Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L8234/2008/2
Licence holder	Robe River Mining Co. Pty Ltd
ACN	008 694 246
Registered business address	Level 18, Central Park 152-158 St Georges Terrace PERTH WA 6000
DWER file number	DER2014/000868-1
Duration	31/07/2013 to 30/07/2033
Date of issue	18/07/2013
Date of amendment	04/12/2024
Premises details	Mesa A Warramboo Iron Ore Mine ML248SA, G08/82, G08/85, G08/90, L08/166, L08/177 and L08/178 FORTESCUE WA 6716 As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production / design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	35,000,000 tonnes per annual period
Category 6: Mine dewatering	7,000,000 tonnes per annual period
Category 12: Screening, etc. of material	10,000,000 tonnes per annual period
Category 54: Sewage facility	341 cubic metres per day
Category 64: Class II putrescible landfill site	2,000 tonnes per annual period

This licence is granted to the licence holder, subject to the attached conditions, on 04 December 2024, by:

Jarrod Abrahams
Digitally signed by Jarrod Abrahams
Date: 2024.12.04 08:26:00 +08'00'

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

Licence history

Reference number	Date	Summary of changes
L8234/2008/2	31/07/2013	Licence reissued.
L8234/2008/2	29/04/2016	Notice of Amendment of Licence Expiry Dates section 59B(9) and section 59(1)(k) *Environmental Protection Act 1986.*
L8234/2008/2	25/08/2016	Licence amendment to include a Sequencing Batch Reactor (SBR) wastewater treatment plant (WWTP) constructed under works approval W5872/2015/1.
L8234/2008/2	18/04/2019	Licence amendment for the construction and operation of an additional WWTP at the Premises. Increase in category 54 design capacity for sewage treatment.
L8234/2008/2	21/11/2022	Licence amendment for the following: • include the Ore Processing Facility (OPF) constructed under W6284/2019/1; • include category 6 with a limit of 7 GL/a and the Warramboo dewatering discharge point constructed under W6284/2019/1; • expansion of the premises boundary; and • conversion to the current licence format.
L8234/2008/2	4/07/2023	Licence amendment to include the operation of the Mesa A Tailings Storage Facility (previously named Warramboo Fines Storage Facility) constructed, commissioned, and time-limited operations under works approval W6284/2019/1, and administrative changes.
L8234/2008/2	04/01/2024	Licence amendment to update condition 3, Table 2 for the TSF freeboard.
L8234/2008/2	04/12/2024	Licence amendment for the following: • inclusion of Category 64 for the Mesa C waste dump landfill (constructed under W6284/2019/1); • provision for the construction and operation of subsequent waste dump and putrescible landfills within the prescribed premises boundary; and • change to the frequency of monitoring for TSF1 and TSF2 monitoring bores.

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:

  (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 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:

General conditions

1. The licence holder must ensure the limits specified in Table 1 are not exceeded.

Table 1: Production or design capacity limits

Category[1]	Category description[1]	Premises production or design capacity limit
5	Processing or beneficiation of metallic or non-metallic ore	35,000,000 tonnes per annual period
6	Mine dewatering	7,000,000 tonnes per annual period
12	Screening etc. of material	10,000,000 tonnes per annual period
54	Sewage facility	341 cubic metres per day
64	Class II putrescible landfill site	2,000 tonnes per annual period

Note 1: *Environmental Protection Regulations 1987*, Schedule 1.

Infrastructure and equipment

2. The licence holder must ensure that the site infrastructure and equipment listed in Schedule 4: Infrastructure and equipment, Table 11 and located at the corresponding infrastructure location is maintained and operated in good working order.

3. The licence holder must ensure that the site infrastructure and equipment listed in Table 2 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 2.

Table 2: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
Mobile Crushing and Screening Plant(s)	Operated in accordance with the Iron Ore (WA) Mobile Crushing and Screening Management Plan (RTIO-HSE-0235877).	Not shown
Dust control systems	Maintain and operate installed dust control systems including: (i) primary sizer deluge PW-101; (ii) dust collectors DC-101 and DC-102; (iii) moisture analysers MN-101 and MN-102; (iv) water-add systems on AF-101, CV-101, CV-2201; (v) water cannons at train load-out stockpile, and (vi) sprinkler systems SP-101, SP-102, SP-103 and SP-104 as described in drawing number MA-2000-G-0302 contained in the document "Compliance Statement – Works Approval W4489/2008/1 Mesa A – Warramboo Iron Ore Project 9 October 2009" (document reference RTIO-HSE-0073427), such that iron ore product conveyed on CV-101 is maintained in a moist condition.	Not shown
Sludge hardstand area or drying bed	• must have a hydraulic conductivity of equal to or less than 1 x 10^{-9} metres per second; and • must be bunded to enable the containment and evaporation or recovery of any liquid matter.	Not shown
Tailings Storage Facility (TSF)1 and TSF2	• TSF1: 0.5 m freeboard must be maintained between the operating pond level and the spillway level during normal operations with inflows of excess floodwater, including the 1:100 year 72-hour rainfall event, managed by spillway transfer to Pit 4; • TSF2: freeboard must be maintained and operated to adequately store the 1:100 year 72-hour rainfall event (freeboard of 1.5 m to the emergency spillway level); • maintain and operate the decant pumping system in TSF1; and • continuous volume of tailings discharged and decant water recovery recorded.	As shown in Schedule 1, Figures 2, 7 and 12
Dewatering pipeline and discharge point	• inspect the discharge outlet, when discharging, for excessive scouring and make good repairs where required and access permitting; and • only discharge pit water from operational pit, no tailings decant is to be discharged to Warramboo Creek.	As shown Schedule 1, Figure 6

Emissions and discharges

4. The licence holder must ensure that the emissions specified in Table 3, are discharged only at the corresponding discharge point location.

Table 3: Authorised discharge points

Emission	Discharge point and location
Mine dewatering discharge	As shown in Schedule 1, Figure 6 'Discharge Point'.
Treated sewage for irrigation purposes	As shown in Schedule 1, Figure 5 'Irrigation Sprayfield 1 and Irrigation Sprayfield 2'.
Tailings to TSF1 and TSF2	TSF1 via one or more discharge points from spigots located around the pit perimeter. As shown in Schedule 1, Figure 8 'TSF1 spigot locations and supporting infrastructure' and 9 'TSF1 existing and indicative spigot locations at Warramboo'.
	TSF2 via one or more discharge points from spigots located around the pit perimeter. As shown in Schedule 1, Figure 8 'TSF1 spigot locations and supporting infrastructure'.

5. 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 7.

Table 4: Emission and discharge limits

Discharge point	Parameter	Limit
Warramboo Creek discharge point	Surplus mine dewater	7,000,000 tonnes per annual period
	Total Recoverable Hydrocarbons	30 milligrams per litre (mg/L)
WWTP1 and WWTP2	Total Phosphorus (mg/L)	120 kilograms per hectare (kg/ha)
	Total Nitrogen (mg/L)	480 kg/ha

6. The licence holder must ensure that the waste types specified in Table 5 are only subjected to the corresponding process(es), subject to the corresponding process limits and/or specifications.

Table 5: Waste processing

Waste type[1]	Process(es)	Process limits and/or specifications[2,3]
Sewage	Biological, physical, and chemical treatment	WWTP1 with a maximum capacity to treat 155 cubic metres per day (m^3/day) WWTP2 with a maximum capacity to treat 186 m^3/day
Sludge and biosolids	Storage and disposal	• immediately removed offsite or stored onsite within a hardstand area or drying bed. • in accordance with the *Western Australian guidelines for biosolids management* or to a licensed or registered landfill facility.
Clean Fill Inert Waste Type 1 (including conveyor belts, screen mats, concrete rubble and steel products) Inert Waste Type 2 (including tyres and plastics) Putrescible waste (wooden packaging and pallets only)	Disposal of waste by landfilling	**Waste Dump landfills** Constructed and maintained to the following requirements: • Located within the prescribed premises boundary (as depicted in Schedule 1, Figure 1). • Located no less than 500 m from the Robe River and Warramboo Creek. • Located no less than 100 m from any perennial or permanent watercourse. • Located so that the vertical distance between the waste and the highest seasonal and expected post mining ground water level is no less than 3 m. • Include surface water management structures to divert surface water flows away from the landfill. • Include additional surface water management structures within the landfill to retain any surface water that has come into contact with waste. • A sign at the entrance which clearly defines what waste is accepted onto the landfill. • Location recorded on internal GIS mapping system. Managed and operated so that: • Waste type and volumes disposed to the Waste Dump Landfills to be recorded. • Waste is covered on an ad-hoc basic when required, to at least 200 mm at final landform design.

Waste type[1]	Process(es)	Process limits and/or specifications[2,3]
Clean Fill Inert Waste Type 1 Inert Waste Type 2 Putrescible waste Special Waste Type 1 Special Waste Type 2 Other waste (such as uncontaminated fill) that complies with the Class II waste acceptance criteria as defined in the Landfill Definitions	Disposal of waste by landfilling	**Putrescible landfills** Constructed and maintained to the following requirements: • Located within the prescribed premises boundary (as depicted in Schedule 1, Figure 1). • Located no less than 500 m from the Robe River and Warramboo Creek. • Located no less than 100 m from any other perennial or permanent watercourse. • Located so that the vertical distance between the waste and the highest seasonal and expected post mining ground water level is no less than 10 m. • Include surface water management structures to divert surface water flows away from the landfill. • Include additional surface water management structures within the landfill to retain any surface water that has come into contact with waste. • Firebreak at least 3 m in width around the perimeter of the landfill. • Fenced to minimise windblown waste. • Gated and locked with a sign which clearly defines what waste is accepted onto the landfill. • Location recorded on internal GIS mapping system. Managed and operated to the following requirements: • Waste type and volumes disposed to the putrescible landfills to be recorded. • Tipping area not greater than 30 m in length and 2 m above ground level. • Special Wastes Types 1 and 2 disposed of within a dedicated trench, the location of disposed wastes is recorded, and the waste is immediately covered with a minimum depth of 300 mm of inert and incombustible material. • Putrescible waste to be covered weekly with clean inert and incombustible material to at least 200 mm so that no waste is left exposed (including at final landform design).

Note 1: As defined by the Landfill Waste Classification and Waste Definitions (As amended December 2009).
Note 2: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.
Note 3: Additional requirements for the acceptance and landfilling of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

Monitoring

7. The licence holder must monitor emissions in accordance with the requirements specified in Schedule 3, Table 10, compare against ANZG 2018 DGVs, baseline data and previous monitoring results and record the results of all such monitoring.

8. All sample analysis must be undertaken by laboratories with current NATA accreditation for the relevant parameters, unless otherwise specified in condition 7.

9. The licence holder must undertake a dust monitoring programme at locations depicted in Schedule 1, Figure 11 for the purpose of determining impacts of dust generated from within the premises. The programme shall incorporate:

(a) three PM_{10} E-sampler dust monitors and six Depositional Dust Gauges installed in accordance with Australian Standard 3580 (1.1:2007 - Guide to siting air monitoring equipment);

(b) total deposition shall be monitored using the depositional dust gauges referred to in part (a) of this Condition as per Australian Standard 3580 (10.1:2003 - Determination of particulate matter – Deposited matter – Gravimetric method); and

(c) dust monitors and gauges required under parts (a) and (b) of this Condition shall be sited in order to allow comparison of results to assess dust emissions from the premises at the sandsheet community and background levels of particulate matter.

10. The licence holder must undertake monitoring of the water balance for TSF1 and TSF2 each monthly period (when depositing tailings), 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.

nspections

11. The licence holder must conduct visual inspections of the infrastructure during operations at the frequency specified in Table 6.

Table 6: Inspections of infrastructure

Infrastructure (refer to Schedule 1 maps)	Type of inspection	Frequency
Dewatering pipelines	Integrity check / loss of containment	monthly
Tailings delivery pipelines		daily
Decant water discharge pipelines		daily
TSF1 freeboard	To confirm required freeboard capacity is available	daily
TSF2 Process Water Dam		daily

Infrastructure (refer to Schedule 1 maps)	Type of inspection	Frequency
Decant pond location	To confirm size	daily

Specified actions

12. The licence holder must provide to the CEO a report by 30 November 2024 on the groundwater environment and the management of observed concentration exceedances of monitored parameters, which must include:

(a) a ground-based geophysical investigation using electrical or electromagnetic methods to determine the spatial extent and depth of elevated groundwater salinity anomaly that is associated with elevated concentrations of manganese, cobalt, and nickel. Investigation undertaken on transects near the southern toe of TSF1 where elevated concentrations were measured in monitoring bore MB21WAR0003;

(b) a drilling investigation to install additional monitoring bores on sites that have been identified from the ground-based geophysical data; and

(c) investigation of the nitrate concentrations in groundwater to determine whether the concentrations in the area exceed 15 mg/L due to natural origin or as a result of groundwater contamination from the widespread use of explosives for the mining in the area.

13. The licence holder must submit to the CEO a water quality management plan by 30 November 2024, where 3 (three) consecutive monitoring events indicate exceedances of *contaminants of concern* in comparison to ANZECC (2000) (for cobalt and nickel only) and ANZG (2018) DGVs or SSGVs. The management plan must include:

(a) site specific limit values where there are no ANZECC (2000) and ANZG (2018) DGVs;

(b) action response plan to address exceedances;

(c) management actions including, but not limited to seepage recovery measures, geophysical investigations;

(d) treatment option(s), where required; and

(e) timeframes for implementation.

Records and reporting

14. The licence holder must maintain records of the moisture content as determined by moisture analysers MN-101 and MN-102 described in for the dust control systems in condition 9 (c).

15. 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.

16. 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 30 April after the end of that annual period an Annual Audit Compliance Report in the approved form.

17. The licence holder must submit to the CEO by no later than 30 April each year, an Annual Environmental Report for the preceding annual period for the conditions listed in Table 7, and which provides information in accordance with the corresponding requirement set out in Table 7.

Table 7: Annual Environmental Report

Condition	Requirement
Summary	• product produced • tailings deposited • tailings density (solid vs water content) • volume of mine dewater discharge
Condition 6	• map and GIS coordinates of the waste dump and putrescible landfills within the prescribed premises boundary; and • record of waste type and total volumes of waste disposed in all landfill facilities.
Condition 7 WWTP monitoring	The results to be provided to the CEO must include, but need not be limited to the following: • the dates at which monitoring was undertaken for each location; • the raw monitoring data from each location, for each parameter in a tabulated form highlighting exceedances; and • include an assessment and comparison against the NWQMS 1997 and previous monitoring results.
Condition 7 Warramboo Creek discharge point	The results to be provided to the CEO must include, but need not be limited to the following: • the dates at which monitoring was undertaken; • the raw monitoring data, for each parameter in a tabulated form highlighting exceedances; and • include an assessment and comparison against the ANZG 2018 and previous monitoring results.
Condition 9 Dust monitoring	• provide the results as monthly averages of the dust monitoring programme; and • include a comparison of results to assess dust emissions from the Premises at the sandsheet community and background levels of particulate matter.

Condition	Requirement
Condition 7 Groundwater monitoring	The results to be provided to the CEO must include, but need not be limited to the following: • the dates at which monitoring was undertaken; • the raw monitoring data, for each parameter in a tabulated form; • cumulative time-series graphs in Microsoft Excel or similar format for each monitoring bore for standing water level in mbgl and those parameters resulting in exceedances; and • include an assessment and comparison against the ANZECC 2000 (for cobalt and nickel parameters only) and ANZG 2018, baseline data and previous monitoring results.
Condition 10 Water balance	• provide the results of the monthly water balance monitoring tabulated form and as a cumulative time-series graphs in Microsoft Excel or similar format for each monitoring parameter; • provide a summary of the water balance results; and • revise and calibrate the water balance where there is a concern of seepage losses and revise the decant operations for the management of water levels.

18. 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) any maintenance of infrastructure that is performed in the course of complying with conditions 2 and 3 of this licence;

(c) monitoring programmes undertaken in accordance with conditions 7 and 9 of this licence; and

(d) complaints received under condition 15 of this licence.

19. The books specified under condition 18 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 8 have the meanings defined.

Table 8: Definitions

Term	Definition
ACN	Australian Company Number
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)
annual period	a 12-month period commencing from 1 January until 31 December in the same year
ANZECC 2000	means the most recent version and relevant parts of the Australia and New Zealand Environment Conservation Council guidelines for fresh and marine water quality Volume 1 – 3 (Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand)
ANZG 2018	means the most recent version and relevant parts of the Australian and New Zealand Governments guidelines for fresh and marine water quality (Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia) Available at www.waterquality.gov.au/anz-guidelines
AS/NZS 5667.1	means the most recent version and the relevant parts of 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
AS/NZS 5667.6	means the most recent version and the relevant parts of the Australian Standard AS/NZS 5667.6 Water Quality - Sampling - Guidance on sampling of rivers and streams
AS/NZS 5667.10	means the most recent version and the relevant parts of the Australian Standard AS/NZS 5667.10 Water Quality - Sampling - Guidance on sampling of waste waters
AS/NZS 5667.11	means the most recent version and the relevant parts of the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling of groundwaters
Australian Standard 3580	means the most recent version and the relevant parts of the Australian and New Zealand series of guidance standards on methods for sampling and analysis of ambient air
books	has the same meaning given to that term under the EP Act

Term	Definition
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
cfu/100ml	means colony-forming units per 100 millilitres
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
DGV	means default guideline value
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)
Inert Waste Type 1	has the meaning defined in Landfill Definitions
Inert Waste Type 2	has the meaning defined in Landfill Definitions
kg/ha	means kilograms per hectare
Landfill Definitions	means the document titled "Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)" 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/s	means metres per second
mg/L	means milligrams per litre
m^3/day	means cubic metres per day
NATA	means National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis

Term	Definition
NWQMS	means National Water Quality Management Strategy, Australian Guidelines for Sewerage Systems – Effluent Management (Agriculture and Resource Management Council of Australia and New Zealand and New Zealand Environment and Conservation Council) 1997
OPF	means Ore Processing Facility
pH	means pH unit
PM_{10}	means airborne particulate matter (dust) with an equivalent aerodynamic diameter of 10 micrometres (10µm) or less
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	has the meaning defined in Landfill Definitions
RL	means Reference Level
sandsheet community	means the 'Sand sheet vegetation (Robe Valley)' threatened ecological community listed by the Threatened Ecological Communities (TEC) Scientific Committee
Special Waste Type 1	has the meaning defined in Landfill Definitions
Special Waste Type 2	has the meaning defined in Landfill Definitions
TSF	means Tailings Storage Facility, which is made up of TSF1 and TSF2
Uncontaminated fill	has the meaning defined in Landfill Definitions
µS/cm	means microsiemens per centimetre
waste	has the same meaning given to that term under the EP Act
Western Australian guidelines for biosolids management	means the document titled *Western Australian guidelines for biosolids management, December 2012* published by the Department of Environment and Conservation as amended from time to time
WWTP	means Wastewater Treatment Plant

END OF CONDITIONS

Schedule 1: Maps

Premises map

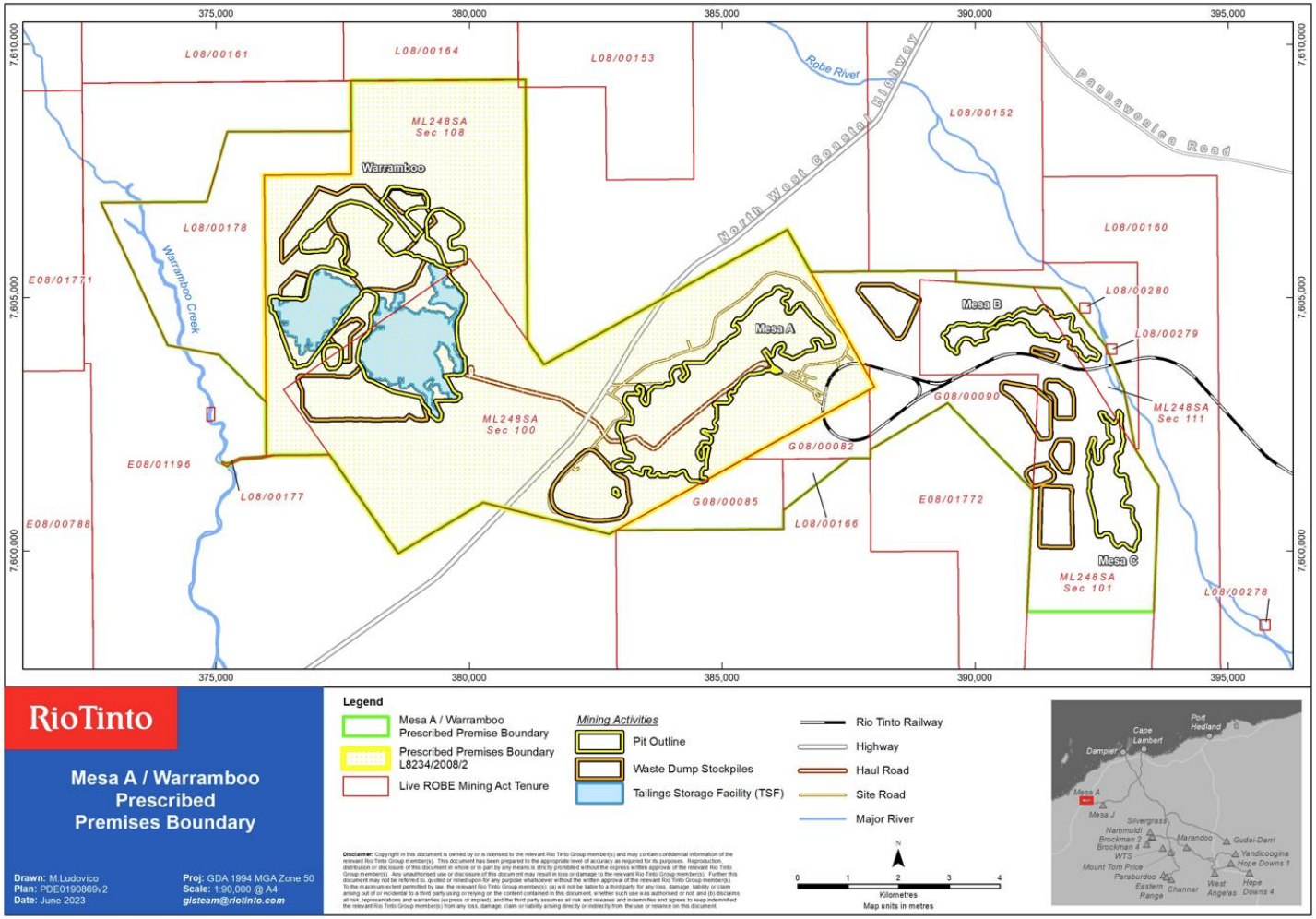


Figure 1: Map of the boundary of the prescribed premises

Infrastructure

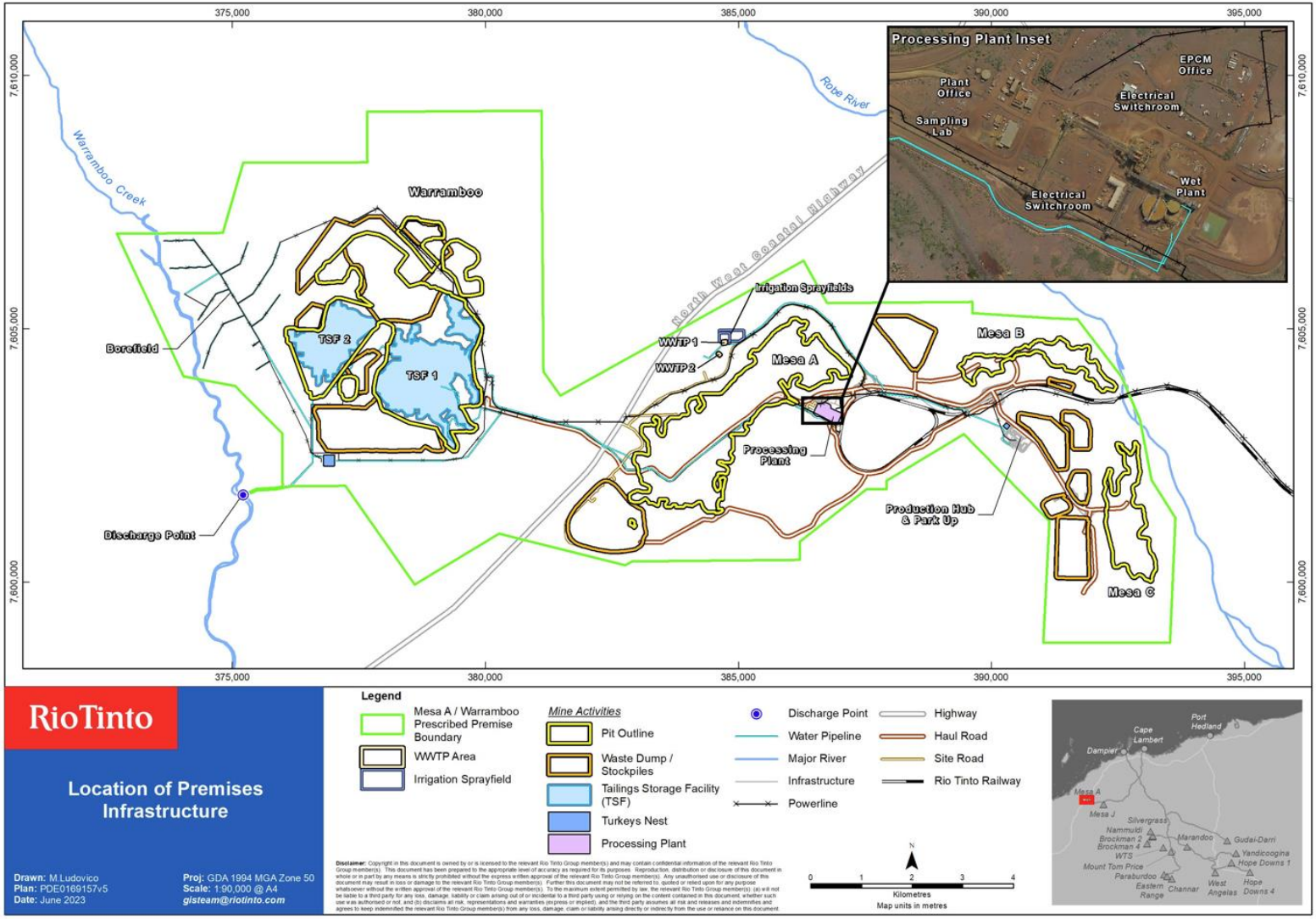


Figure 2: Location of Premises Infrastructure

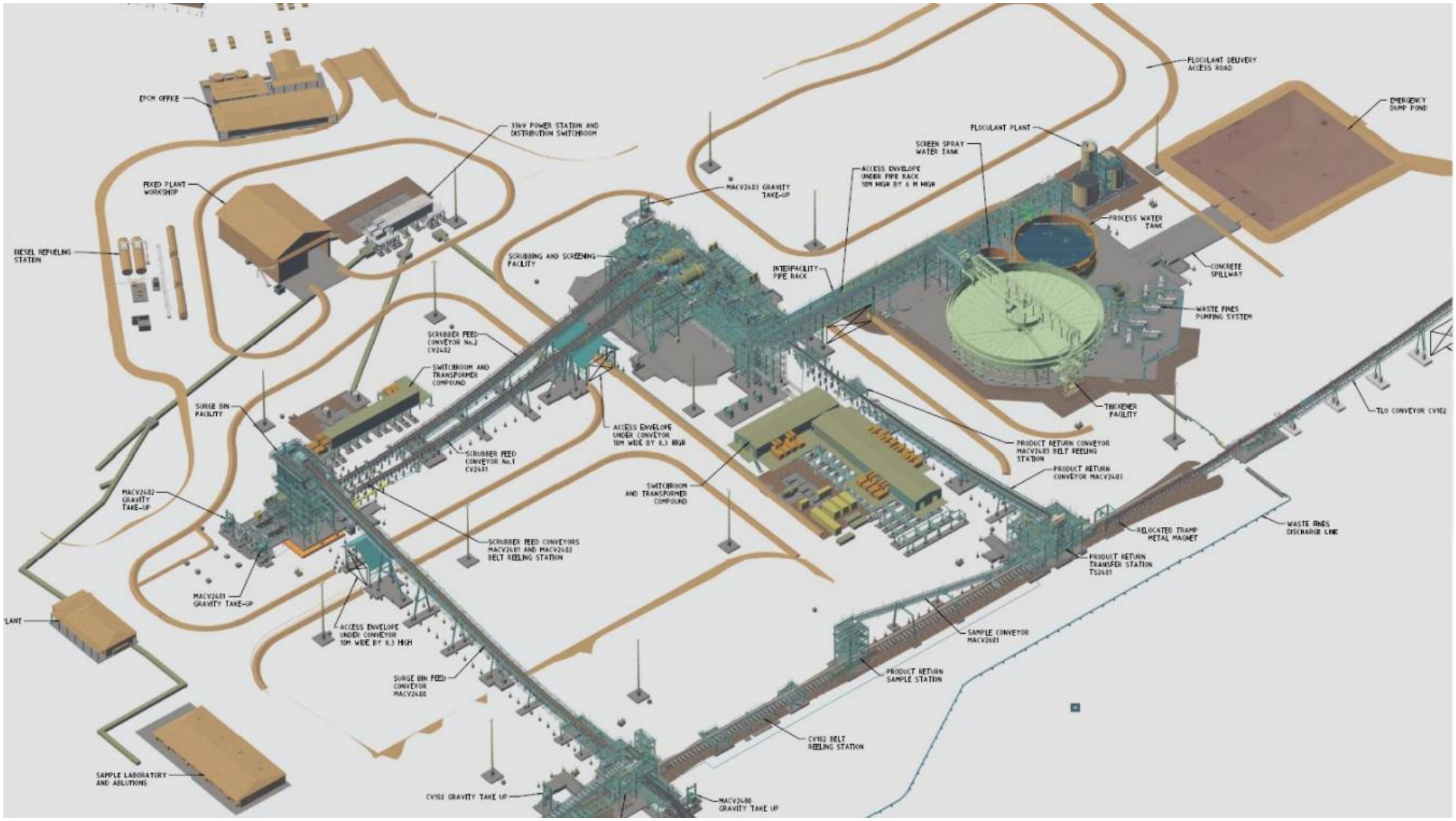


Figure 3: OPF infrastructure

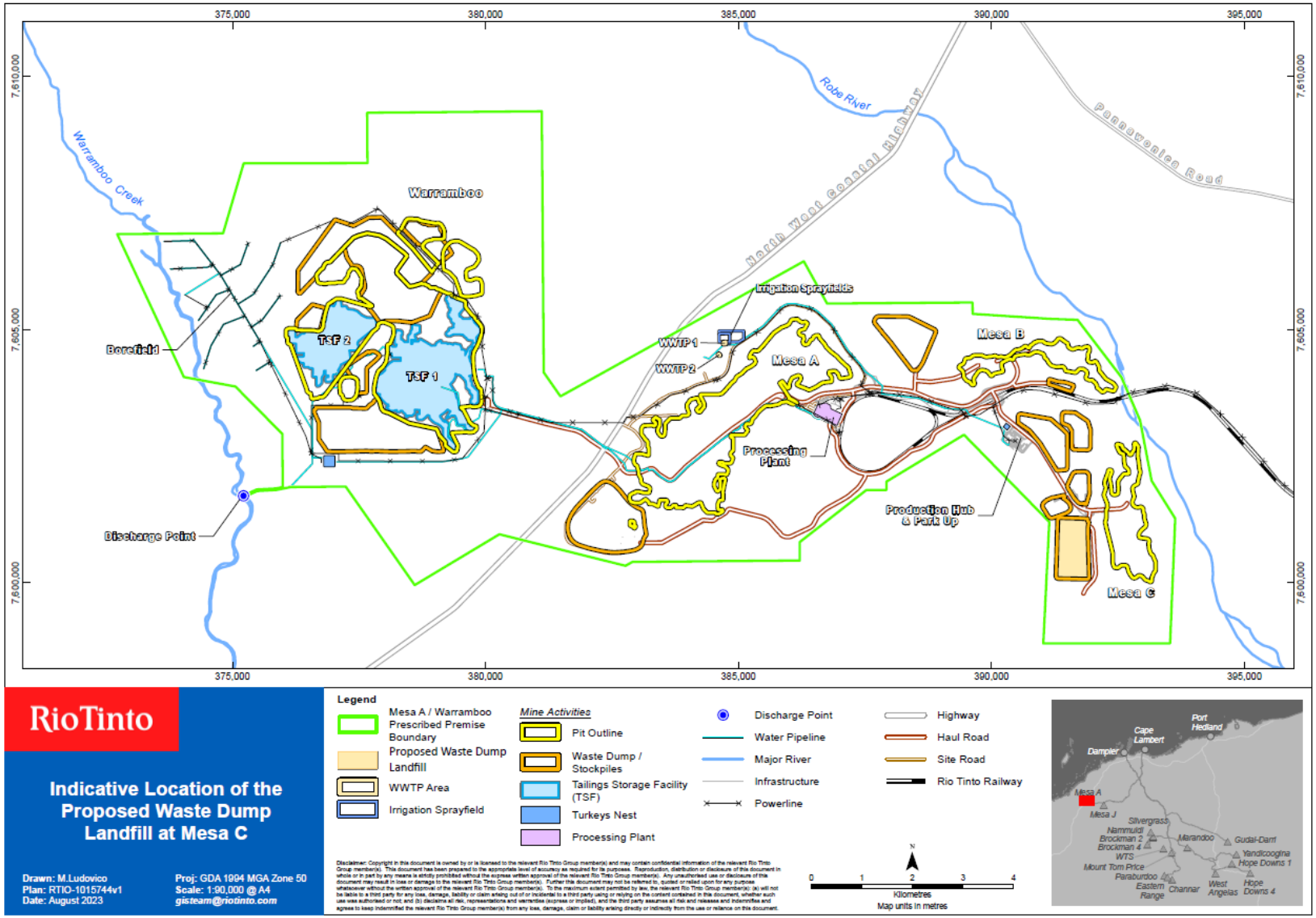


Figure 4: Location of the Mesa C Waste Dump Landfill

Emission points and monitoring

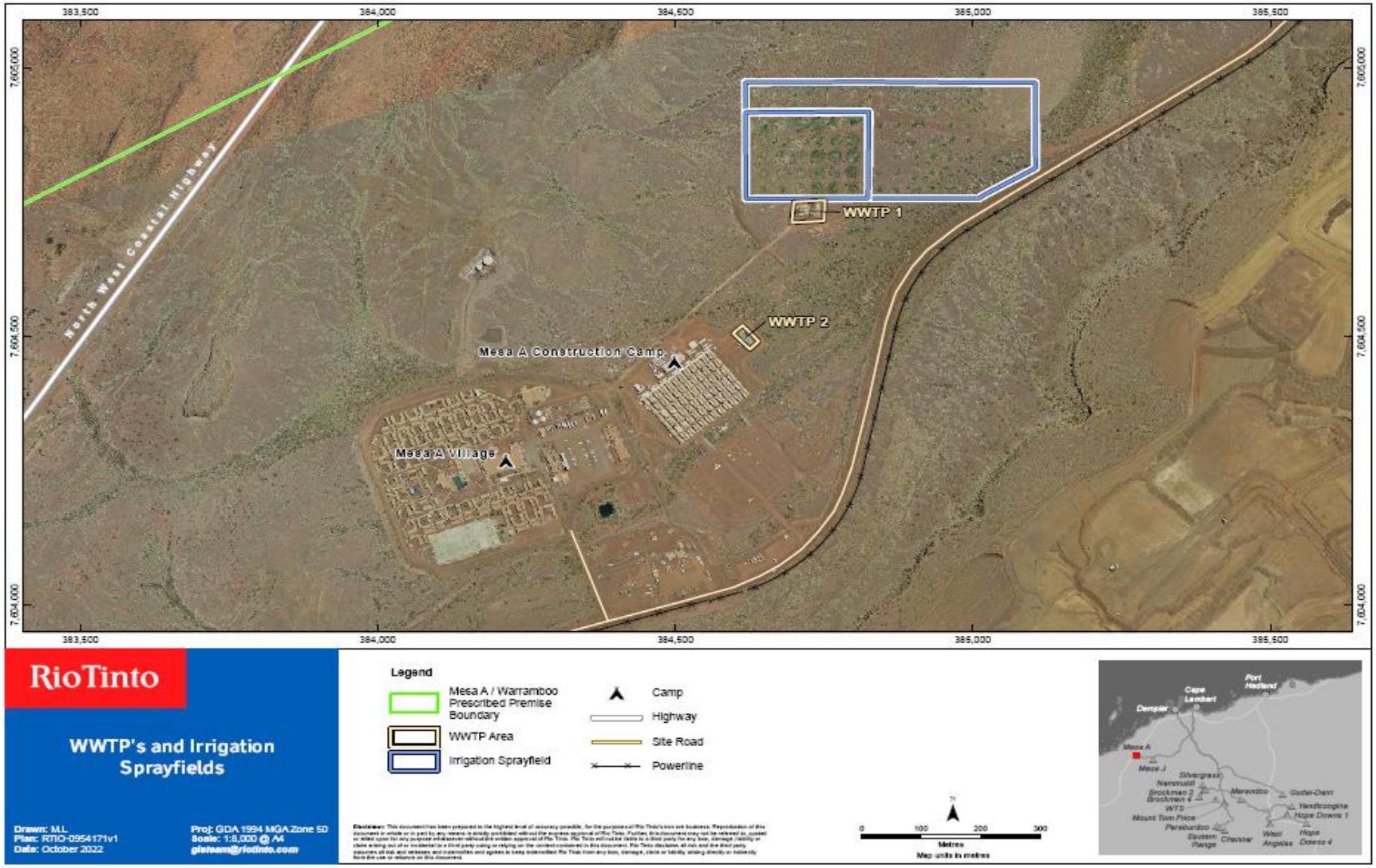


Figure 5: WWTP's and Irrigation Sprayfield

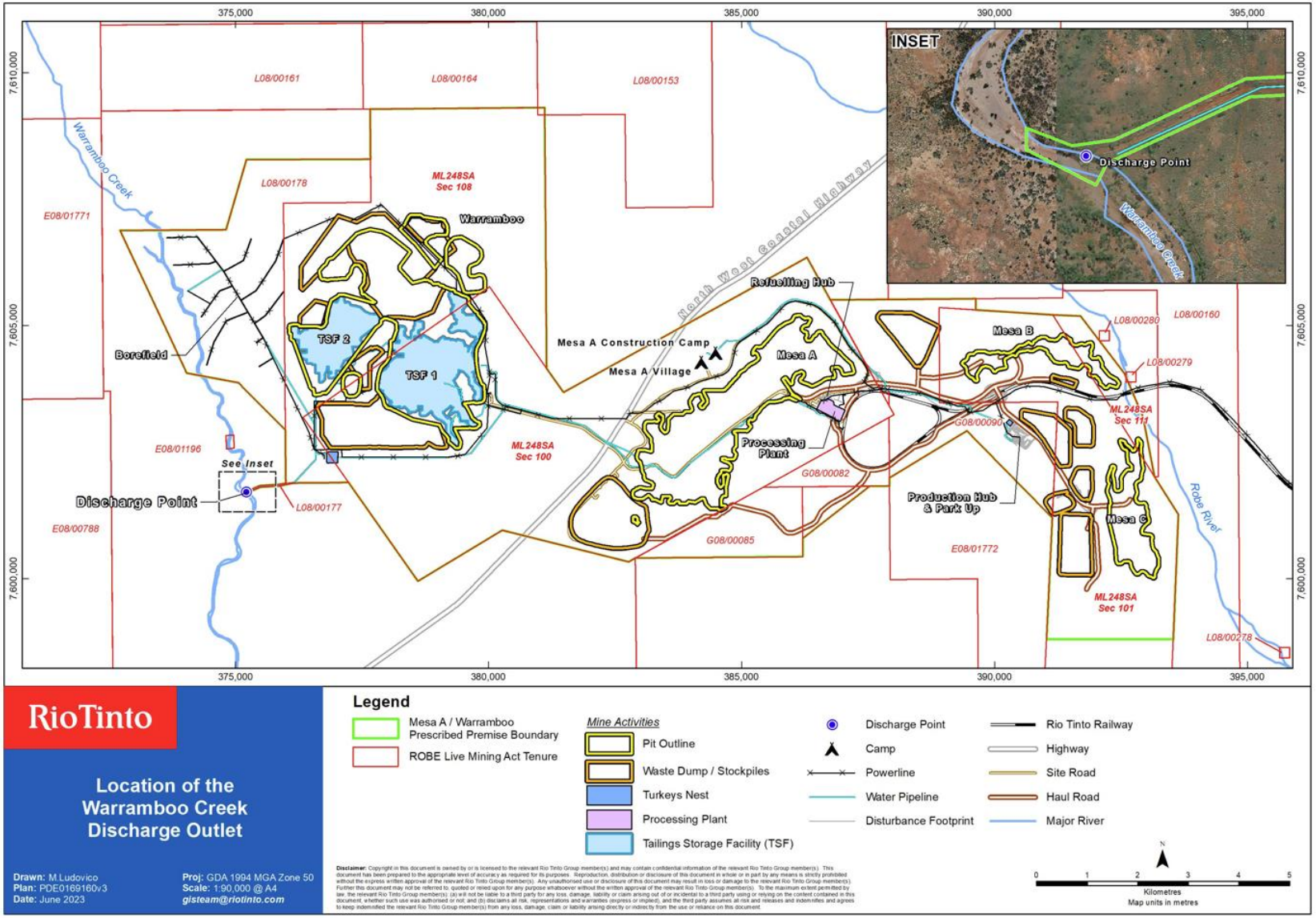


Figure 6: Warramboo Creek discharge point

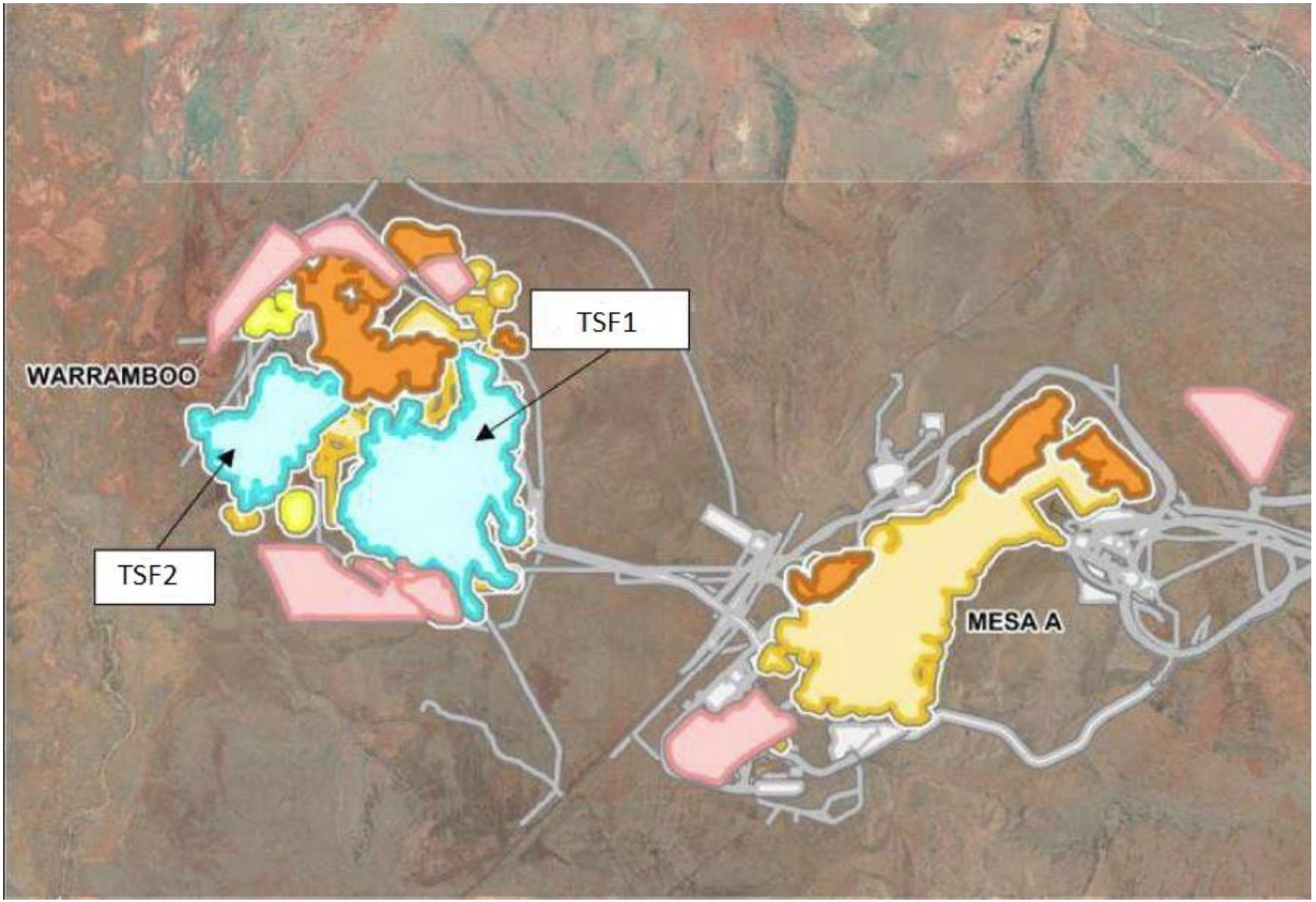


Figure 7: Conceptual site plan of the TSF at Warramboo

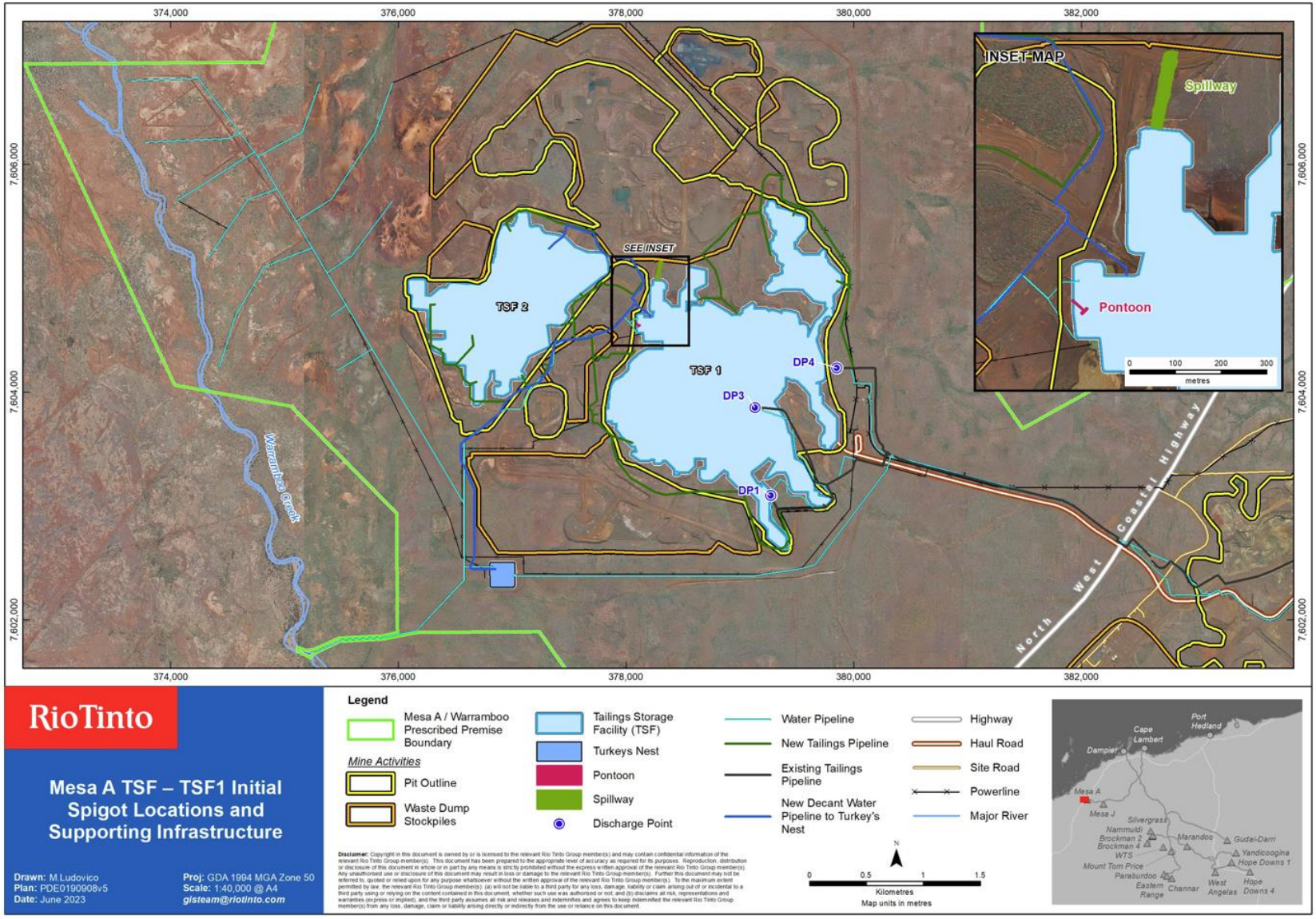
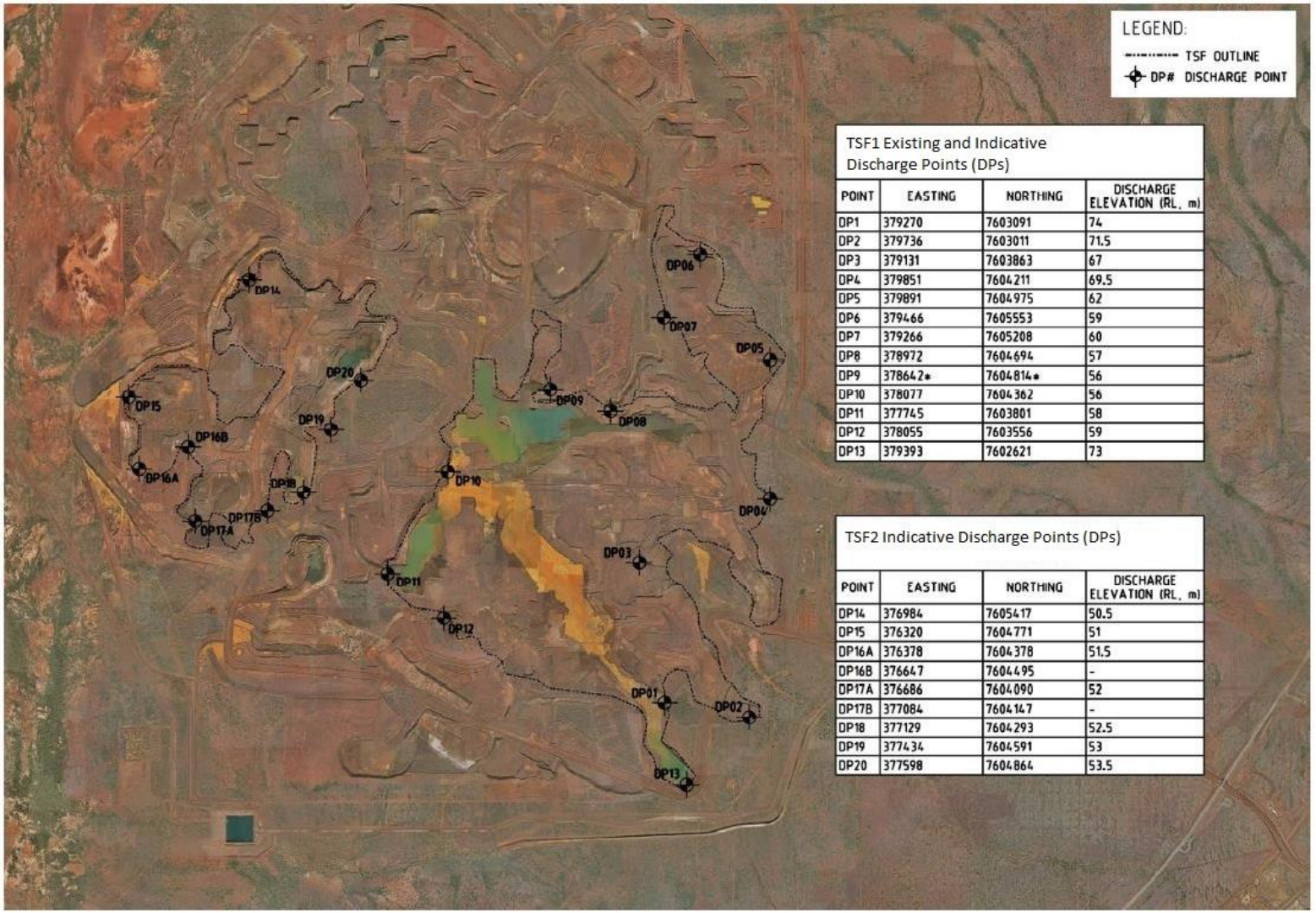


Figure 8: TSF1 spigot locations and supporting infrastructure



TSF1 Existing and Indicative Discharge Points (DPs)

POINT	EASTING	NORTHING	DISCHARGE ELEVATION (RL, m)
DP1	379270	7603091	74
DP2	379736	7603011	71.5
DP3	379131	7603863	67
DP4	379851	7604211	69.5
DP5	379891	7604975	62
DP6	379466	7605553	59
DP7	379266	7605208	60
DP8	378972	7604694	57
DP9	378642*	7604814*	56
DP10	378077	7604362	56
DP11	377745	7603801	58
DP12	378055	7603556	59
DP13	379393	7602621	73

TSF2 Indicative Discharge Points (DPs)

POINT	EASTING	NORTHING	DISCHARGE ELEVATION (RL, m)
DP14	376984	7605417	50.5
DP15	376320	7604771	51
DP16A	376378	7604378	51.5
DP16B	376647	7604495	-
DP17A	376686	7604090	52
DP17B	377084	7604147	-
DP18	377129	7604293	52.5
DP19	377434	7604591	53
DP20	377598	7604864	53.5

Figure 9: TSF and existing and indicative[1] spigot locations at Warramboo

Note 1: The figure provides the indicative spigot locations, and these may be subject to relocation to optimizes operation of the facility.

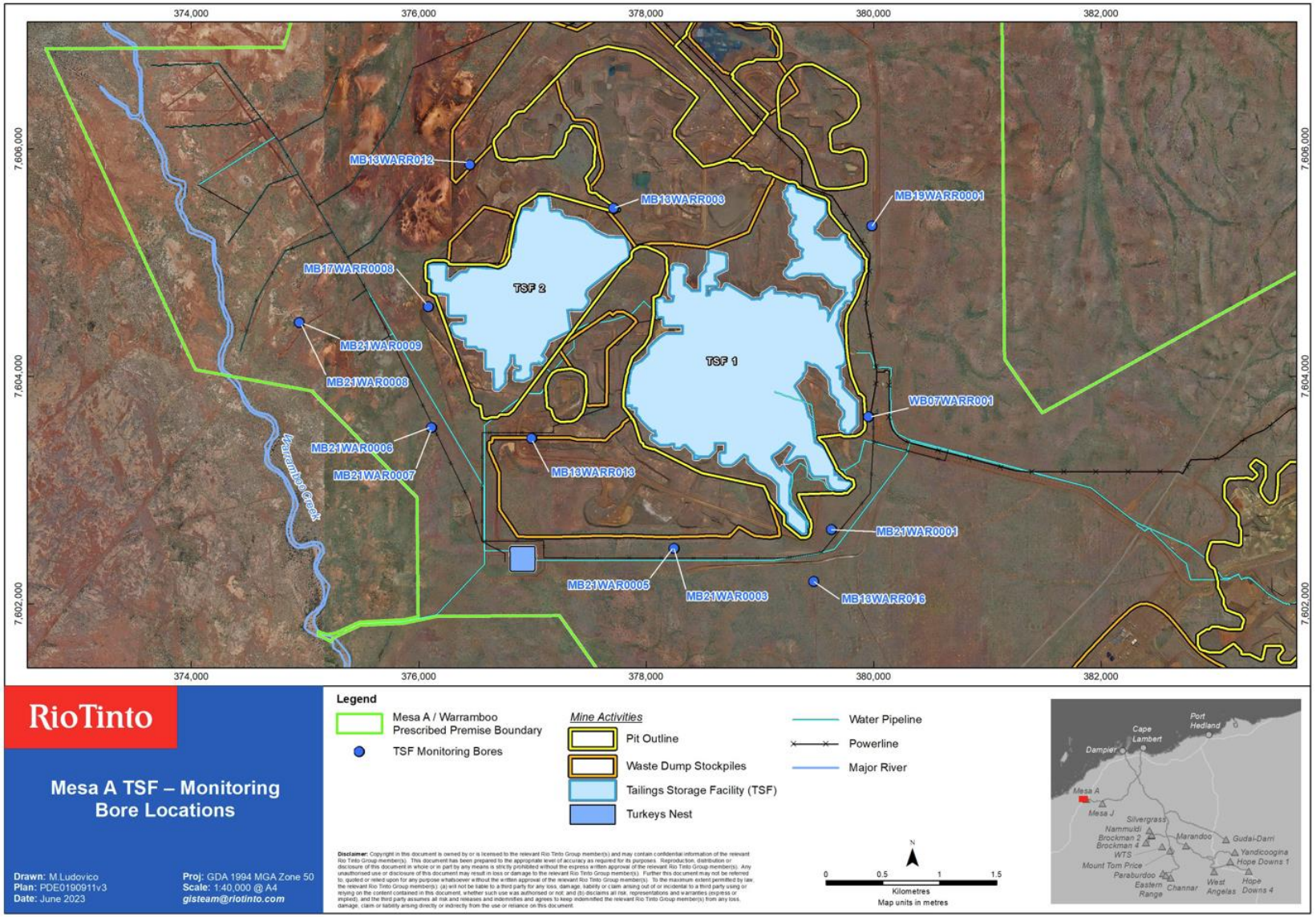


Figure 10: TSF groundwater monitoring bores

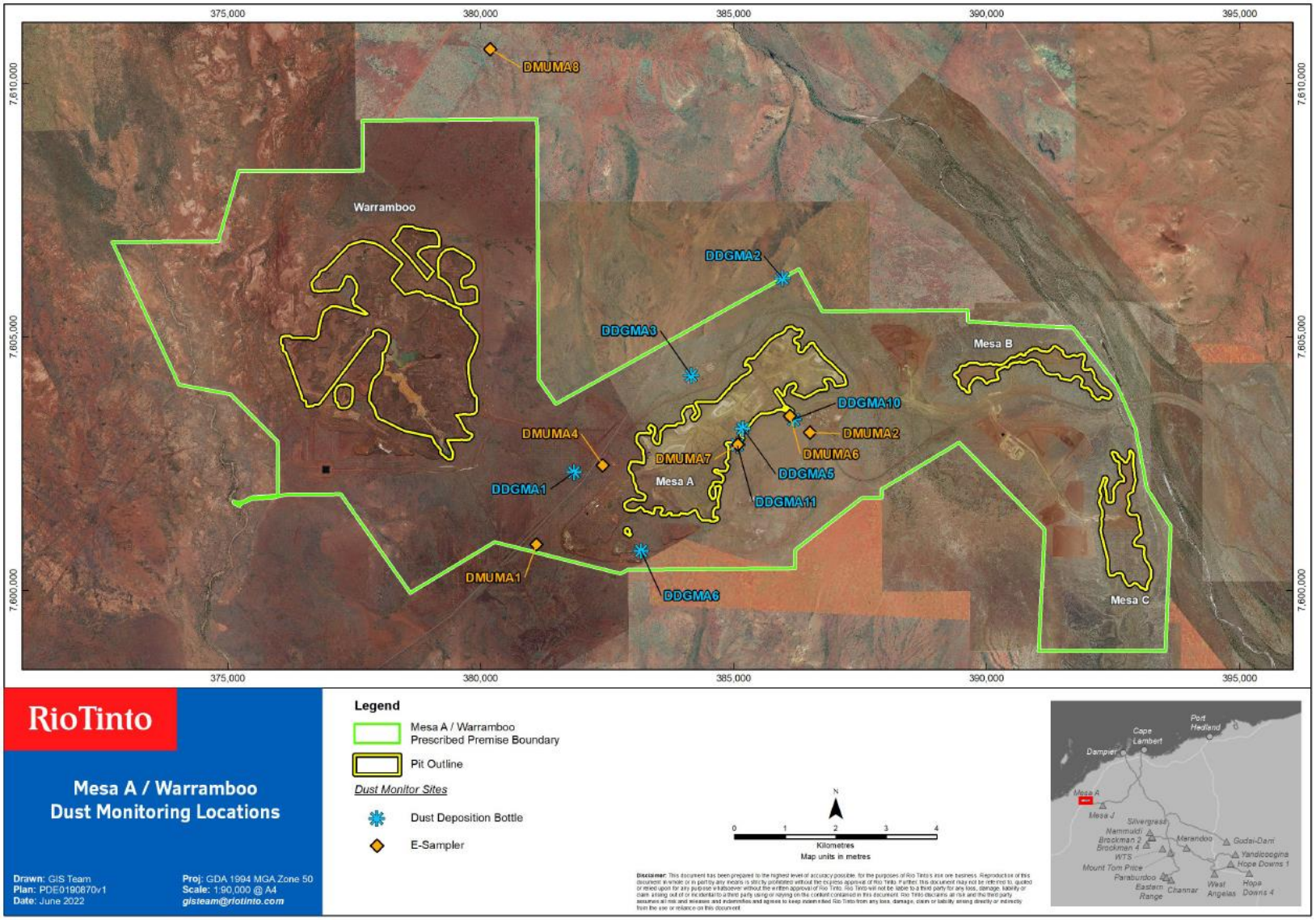


Figure 11: Dust monitoring locations

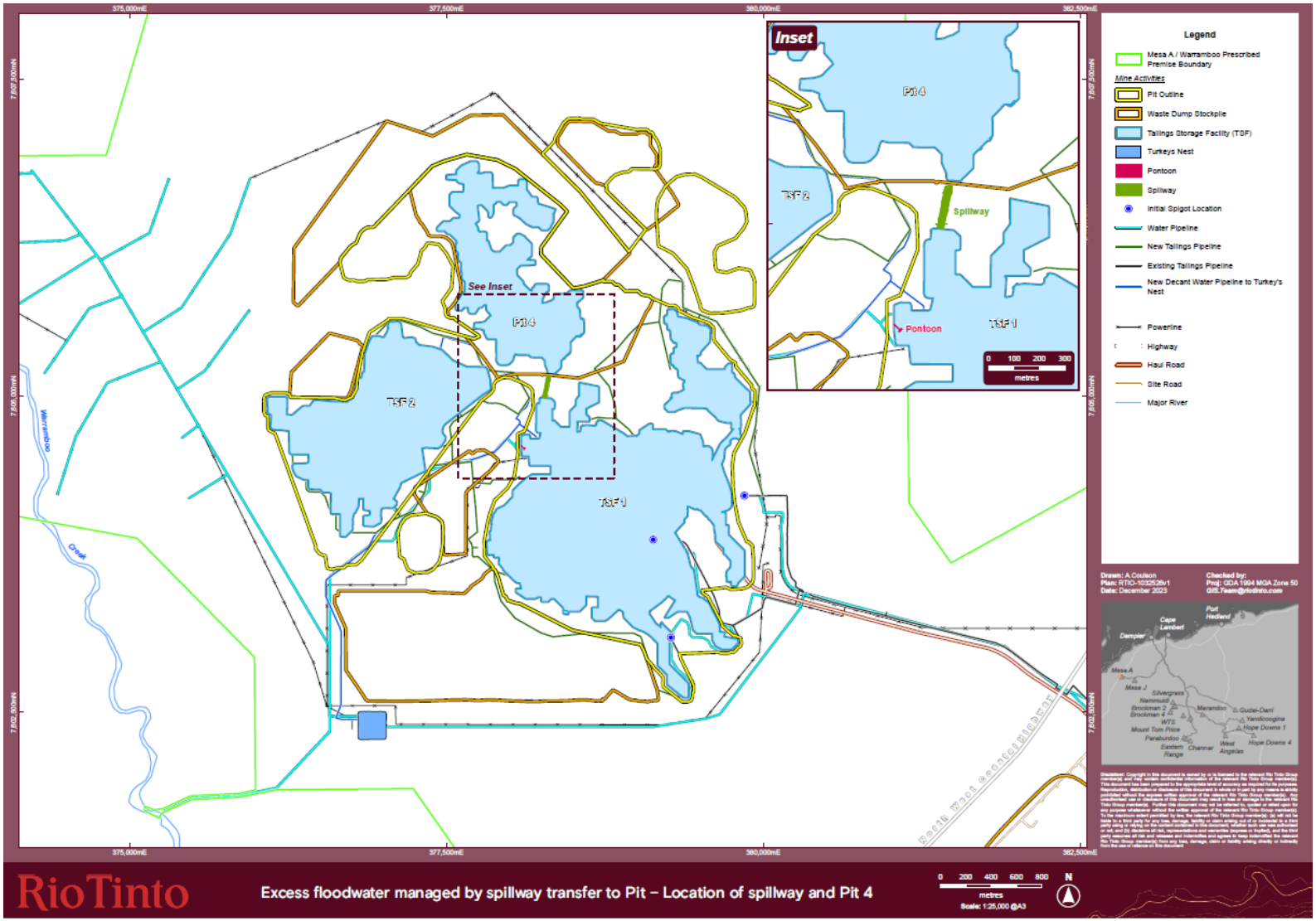


Figure 12: Spillway from TSF1 to Pit 4

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 9.

Table 9: Premises boundary coordinates

	Easting	Northing
1.	387925.8937	7601997.895
2.	387927.0479	7601832.958
3.	387528.2055	7601830.168
4.	386209.8852	7600800.636
5.	386212.5158	7600438.91
6.	382902.6964	7600411.058
7.	382766.5572	7600335.563
8.	380273.904	7600958.228
9.	378603.3227	7599953.19
10.	377238.1727	7601900.073
11.	376161.1518	7601891.784
12.	376161.2007	7601891.794
13.	376161.1429	7601891.784
14.	376161.1518	7601891.784
15.	375871.3182	7601832.866
16.	375487.5902	7601813.289
17.	375250.6626	7601703.511
18.	375232.5217	7601667.828
19.	375117.9377	7601726.386
20.	375117.8718	7601762.039
21.	375193.3211	7601732.735
22.	375262.5696	7601742.133
23.	375480.2185	7601842.903
24.	375867.5665	7601862.619
25.	375993.6948	7601890.494

	Easting	Northing
26.	375985.5975	7602937.71
27.	375058.8708	7603876.735
28.	374038.3856	7604063.713
29.	372722.1401	7606883.891
30.	374815.1938	7606900.331
31.	375220.0518	7608282.538
32.	377669.5295	7608289.727
33.	377662.0776	7609284.014
34.	381112.3674	7609309.647
35.	381150.4559	7604156.347
36.	381483.0458	7603681.783
37.	386291.6399	7606348.608
38.	386753.9343	7605514.747
39.	389625.9796	7605534.724
40.	389627.5128	7605310.9
41.	391152.6719	7605212.82
42.	391701.292	7605192.505
43.	392570.3953	7604059.686
44.	392935.9768	7603208.639
45.	393164.4327	7602013.933
46.	393632.718	7601269.245
47.	393532.0855	7598802.354
48.	391027.2697	7598802.356
49.	391143.2253	7601202.859
50.	389457.8901	7602921.587
51.	387925.8937	7601997.895

Schedule 3: Monitoring

The monitoring requirements within the Premises are detailed in Table 10.

Table 10: Emissions and discharge monitoring

Monitoring location	Parameter	Limit	Unit	Frequency	Averaging period	Method (Sampling and Analysis)
WWTP1 and WWTP2 As shown in Schedule 1, Figure 5	WWTP1 and WWTP2	-	m^3	Continuous	24 hours	Flow metering device
	Total Phosphorus	-	mg/L	Quarterly	Annual	AS/NZS 5667.1 AS/NZS 5667.10
	Total Nitrogen	-	mg/L			
	Biochemical Oxygen Demand	-	mg/L	Quarterly	Spot sample	
	Total Suspended Solids	-	mg/L			
	pH[1]	-	pH units			
	E.coli	-	cfu/100mL			
	Residual Chlorine	-	mg/L			
Warramboo Creek discharge point As depicted in Schedule 1, Figure 6	Volume	-	kL	Continuous	24 hours	Flow metering device
	Electrical Conductivity (EC)[1]	-	µS/cm	Quarterly	Spot sample	AS/NZS 5667.1 AS/NZS 5667.6
	pH[1]	-	pH units			
	Total Hardness as $CaCO_3$	-	mg/L			
	Total Dissolved Solids (TDS)	-	mg/L			
	<u>Ions</u> Calcium Chloride Fluoride Potassium Magnesium Sodium Sulfate Carbonate <u>Nutrients</u> Total Phosphorus Total Nitrogen Nitrite Nitrate Ammonium <u>Metals</u> Aluminium	-	mg/L			

Monitoring location	Parameter	Limit	Unit	Frequency	Averaging period	Method (Sampling and Analysis)
	Arsenic Boron Cadmium Chromium Copper Iron Mercury Manganese Nickel Lead Selenium Zinc					
TSF1 and TSF2 monitoring bores MB13WARR003 MB13WARR012 MB13WARR013 MB13WARR016 MB17WARR0008 MB19WARR0001 MB21WAR0001 (WB07WAR001)[2] MB21WAR0003 MB21WAR0005 MB21WAR0006 MB21WAR0007 MB21WAR0008 MB21WAR0009 As shown in Schedule 1, Figure 10	Standing water level	-	mbgl	Quarterly	Spot sample	AS/NZS 5667.1 and AS/NZS 5667.11 In field non-NATA accredited analysis permitted
	pH[1]	-	pH units			
	EC[1]	-	µS/cm			
	Total Hardness as $CaCO_3$	-	mg/L			AS/NZS 5667.1 and AS/NZS 5667.11 By a NATA accredited laboratory
	Dissolved Oxygen (DO)	-				
	TDS	-				
	<u>Ions</u> Calcium	-				
	Chloride	-				
	Fluoride	-				
	Potassium	-				
	Magnesium	-				
	Sodium	-				
	Sulphate	-				
	<u>Nutrients</u> Total Phosphorus	-				
	Total Nitrogen	-				
	Nitrogen as NO_2	-				
	Nitrogen as NO_3	25				
	Nitrogen as NH_4	-				
	<u>Metals / Metalloids</u> Aluminium	-				

Monitoring location	Parameter	Limit	Unit	Frequency	Averaging period	Method (Sampling and Analysis)
	Antimony	-				
	Arsenic	-				
	Boron	-				
	Barium	-				
	Cadmium	-				
	Chromium	-				
	Cobalt	0.05				
	Copper	-				
	Iron	-				
	Lead	-				
	Mercury	-				
	Manganese	-				
	Molybdenum	-				
	Nickel	0.2				
	Selenium	-				
	Silicon	-				
	Silver	-				
	Tin	-				
	Zinc	-				
	Organic compound Acrylamide	-				
Tailings (supernatant and fines) from processing plant As shown in Schedule 1, Figure 2	Volume	-	kL	Continuous	24 hours	Flow metering device
	pH[1]	-	pH units	Quarterly	Spot sample	AS/NZS 5667.1 and AS/NZS 5667.11 In field non-NATA accredited analysis permitted
	EC[1]	-	µS/cm			
	TDS	-	mg/L			

Monitoring location	Parameter	Limit	Unit	Frequency	Averaging period	Method (Sampling and Analysis)
	Total Hardness as $CaCO_3$ <u>Ions</u> Calcium Calcium carbonate Chloride Fluoride Potassium Magnesium Sodium Sulphate <u>Nutrients</u> Total Phosphorus Total Nitrogen Nitrogen as NO_2 Nitrogen as NO_3 Nitrogen as NH_4 <u>Metals / Metalloids</u> Aluminium Antimony Arsenic Boron Barium Cadmium Cobalt Copper Iron Lead Mercury Manganese Molybdenum Nickel Selenium Zinc <u>Organic compound</u> Acrylamide	-				AS/NZS 5667.1 and AS/NZS 5667.11 By a NATA accredited laboratory

Note 1: in-field non-NATA accredited analysis permitted.
Note 2: Alternate monitoring bore WB07WARR001 will be sampled when monitoring bore MB21WAR0001 is dry.

Schedule 4: Infrastructure and equipment

The Primary Activity infrastructure and equipment situated on the Premises are detailed in Table 11.

Table 11: Infrastructure and equipment

Infrastructure and equipment		Infrastructure location
Category 5: Processing or beneficiation of metallic ore		
1	OPF including transfer stations; surge bin facility; scrubber and screening facility and conveyors	At the location shown in Schedule 1, Figure 2 and as depicted in Schedule 1, Figure 3
2	Thickener facility	
3	Flocculant plant	
4	Process water tank	
5	Emergency dump pond	
6	Train load out and stockpiles	Not shown
7	TSF1 and TSF2 including spigots, turkey's nest, and pond pontoon-mounted pump system	As shown in Schedule 1, Figures 2 and 8
8	Tailings delivery pipelines and decant water discharge pipelines from Mesa A to TSF1 and TSF2	As shown in Schedule 1 Figures 8 and 9
Category 6: Mine dewatering		
9	Dewatering discharge point	As shown in Schedule 1, Figure 6 'Discharge Point'
10	Flow meters	Not shown
11	Water conveyance pipelines	Not shown
Category 12: Screening, etc. of material		
12	Mobile crushing and screening equipment	Not shown
Category 54: Sewage facility		
13	WWTP1 and WWTP2	As shown in Schedule 1, Figure 5
14	Irrigation Sprayfields	
Category 64: Class II putrescible landfill site		
15	Mesa C Waste Dump Landfill	As shown in Schedule 1, Figure 4