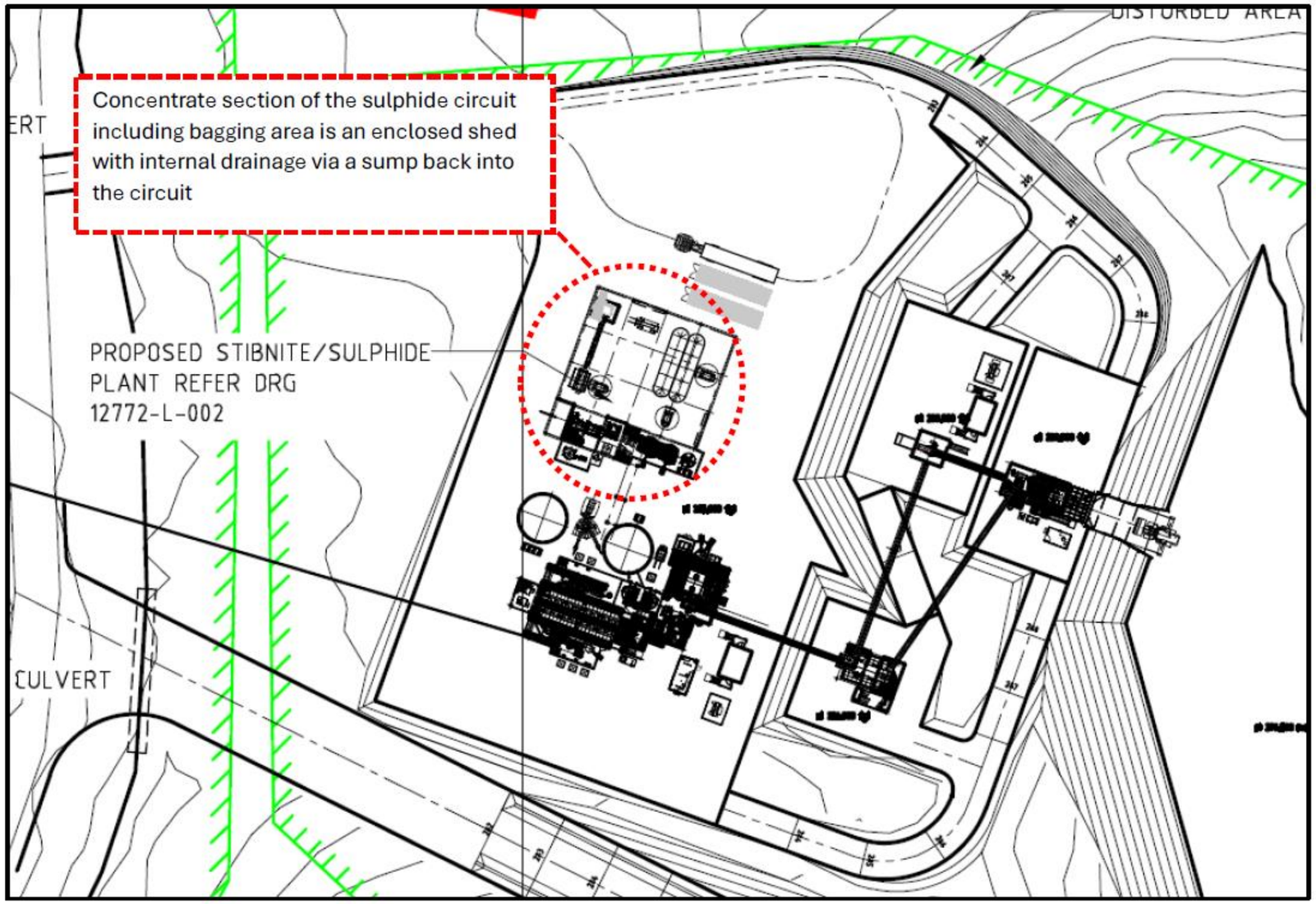

Figure 6: Concentrate Loading Area

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 10.

Table 10: Premises boundary coordinates (GDA2020)

	Easting	Northing	Zone
Warrawoona			
1.	794494	7636690	50
2.	794516	7636669	50
3.	794900	7636121	50
4.	795325	7636030	50
5.	796946	7636003	50
6.	798960	7635740	50
7.	799066	7636213	50
8.	799522	7636139	50
9.	799457	7635691	50
10.	800023	7635576	50
11.	800026	7635874	50
12.	800596	7635755	50
13.	800639	7635792	50
14.	800737	7635908	50
15.	800774	7636001	50
16.	800826	7636131	50
17.	800863	7636307	50
18.	800832	7636404	50
19.	800780	7636343	50
20.	798040	7637415	50
21.	798195	7637625	50
22.	798015	7637670	50

23.	797865	7637480	50
24.	796385	7638049	50
25.	797077	7639158	50
26.	798187	7639320	50
27.	802142	7637198	50
28.	801762	7636491	50
29.	801485	7636328	50
30.	801012	7636197	50
31.	800942	7635973	50
32.	800901	7635844	50
33.	800870	7635817	50
34.	800724	7635501	50
35.	800405	7635359	50
36.	800348	7635366	50
37.	794667	7635985	50
38.	794339	7636541	50
39.	794494	7636690	50
Copenhagen			
40.	791437	7641730	50
41.	791576	7641660	50
42.	791603	7641659	50
43.	791664	7641670	50
44.	791683	7641672	50
45.	791732	7641646	50
46.	791805	7641574	50
47.	792070	7641358	50
48.	792030	7641292	50

49.	792042	7641219	50
50.	792043	7641189	50
51.	792037	7641157	50
52.	792030	7641094	50
53.	792032	7641065	50
54.	792090	7640928	50
55.	792108	7640909	50
56.	792164	7640876	50
57.	792227	7640861	50
58.	792246	7640830	50
59.	792263	7640709	50
60.	792191	7640669	50
61.	792167	7640662	50
62.	792075	7640902	50
63.	792022	7641039	50
64.	792004	7641082	50
65.	791884	7641059	50
66.	791822	7641075	50
67.	791773	7641104	50
68.	791737	7641150	50
69.	791732	7641175	50
70.	791442	7641400	50
71.	791541	7641513	50
72.	791430	7641599	50
73.	791386	7641670	50
74.	791437	7641730	50