



Works approval number	W6371/2020/1
Works approval holder	Wiluna Operations Pty Ltd
ACN	166 954 525
Registered business address	Level 3 1 Altona Street West Perth WA 6005
DWER file number	DER2020/000099
Duration	23/07/2020 to 22/07/2023
Date of issue	23/07/2020
Premises details	Wiluna Mine Site Goldfields Highway WILUNA Mining Leases M53/96 and M53/200 As defined by the Schedule 1

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production capacity
Category 05 : Processing or beneficiation of metallic or non-metallic ore; premises on which – (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; (b) tailings from metallic or non-metallic ore are reprocessed; or tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.	750,000 tonnes per year

This works approval is granted to the works approval holder, subject to the attached conditions, on 23 July 2020, by:

A/MANAGER, RESOURCE INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Interpretation

In this works approval:

- (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 works approval:
 - (i) if dated, refers to that particular version; and
 - (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (f) unless specified otherwise, all definitions are in accordance with the EP Act.

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

Works approval conditions

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

Construction phase

Infrastructure and equipment

1. The works approval holder must:
 - (a) construct and/or install the infrastructure and/or equipment;
 - (b) in accordance with the corresponding design and construction / installation requirements; and
 - (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

	Infrastructure	Design and construction requirements	Infrastructure location
1.	Stormwater Management System	a) Stormwater system surrounding the sulphide ore processing plant and reagent facility shall be integrated with the site stormwater management system. b) Stormwater diversion system shall be inspected and repaired to divert surface water flows around major infrastructure and construction areas. c) The reagent facility, sulphide ore processing plant and all pipelines, process tanks shall be above the 1% AEP flood event.	Schedule 1, Figure 5
2.	Bunds and Sumps across all infrastructure	a) All bund, sump and chemical loading area materials and stormwater runoff management pipework, valves and jointing compounds, seals, water stops shall be chemically resistant to reagents, process fluids and environmental exposure. b) The floor level of bunds, sumps, chemical loading areas, bunded process areas and concentrate loadout areas shall be above the 1% AEP flood level. c) Bunds, sumps, chemical loading areas, concentrate loading areas and bunded process areas exposed to rainfall shall accommodate the largest inventory, plus any joined inventory plus the 1% AEP 24 hour duration rainfall event.	Schedule 1, Figure
3.	General Pipeline Requirements	a) Pipelines shall be overland or within bunded pipe racks b) Pipelines shall not be directly buried. c) Pipelines shall be sleeved or pass through culverts where pipelines cross roads or infrastructure.	Schedule 1 Figure 3

	Infrastructure	Design and construction requirements	Infrastructure location
4.	Sulphide Ore Processing Plant including flotation circuit and concentrator and Ore Supply Infrastructure (grinding and classification)	<p>a) One SK-240 flash flotation cell (existing)</p> <p>b) One 1.2 m x 3.6 m trash screen</p> <p>c) One 50 m³ high intensity conditioning tank</p> <p>d) Five 50 m³ tank rougher flotation cells</p> <p>e) Two 20 m³ tank cleaner flotation cells</p> <p>f) Four 20 m³ tank cleaner scavenger flotation cells</p> <p>g) One 8 m diameter hi-rate concentrate thickener (existing relocated)</p> <p>h) One 200 m² vertical plate pressure filter for concentrate</p> <p>i) Concentrate storage shed</p> <p>j) Bagging plant;</p> <p>k) 3 m x 6 m flotation area control room;</p> <p>l) Flotation area MCC and switch room</p> <p>m) Bunding within the sulphide ore process plant area shall include the following process areas:</p> <ul style="list-style-type: none"> Concentrate filter and loadout area Rougher area Cleaner area Thickener area <p><u>n) Bund volumes within the process plant shall contain the loss of containment from the largest process circuit, plus the 24 hour 1% AEP rainfall event.</u></p>	<p>Schedule 1 Figure 2</p> <p>Figure 3 Figure 4</p>
5.	Reagent mixing and distribution unloading facility and pipelines to the sulphide ore processing facility	<p>a) Flotation reagents mixing, storage, distribution and dosing systems for the flotation reagents and flocculant.</p> <p>b) One 75m³ tank for storage of copper sulphate</p> <p>c) One 45m³ tank for storage of potassium amyl xanthate</p> <p>d) Pipelines transferring reagents from the reagent mixing and storing area to the sulphide ore processing plant shall have double containment.</p> <p>e) Reagent pipelines shall not be directly buried.</p> <p>f) Reagent pipelines shall be sleeved or passed through culverts where pipelines cross roads or infrastructure.</p> <p><u>g) A process control system shall be implemented to monitor the flow and pressure of reagent to the sulphide ore processing plant and shall alarm Operations in the event of loss of containment.</u></p> <p>h) Reagent offloading area shall be undertaken upon</p>	<p>Schedule 1 Figure 2 Figure 3</p>

	Infrastructure	Design and construction requirements	Infrastructure location
		a trafficable kerbed, chemical resistant apron such that any leakage or spill is be directed to a sump/bund area for recovery/disposal.	
6.	Tailings pipeline and return water pipeline	a) Two tailings pipelines to tailings facility b) Two return water pipelines from tailings facility to the process water tank c) Tailings disposal lines shall be fitted with two magnetic flow meters to provide rupture detection and a pressure transmitter for monitoring. d) The tailings return water pipelines shall be fitted with two magnetic flowmeters to provide rupture detection and a pressure transmitter for monitoring purposes.	Schedule1 Figures 3 and 6
7.	Pipeline(s) from the existing facility to the sulphide ore processing plant	a) A process control system shall be implemented to monitor the flow and pressure and, shall alarm Operations in the event of loss of containment.	Schedule 1 Figure 3

Compliance reporting

2. The works approval holder must within 30 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 mining process engineer with at least 20 years experience, a civil engineer with at least 20 years experience and mechanical engineer with at least 20 years experience that the sulphide ore processing plant 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 plan for each item of infrastructure or component of infrastructure specified in condition 1; and
 - (c) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.
4. Where an item of infrastructure has been certified as not being located or constructed, or does not comply with the corresponding requirements, the works approval holder must correct the non-compliant or defective works, prior to re-certifying, or provide to the CEO a description of, and explanation for, any departures from the requirements specified in condition 1 that do not require relocation or rectification and do not constitute a material defect along with the Environmental Compliance Report.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

5. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 6 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 2 of this works approval.
6. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 2 may only be carried out:
 - (a) in accordance with the corresponding commissioning requirements; and
 - (b) for the corresponding authorised commissioning duration.

Table 2 Environmental commissioning requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
Sulphide Ore Processing Plant including flotation circuit and concentrator and Ore Supply Infrastructure (grinding and classification)	a) Bunds and sumps shall be leak tested.	For a period not exceeding 3 calendar months in aggregate.
Reagent mixing and distribution unloading facility and pipelines to the sulphide ore processing facility	a) Reagent pipelines shall be hydrotested. b) All flow meters shall be calibrated. c) All pressure meters shall be calibrated. d) Process control alarm for loss of containment shall be tested. e) Bunds and sumps leak tested.	
Pipelines between sulphide ore processing plant and tailings facility	a) Pipelines shall be hydrotested. b) All flow meters shall be calibrated. c) All pressure meters shall be calibrated.	
Pipeline(s) from the existing facility to the sulphide ore processing plant	a) Pipelines shall be hydrotested. b) All flow meters shall be calibrated. c) All pressure meters shall be calibrated.	

7. During the commissioning period the Works Approval Holder must collect five sulphide ore tailings samples to determine geochemical and geotechnical characteristics for the parameters as listed in Table 5 of Schedule 2.

8. During environmental commissioning, the works approval holder must ensure that the emission(s) specified in Table 3, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 3: Authorised discharge points during commissioning

	Emission	Discharge point	Discharge point location
1.	Hydrotest water containing chemical additives, scale or substance that will impact water quality	Tailings Facility	As shown in Schedule 1: Map of authorised discharge point Figure 1
2.	Flushing water containing chemical additives, scale or substance that will impact water quality	Tailings Facility	

Environmental Commissioning Reporting

9. The works approval holder must submit to the CEO an Environmental Commissioning Report within 60 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 2.
10. The works approval holder must ensure the Environmental Commissioning Report required by condition 9 of this works approval includes the following:
- (a) a summary of the environmental performance of each item of infrastructure or equipment as constructed or installed (as applicable), which at minimum includes records detailing the:
 - (i) hydro-testing of pipelines;
 - (ii) calibration of flow meters and pressure transmitters;
 - (iii) testing the system; and
 - (iv) sulphide tailings geotechnical and geochemical results;
 - (b) a review of the works approval holder's performance and compliance against the conditions of this works approval; and
 - (c) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Records and reporting (general)

11. The works approval holder must record the following information in relation to complaints received by the works approval 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 works approval holder to investigate or respond to any complaint.
- 12.** The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:
- (a) the works conducted in accordance with condition 1;
 - (b) any maintenance of infrastructure that is performed in the course of complying with condition 1 Table 1, Item 1 parts a) and b); and
 - (c) complaints received under condition 11.
- 13.** The books specified under condition 12 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 works approval holder for the duration of the works approval; and
 - (d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 4 have the meanings defined.

Table 4: Definitions

Term	Definition
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Condition	means a condition to which this Works Approval is subject under s.62 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V Division 3 of the EP Act.
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.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	<i>Environmental Protection Act 1986</i> (WA).
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA).
premises	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 works approval.

Term	Definition
prescribed premises	has the same meaning given to that term under the EP Act.
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below.

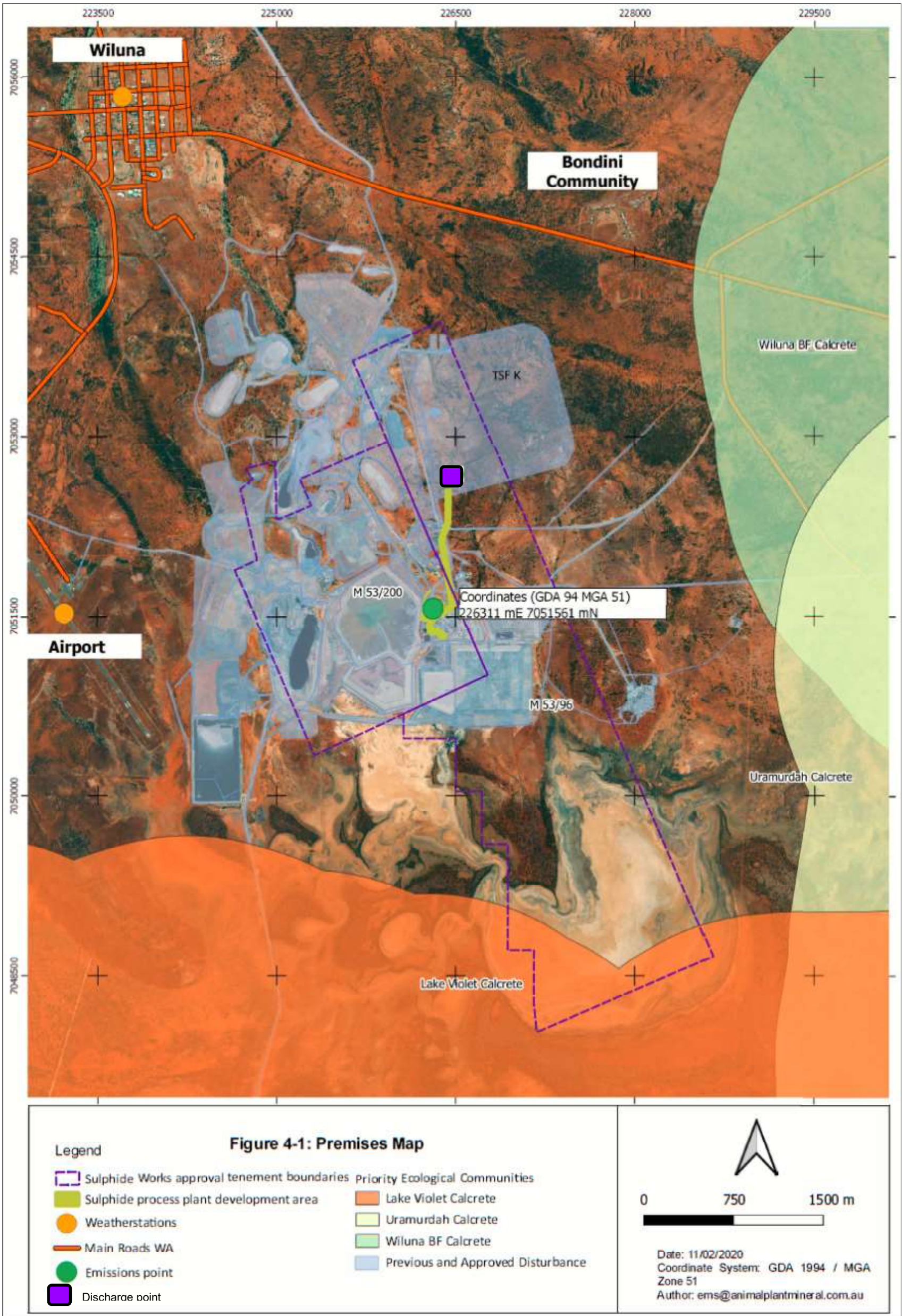


Figure 1 Map of the boundary of the prescribed premises and discharge point.

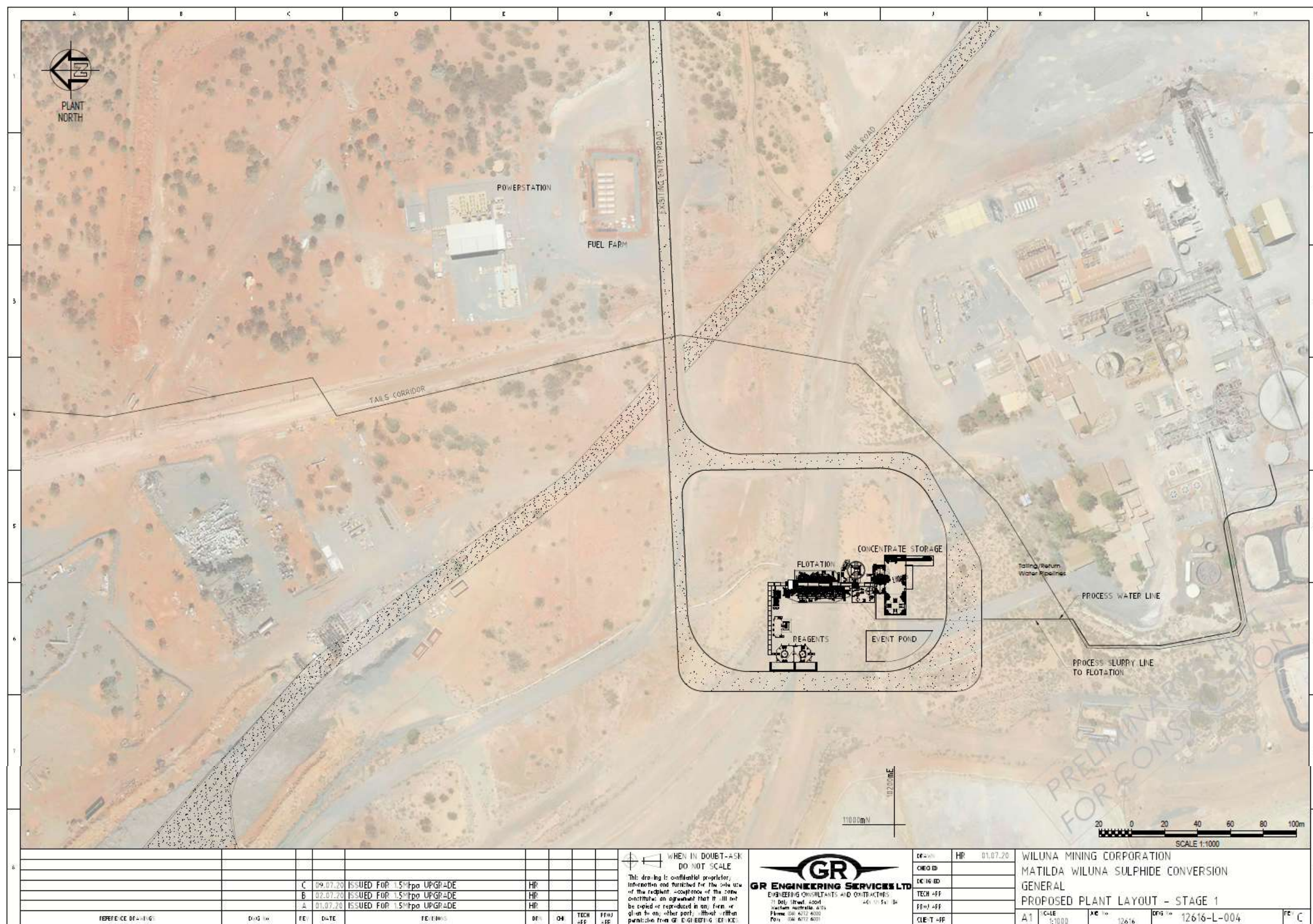


Figure 3 General Arrangement Layout of Sulphate Ore Processing Facility, Reagent Facility, Pipelines and Existing Facilities that will be utilised.

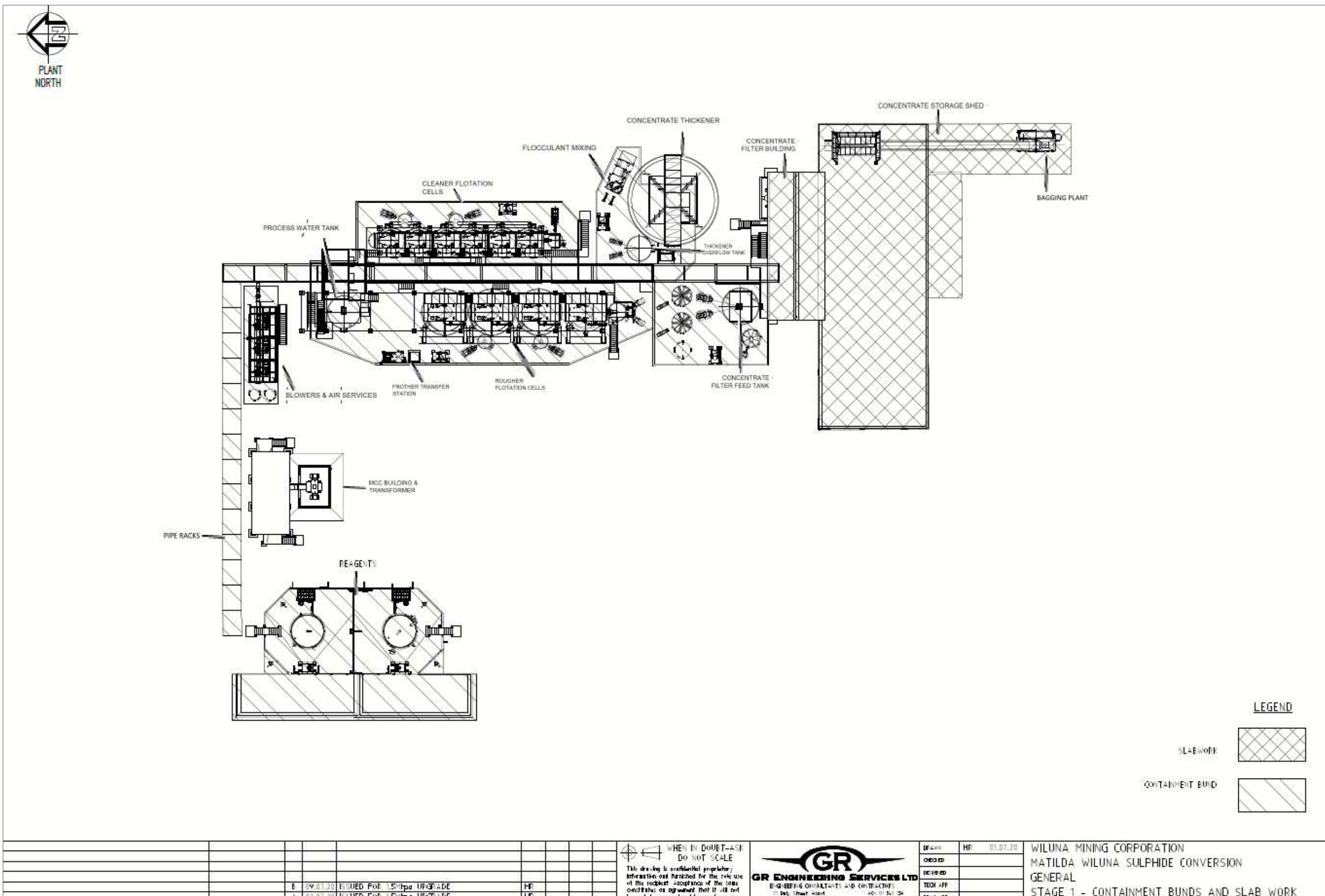


Figure 4 General Arrangement Layout of Sulphate Ore Processing including concrete bundled areas in the Sulphide Processing Plant

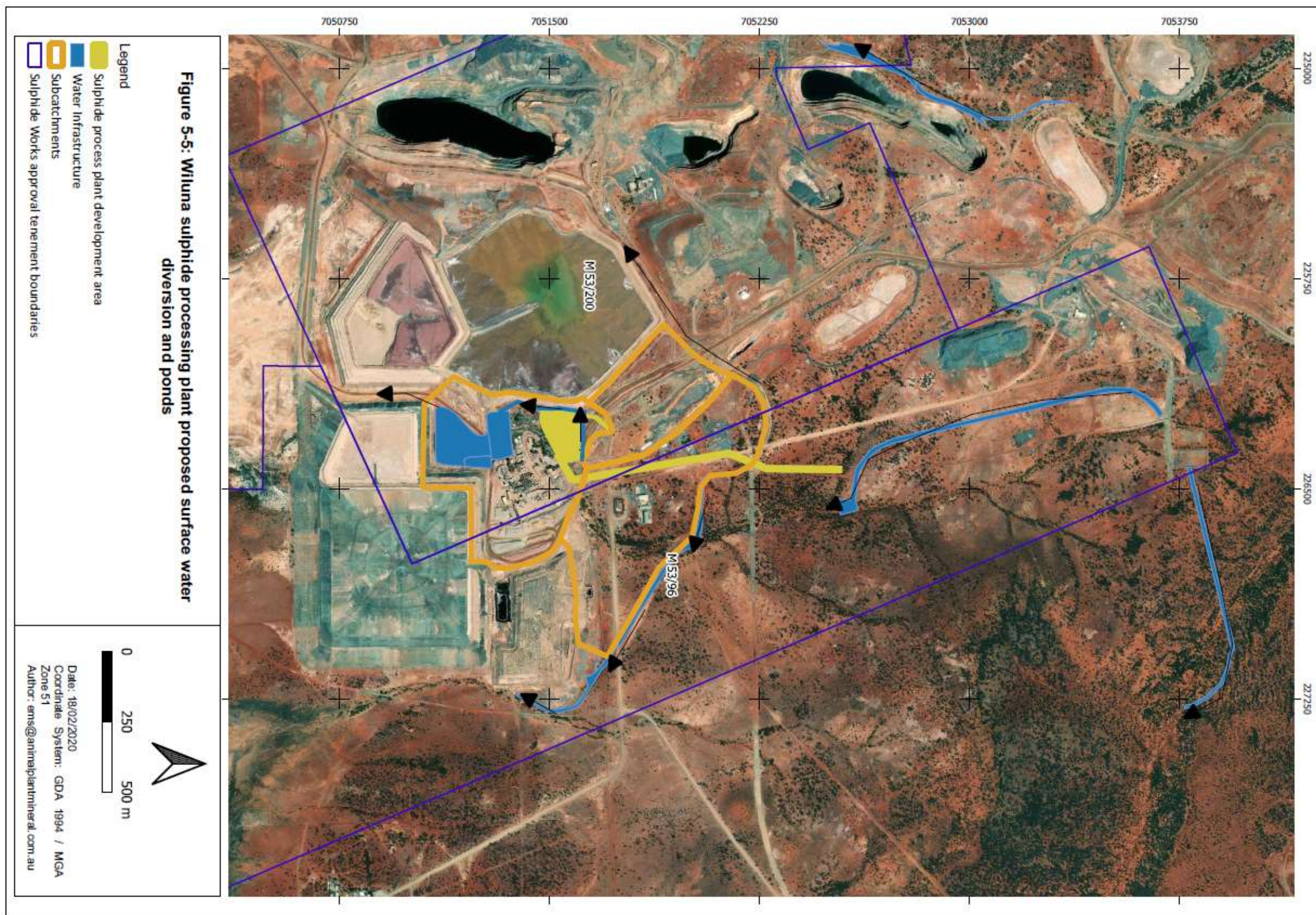


Figure 5 Proposed Surface Water Diversion Management System and Minesite Surface Water Drainage Management System

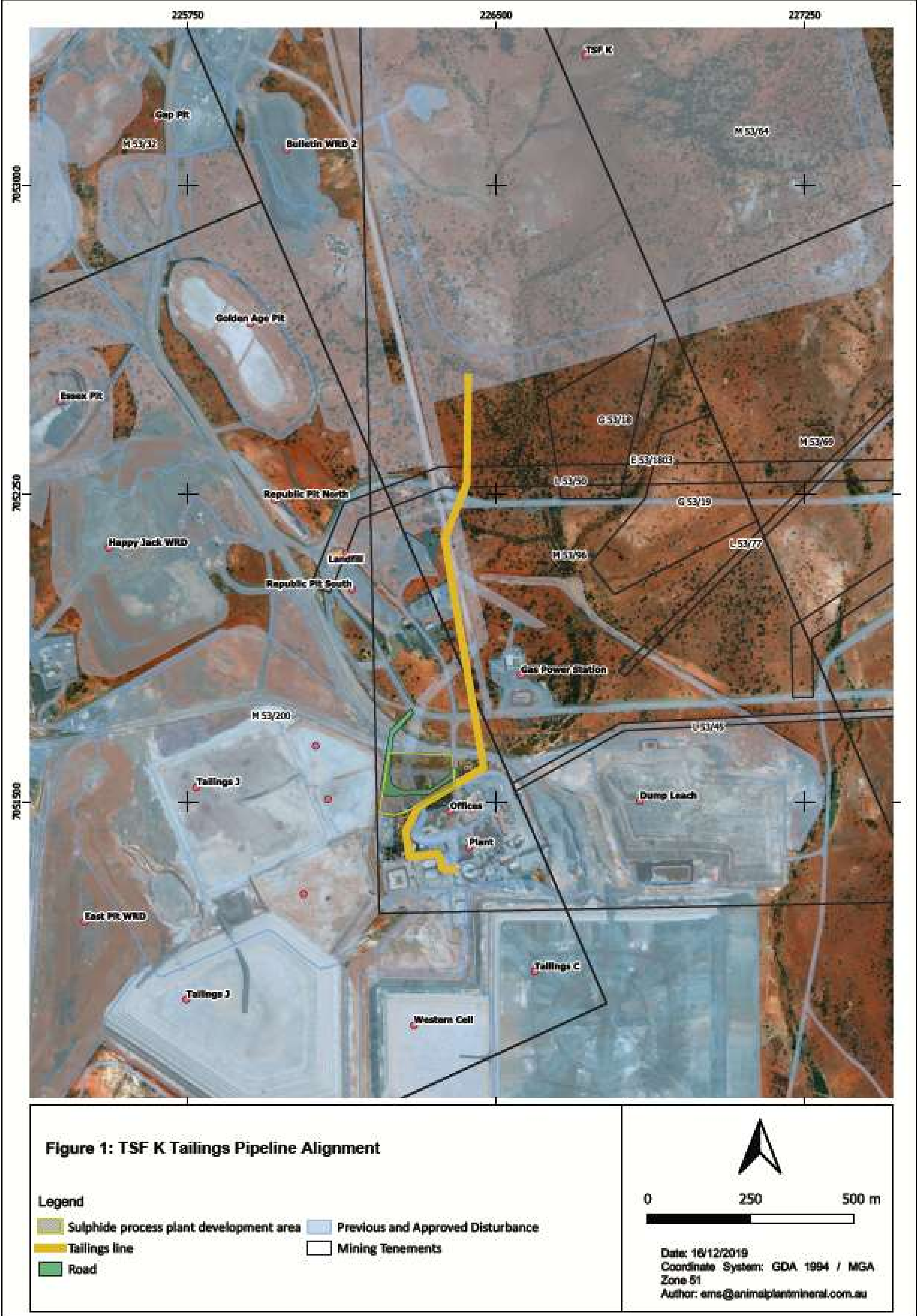


Figure 6 Proposed Tailings pipeline arrangement

Schedule 2: Sulphide tailings characterization

Table 5 Geochemical and Geotechnical parameters to be determined

Sulphide Processing Plant tailings	Parameter	Units	Averaging period	Method
Five samples (during plant steady state)	<u>Physical</u> pH (pH units), electrical conductivity ($\mu\text{S}/\text{cm}$) and total dissolved solids (mg/L)	Refer to parameter listed	Spot sample	Sampling in accord with AS/NZS 5667.1; and analysis in accord with AS/NZS 5667.11
	<u>Dissolved Major Cations and Anions</u> bicarbonate, bromide, carbonate, calcium, calcium carbonate, chloride, magnesium, nitrate, potassium, phosphorus, sodium and sulfate	mg/L		
	<u>Dissolved Metalloid(s)</u> aluminium, antimony, arsenic, boron, cadmium, cobalt, chromium (hexavalent and trivalent), copper, total cyanide, fluoride, total iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, selenium, strontium, thallium, vanadium, weak acid dissociable (WAD) cyanide, zinc	mg/l		
	Geotechnical parameters: <ul style="list-style-type: none"> Particle size distribution (PSD) Settling test (drained and undrained) Soil particle density (SPD) Air drying test Hydraulic conductivity 	N/A		