Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L4328/1989/10
Licence holder	MARBL Lithium Operations Pty Ltd
ACN	637 077 608
Registered business address	20 Walters Drive OSBORNE PARK WA 6017
DWER file number	DER2013/001044-1
Duration	01/10/2013 to 30/09/2033
Date of issue	26/09/2013
Date of amendment	16/09/2024
Premises details	Wodgina Lithium Project M45/49, M45/50, M45/254, M45/353, M45/365, M45/381, M45/382, M45/383, M45/886, M45/887, M45/888, M45/950, M45/923, M45/924, M45/925, M45/949, M45/1188, M45/1252, G45/290, G45/291 and G45/321 MARBLE BAR WA 6760 As depicted in Schedule 1

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	8,750,000 tonnes per annual period
Category 52: Electric power generation	64 MW gas power station
Category 54: Sewage facility	210 cubic metres per day
Category 57: Used tyre storage	500 tyres
Category 64: Class II putrescible landfill site	9,450 tonnes per annual period
Category 85B: Water desalination plant	1.5 gigalitres per annual period

This licence is granted to the Licence Holder, subject to the attached conditions, on 16 September 2024, by:

Jarrod Abrahams
Digitally signed by Jarrod Abrahams
Date: 2024.09.16 14:34:46 +08'00'

MANAGER, RESOURCE INDUSTRIES

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

Licence history

Date	Reference number	Summary of changes
26/09/2013	L4328/1989/10	Licence reissue.
12/12/2013	L4328/1989/10	Licence amendment to amend submission date for Annual Environmental Report.
2/06/2016	L4328/1989/10	Licence amendment for tyre disposal area.
7/02/2017	L4328/1989/10	Licence transferred from Global Advanced Metals Wodgina Pty Ltd to Wodgina Lithium Pty Ltd.
18/08/2017	L4328/1989/10	Amendment Notice 1: To construct a new tyre disposal area and to increase the category 89 capacity from 1,850 tonnes per annum to 3,350 tonnes per annum.
12/03/2018	L4328/1989/10	Amendment Notice 2: Construction and operation of secondary fixed processing plant and 3 mobile crushing and screening plants.
25/01/2019	L4328/1989/10	Amendment Notice 3: Addition of category 52, amendment crushing and screening locations, increase in tyre disposal from 200 to 500 tonnes per annum and expansion of the current disposal facility area. Addition of a surface water monitoring point at the fixed screening plant. Commissioning Plan for the Lithium Beneficiation Plant, TSF3 expansion and Gas Power Station.
10/06/2019	L4328/1989/10	Amendment Notice 4: Extension of operational period of the Temporary 13 MW Diesel Power Station. Inclusion of TSF3 MB Ext to the groundwater monitoring program.
23/10/2019	L4328/1989/10	Amendment Notice 5: Addition of categories 85B, landfill expansion area, 64 MW gas power station and use of reverse osmosis wastewater from Simulation 1 for dust suppression.
26/02/2020	L4328/1989/10	Licence transferred from Wodgina Lithium Pty Ltd to MARBL Lithium Operations Pty Ltd. Licence amended for the consolidation of amendment notices issued for the licence and any other administrative amendments as per section 59(b) of *Environmental Protection Act 1986.* DWER has not revised risk assessment to manage emissions and discharges from prescribed premises categories currently authorised in the licence. The Premises has been placed under Care and Maintenance effective 1 November 2019.
01/07/2022	L4328/1989/10	Licence amendment to: • include infrastructure constructed under W6132/2018/1; • include category 57 for tyre storage; and • expand premises boundary.
21/10/2022	L4328/1989/10	Licence amendment for the operation of a dry stack tailings plant with the disposal of dry stack tailings via co-mingling with mine over-burden waste into the EWL at the Premises.
25/07/2023	L4328/1989/10	Licence amendment for the following: • Expansion of the EWL boundary to align with DMIRS

Date	Reference number	Summary of changes
		Mining Proposal REG ID 113904; • Dry stack tailings to be co-mingled with waste rock within the entire EWL footprint; • Replace the EWL and Tailings Storage Facility 3 (TSF3) groundwater monitoring bores listed in condition 27, Table 12 of Licence L4328/1989/10; and • Extension to the date of the Direct Toxicity Assessment from the 30 April 2023 to 30 April 2024.
14/02/2024	L4328/1989/10	Licence amendment is sought for the following: • Category 5 approved operational area to allow for the mobile crusher operation within the entirety of the prescribed premises boundary; • Category 5 – EWL footprint to match that in the Mining Proposal (REG ID 120114) for the continued disposal of dry stack tailings; • Replacement of Tailings Storage Facility (TSF) monitoring bore TSF EXT MB1 with TSF EXT RB1 and addition of TSF3cMB and TSF3c to the current monitoring regime on the licence; • Allow for overflows of RO reject water into Cassiterite Pit; • Increase capacity of category 85B from 0.82 gigalitre (GL) per annum to 1.5 GL per annum. Category 85B estimated to receive a maximum 150 litres per second (L/s) of feedwater, producing 45 L/s reject and 105 L/s of permeate; • Allow for a boundary expansion to category 89 putrescible land and tyre storage facility; and • Other minor amendments including the removal of redundant conditions.
16/09/2024	L4328/1989/10	Licence amendment to: • Include the fourth train of the beneficiation plant and supporting infrastructure; • Increase the waste disposal production capacity from 3,650 tonnes to 9,450 tonnes per annual period (resulting in removal of Category 89 and inclusion of Category 64); • Increase the waste disposed of to the Landfill site from 1,650 to 7,000 tonnes; • Increase the waste tyres disposed of to the EWL tyre disposal area from 500 to 950 tonnes; and • Include additional EWL groundwater 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:

(a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises;

(b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises;

(c) ensure that sediment laden stormwater runoff from operational areas is directed to settling basins which maximise retention time of suspended solids prior to being discharged from the Premises; and

(d) maintain sedimentation basins at all offsite stormwater discharge points such that there is sufficient retention time within the basin to maximise removal of suspended solids prior to being discharged from the Premises.

Premises operation

2. 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 limits**
5	Processing or beneficiation of metallic or non-metallic ore	8,750,000 tonnes per annual period
52	Electric power generation	64 MW

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

3. The Licence Holder must ensure that the waste types specified in Table 2 are only subjected to the corresponding processes, subject to the corresponding process limits and/or specifications.

Table 2: Management of Waste[1]

Facility	**Waste type**	**Process(es)**	**Process limits and/or specifications**
Landfill site	Inert Waste Type 1	Receipt, handling, and disposal of waste by landfilling	*All waste types* • No more than 7,000 tonnes of waste must be disposed of at the landfill site per annual period. • Disposal of waste by landfilling must only take place within the landfill site shown in Schedule 1, Figure 2. • The separation distance between the base of the landfill and the highest groundwater level must not be less than 2 m.
	Putrescible Waste		
	Clean Fill		
	Inert Waste Type 2		

Facility	Waste type	Process(es)	Process limits and/or specifications
EWL tyre disposal area (as depicted in Schedule 1, Figure 2)	Inert Waste Type 2 (Tyres only)		No more than 950 tonnes of waste tyres must be disposed of at the tyre disposal areas per annual period, with cells constructed on each bench as the EWL is developed. Tyres must only be landfilled: i) in batches separated from each other by at least 100 mm of soil and each consisting of not more than 40 m^3 of tyres reduced to pieces; or ii) in batches separated from each other by at least 100 mm of soil and each consisting of not more than 1,000 whole tyres.
EWL	Inert Waste Type 1 only		No more than 1,500 tonnes of Inert Waste Type 1 to be disposed within the 5 m compacted base layer of the EWL.
	Dry stack tailings co-mingled with mine waste	Final disposal	• Area of the deposition is 209.2 ha; • Dry stack tailings are to be chemically benign and classified as non-acid forming; • Low moisture dry stack tailings not exceeding an average of 19% w/w; • Dry stack tailings to fill void spaces between mine waste, limiting the availability of water to travel through the EWL; • Comingled dry stack tailings within the EWL to have a minimum 2 m non-acid forming waste rock cover upon final construction of the landform; and • Dry stack tailings to be deposited in the EWL will not be placed within 10 m of the final embankments or underneath an embankment slope.
Dry tailings load out area	Dry stack tailings co-mingled with mine waste	Load out of dry stack tailings	• As per Condition 9, Table 4.
Used tyre storage areas (as depicted in Schedule 1, Figure 3 and labelled as Areas 1 to 3)	Inert Waste Type 2 (Tyres only)	Storage pending final disposal	• Total quantity of used whole tyres stored must not exceed more than 500 tyres at any one time. • Quantity of used whole tyres stored within individual used tyre stacks does not exceed 100 tyres. • Tyre stacks not less than 6 m from any other tyre stack.

Facility	Waste type	Process(es)	Process limits and/or specifications
			• Firefighting equipment must be stored on site and capable of controlling and extinguishing a tyre fire.
WWTF (as depicted in Schedule 1, Figure 4)	Sewage	Biological and physical treatment	No more than 210 m^3/day.
Reverse Osmosis (RO) Plant Osmoflo plant consisting of three trains as depicted in Schedule 1, Figure 5	RO brine	Storage in Fines Bin Tank/ Reject Water Tank/ Mining Tank/ Haulage Tank for ultimate disposal of the diluted RO brine to land via dust suppression RO brine discharged into Cassiterite Pit	No more than 1.5 GL/year. • To be used for dust suppression within disturbed areas and vegetation avoided. • RO brine must not to be directly discharged to the environment. • TDNE3 borefield water to not constitute more than 16% of the RO Feed Water composition. <u>Cassiterite Pit</u> • Maintain and operate a minimum 10 m freeboard from the lowest point of the pit crest.

Note 1: 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*.

4. The Licence Holder must manage the landfilling activities to ensure:

(a) the size of the tipping face is kept to a minimum and not larger than 30 m in length and 2 m above ground level in height;

(b) waste is levelled and compacted as soon as practicable after it is discharged;

(c) waste is placed and compacted to ensure all faces are stable and capable of retaining restoration material; and

(d) restoration of a cell or phase takes place within six months after disposal in that cell or phase has been completed.

5. The Licence Holder must ensure that cover is applied and maintained on landfilled wastes in accordance with Table 3 and that sufficient stockpiles of cover are maintained on site at all times.

Table 3: Cover Requirements[1]

Waste Type	Material	Depth	Timescales
Putrescible Waste	Inert and Incombustible material	Sufficient to ensure the waste is completely covered and that no waste is exposed	Weekly or as soon as practicable after deposit and prior to compaction
Inert Waste Type 2 (Tyres only)	Soil	500 mm	As soon as practical following the achievement of final waste levels in the area(s) in which tyres are deposited
Inert Waste Type 1	No cover required		

Note 1: Additional requirements for the covering of tyres are set out in Part 6 of *the Environmental Protection Regulations 1987*.

6. The Licence Holder must:

(a) erect and maintain suitable fencing around the landfill site and WWTF that acts as an effective barrier to unauthorised persons, cattle, horses, and other stock; and

(b) undertake regular inspections of all security measures and repair damage as soon as practicable.

7. The Licence Holder must ensure that wind-blown waste is contained within the landfill site and that wind-blown waste is returned to the tipping area on at least a monthly basis.

Infrastructure and equipment

8. The Licence Holder must ensure that the site infrastructure and equipment listed in Table 17 in Schedule 2: Infrastructure and Equipment and located at the corresponding infrastructure location is maintained and operated in good working order.

9. The Licence Holder must ensure that the site infrastructure and equipment listed in Table 4 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 4.

Table 4: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirements	Infrastructure location
Fixed plant	• Concrete catchment bunds under all lubricating vessels and hydrocarbon storage units. • Stormwater directed towards the sumps/oil separators in the existing fixed plant location where water is then directed to an unlined retention pond. • Plant area bunded to divert clean stormwater around operational areas.	As depicted in Schedule 1, Figure 6
3 mobile crushing and screening plants	• Located within the prescribed premises boundary. • All sited on a flat stable raised pad. • All plant area(s) bunded and graded to ensure all stormwater is directed towards retention sump(s) within the footprint of all plants.	As depicted in Schedule 1, Figure 1
Eight (8) Facultative Wastewater Treatment Ponds	• Lined to achieve a hydraulic conductivity of $<10^{-9}$ m/s. • A minimum top embankment freeboard of 350 mm is to be maintained at all times.	As depicted in Schedule 1, Figure 4
Five (5) Treated Wastewater Evaporation Ponds	• HDPE lined treatment ponds. • Maintenance of 300 mm freeboard in the ponds.	
Retention sump (drainage water intercept basin) Train 4 (T4) Stormwater Retention Sump	• Lined system with a permeability of 1 x 10^{-9} m/s or less. • A minimum operational freeboard of 300 mm is to be maintained at all times. • Sized for no overflow except in the event of a greater than 1% AEP 72-hour storm. • Overflow directed to the Wodgina pit.	As depicted in Schedule 1, Figure 8
Beneficiation Plant – Trains 1, 2, 3 and 4	• Located within an impervious concrete compound with nib walls around the entire perimeter of the facility. • Graded to direct any spills and drainage to concrete lined sumps that have sump pumps.	As depicted in Schedule 1, Figures 8 and 10
Beneficiation plant – Trains 1, 2, 3 and 4	• Concreted bund maintained to direct stormwater towards the retention sump for recycling back to the process circuit.	As depicted in Schedule 1, Figure 11

Site infrastructure and equipment	Operational requirements	Infrastructure location
Process Water Pond	• HDPE lined. • A minimum operational freeboard of 300 mm is to be maintained at all times.	As depicted in Schedule 1, Figure 8
Spodumene concentrate storage areas – concentrate shed and areas outside shed	• Storage of spodumene concentrate only. • Deposition and loading are minimised during high winds. • Dust suppression controls are available at all times. • Drainage controls in place are maintained to minimise suspended solids discharged in stormwater. • Designated sump is maintained to ensure efficient operation and emptied prior to rainfall events. • Clean up of spodumene concentrate must be undertaken on at least a weekly basis and returned to the stockpiles or otherwise appropriately contained.	As depicted in Schedule 1, Figures 7 and 8
Dry tailings load out area	• Dust suppression via sprays or tarps as required. • Earthen bund wall maintained to direct stormwater towards the retention sump for recycling back to the process circuit. • Under drainage network that reports to a sump for recycling back to the process circuit.	As depicted in Schedule 1, Figure 7

10. 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; and

(c) at the corresponding infrastructure location,

as set out in Table 5.

Table 5: Design and construction / installation requirements

Infrastructure	Design and construction / installation requirements	Infrastructure location

Beneficiation plant – Train 4 (T4)	• Constructed within a raised concrete, impervious concrete compound.
	• Impervious concrete compound graded to direct any spills and drainage to concrete lined sumps that have sump pumps to direct water/spills back into the process water system.
	• Train 4 to consist of:
	  ○ grinding circuits (ball mills), each with a nominal feed rate of 231 dry tonnes per hour.
	  ○ iron removal circuits consisting of low intensity magnetic separators followed by wet high intensity magnetic separators.
	  ○ tantalum recovery circuits.
	  ○ de-slime hydro cyclone circuits.
	  ○ sulfide pre-flotation circuits consisting of pre-flotation roughers and cleaner cells.
	  ○ flotation circuits consisting of rougher, scavenger, first cleaner, second cleaner and third cleaner stages to recover spodumene.
	  ○ spodumene concentrate dewatering circuits consisting of a concentrate thickener, concentrate storage tank and a belt filter.
	  ○ dry tailings screens.
	  ○ mill media storage bunkers.
		At the location shown in Schedule 1, Figure 8

Train 4 (T4) Stormwater Retention Sump	• HDPE lined system with sufficient capacity to contain a 1% AEP 72-hour rainfall event. • Retention sump adequately sized to maintain an operational freeboard of 300 mm. • Overflow to be directed to the Wodgina pit.	As shown in Schedule 1, Figure 8
Additional Concentrate Storage Area	• Bunded concrete pad.	As shown in Schedule 1, Figure 8

11. The Licence Holder must operate the Beneficiation plant – Train 4 in accordance with the conditions of this Licence, following submission of the compliance document required under condition 36.

12. The Licence Holder must design, construct, and install groundwater monitoring wells in accordance with the requirements specified in Table 6.

Table 6: Infrastructure requirements – groundwater monitoring wells

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Groundwater monitoring wells: EWL5YPMB001 EWL5YPMB002 EWL5YPMB003 EWL5YPMB004 EWL24_MB001_S EWL24_MB001_D TSF EXT RB1 (replacement bore for TSF EXT MB1 that will be decommissioned)	Well design and construction: Designed and constructed in accordance with ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores. Well screens must target the part, or parts, of the aquifer most likely to be affected by contamination[1]. Where temporary/seasonal perched features are present, wells must be nested, and the perched features individually screened.	As depicted in Schedule 1, Figures 12 and 13	Must be constructed, developed (purged), and determined to be operational prior to the progressive expansion of the EWL and resulting decommissioning of existing EWL monitoring wells (i.e. EWL-a, EWL-b, EWL-h, EWL-I-i, EWL-j and EWL-k)
	Logging of borehole: Soil samples must be collected and logged during the installation of the monitoring wells. A record of the geology encountered during drilling must be described and classified in accordance with the Australian Standard Geotechnical Site Investigations AS1726. Any observations of staining / odours or other indications of contamination must be included in the bore log.		
	Well construction log: Well construction details must be documented within a well construction log to demonstrate compliance with ASTM D5092/D5092M-16. The construction logs shall include elevations of the top of casing position to be used as the reference point for water-level measurements, and the elevations of the ground surface protective installations.		
	Well development: All installed monitoring wells must be developed after drilling to remove fine sand, silt, clay, and any drilling mud residues from around the well screen to ensure the hydraulic functioning of the well. A detailed record should be kept of well development activities and included in the well construction log.		
	Installation survey: the vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	Well network map: a well location map (using aerial image overlay) must be		

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
	prepared and include the location of all monitoring wells in the monitoring network and their respective identification numbers.		

Note 1: refer to Section 8 of Schedule B2 of the Assessment of Site Contamination NEPM for guidance on well screen depth and length.

13. The Licence Holder must manage the wastewater treatment and evaporation ponds such that:

(a) stormwater runoff is prevented from entering the ponds or causing the erosion of outer pond embankments which may affect the integrity of the pond wall or liner;

(b) overtopping of the ponds does not occur;

(c) there is no visible seepage loss through the wastewater treatment pond embankments;

(d) trapped overflows must be maintained on the outlet of treatment ponds to prevent carry-over of surface floating matter;

(e) under normal operations, discharges from treatment ponds are directed to the evaporation ponds;

(f) as a result of an extreme rainfall event (greater than 1 in 10-year event of 72 hours duration), discharges from treatment ponds or evaporation ponds may be directed to the environment via spillways or discharge pipes designed for that purpose; and

(g) vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond embankments (with the exception of duckweed on non-primary treatment ponds).

14. The Licence Holder must ensure that all pipelines containing process water, RO brine, tailings and decant water are either:

(a) equipped with telemetry system and pressure sensors along pipelines to allow the detection of leaks and failures; or

(b) equipped with automatic cut-outs in the event of a pipe failure; or

(c) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

15. The Licence Holder must:

(a) undertake inspections as detailed in Table 7;

(b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and

(c) maintain a record of all inspections undertaken.

Table 7: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection
Tailings delivery pipelines	Visual integrity	Daily
Decant return water lines	Visual integrity	
Embankment freeboards	Visual to confirm required freeboard capacity is available	
Cassiterite Pit	Visual to confirm required freeboard capacity is available	Following significant rainfall events

Emissions and discharges

General

16. The Licence Holder must record and investigate the exceedance of any descriptive or numerical limit in this section.

Authorised discharge points for emissions

17. The Licence Holder must ensure that the emissions specified in Table 8, are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 8: Authorised discharge points

Emission	Discharge point	Discharge point location
Deposition of dry stack tailings co-mingled with mine waste	EWL Dry Stack Tailings Disposal Area	As shown in Schedule 1, Figure 2
Treated wastewater discharged from facultative wastewater treatment ponds to evaporation ponds	L1	As shown in Schedule 1, Figures 4 and 12 ‘L1’
Overflow of potentially contaminated stormwater from the retention ponds in the plant area during a heavy rainfall event	L2	As shown in Schedule 1, Figures 6, 7 and 12 ‘L2’
Exhaust gases	Thirty two x 2 MW natural gas generators	As shown in Schedule 1, Figure 9
RO brine	Cassiterite Pit	As shown in Schedule 1, Figure 2

18. The Licence Holder must ensure that emissions from the discharge point listed in Table 9 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 25.

Table 9: Emission and discharge limits

Discharge point	Parameter	Limit
L2	Total Recoverable Hydrocarbons	15 mg/L

19. The Licence Holder must ensure that only diluted RO brine, as specified in condition 3, is used for dust suppression on pre-disturbed locations throughout the prescribed premises including haul roads, access roads, ROM pads and waste dumps associated with the mine and crushing plant and construction areas.

20. The Licence Holder must not use TSF3E decant water or process water for dust suppression.

Monitoring

General monitoring

21. The Licence Holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;

(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;

(c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and

(d) all laboratory samples are submitted to a laboratory with current NATA accreditation for the parameters to be measured unless indicated otherwise in relevant table.

22. The Licence Holder must ensure that:

(a) monthly monitoring is undertaken at least 15 days apart; and

(b) quarterly monitoring is undertaken at least 45 days apart.

23. The Licence Holder must ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

24. The Licence Holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

Discharge point monitoring

25. The Licence Holder must monitor emissions in accordance with the requirements specified in Table 10 and record the results of all such monitoring.

Table 10: Emissions and discharge monitoring

Monitoring location	Parameter	Unit	Frequency	Averaging period	Method
L1	Volumetric flow rate	m^3/day	Quarterly	N/A	Flow metering device
	Biochemical Oxygen Demand	mg/L	Quarterly	Spot sample	AS/NZS 5667.1 AS/NZS 5667.10
	Total Suspended Solids	mg/L			
	pH[1]	pH units			
	Total Nitrogen	mg/L			
	Total Phosphorus	mg/L			
	E.coli	cfu/100 mL			
L2	Total recoverable hydrocarbons	mg/L	During overflow events only	Spot sample	AS/NZS 5667.1 AS/NZS 5667.10

Note 1: In-field non-NATA accredited analysis permitted.

Monitoring of inputs and outputs

26. The Licence Holder must undertake monitoring of the water balance for the TSF each monthly period, and (as a minimum) record the following information:

(a) site rainfall;
(b) evaporation rate;
(c) decant water recovery volumes;
(d) seepage recovery volumes;
(e) volume of tailings deposited;
(f) tailings solid content (w/w %);
(g) volume of water in tailings; and
(h) calculated seepage.

27. The Licence Holder must undertake the monitoring specified in Table 11 according to the specifications in that table.

Table 11: Monitoring of inputs and outputs

Input / Output	Parameter	Units	Averaging Period	Frequency
Waste Inputs into the landfill facility	Inert Waste Type 1, Inert Waste Type 2, Putrescible Waste and Clean Fill	tonnes or (where no weighbridge is present) m^3	N/A	Each load arriving at the landfill
Waste inputs to tyre disposal areas	None specified	Tyres only	N/A	Monthly

Process monitoring

28. The Licence Holder must undertake the monitoring specified in Table 12 according to the specifications in that table.

Table 12: Process monitoring

Location	Parameter	Units	Averaging Period	Frequency	Method
EWL Dry Stack Tailings Disposal Area	Dry stack tailings disposed	m^3	N/A	Monthly	N/A
	Groundwater monitoring bores EWL23RMB001 EWL23RMB002 EWL23RMB003 EWL5YPMB001 EWL5YPMB002 EWL5YPMB003	m^3	N/A	Monthly	Flow metering device
Beneficiation Plant Train 1, Train 2, Train 3 and Train 4	Wet ore concentrate produced	m^3	N/A	Monthly	N/A
Cassiterite Pit	RO brine transferred to the pit	m^3	Cumulative	Monthly	Flow metering device
TSF3E	Decant water recovered from TSF3E	m^3	N/A	Continuous	Flow metering device
	Seepage captured by recovery bores RB1, RB2, RB3 and RB4	m^3	Cumulative	Monthly	Flow metering device
	Piezometers reading	mbgl	N/A	Monthly	Manual
Wastewater discharged from Mining Tank and Haulage Tank[2] (as depicted in Schedule 1, Figure 12)	pH[1]	pH units	Spot sample	Monthly	AS/NZS 5667.1 AS/NZS 5667.10
	Conductivity[1]	µS/cm			
	Total Dissolved Solids (TDS)	mg/L			
	Aluminium				
	Arsenic				
	Boron				
	Bromide				

Location	Parameter	Units	Averaging Period	Frequency	Method
	Caesium				
	Cadmium				
	Chromium				
	Cobalt				
	Copper				
	Fluoride				
	Iron				
	Lead				
	Lithium				
	Manganese				
	Mercury				
	Nickel				
	Rubidium				
	Selenium				
	Silicon				
	Sulphate				
	Tin				
	Tungsten				
	Thallium				
	Uranium				
	Zinc				

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Level of detection is required to be sufficient to enable a comparison with *ANZG 2018.*

Ambient environmental quality monitoring

29. The Licence Holder must conduct a groundwater monitoring programme in accordance with the requirements specified in Table 13 and record the results of all monitoring activity conducted under that programme.

Table 13: Monitoring of ambient groundwater quality[2]

Monitoring location	Parameter	Unit	Frequency	Averaging period	Method
WWTF WWTF1 WWTF2 WWTF3 WWTF4 WWTF5 (as depicted in Schedule 1, Figure 12)	Standing water level[1]	mbgl	Monthly	Spot sample	AS/NZS 5667.1 AS/NZS 5667.11
	pH[1]	pH units	Quarterly	Spot sample	
	Biochemical Oxygen Demand	mg/L			
	Chemical Oxygen Demand	mg/L			
	Total Dissolved Solids	mg/L			
	Total Suspended Solids	mg/L			
	E.coli	cfu/100mL			
	Total nitrogen	mg/L			
	Ammonia				
	Nitrate/Nitrite				
	Total Phosphorus				
TSF3E TSF1 TSF2 MB3 TSF3 EXT RB1 TSF3cMB TSF3c RB1 RB2 RB3 RB4 MB2A RB3M MB1 TSF3 TSF4 TSF5	Standing water level[1]	mbgl	Monthly	Spot sample	AS/NZS 5667.1 AS/NZS 5667.6 (for ISWMS) AS/NZS 5667.11
	pH[1]	pH units	Quarterly For ISWMS only – once flow reaches this site	Spot sample	
	Electrical Conductivity	µS/cm			
	Total Recoverable Hydrocarbons	mg/L			
	Aluminium				
	Arsenic				
	Boron				
	Bromide				
	Cadmium				
	Caesium				
	Calcium				
	Calcium carbonate				

Monitoring location	Parameter	Unit	Frequency	Averaging period	Method
TSF6 PZ19TSF302 PZ19TSF303 PZ19TSF304 RB2M MB2B TDNE6a DG MB1 ISWMS (As per Schedule 1, Figures 12 and 13) Decant water <u>EWL</u> EWL24_MB001_S EWL24_MB001_D EWL23RMB001 EWL23RMB002 EWL23RMB003 EWL23RMB004 EWL5YPMB001 EWL5YPMB002 EWL5YPMB003 EWL5YPMB004 (As per Schedule 1, Figure 12)	Chloride				
	Chromium				
	Cobalt				
	Copper				
	Fluoride				
	Iron				
	Lead				
	Lithium				
	Magnesium				
	Manganese				
	Mercury				
	Nickel				
	Potassium				
	Rubidium				
	Selenium				
	Silicon				
	Sodium				
	Sulphate				
	Thallium				
	Tin				
	Uranium				
	Zinc				
	Total Dissolved Solids				
	Total Nitrogen				
	Total Phosphorus				
	Gross-alpha	Bq/L			
	Gross-beta				

Note 1: In-field non-NATA accredited analysis permitted.

Note 2: Level of detection is required to be sufficient to enable a comparison with *ANZG 2018.*

Records and reporting

30. 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.

31. 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 an Annual Audit Compliance Report for that period in the approved form by 31 October each year.

32. The Licence Holder must:

(a) prepare an Environmental Report that provides information in accordance with Table 14 for the preceding annual period; and

(b) submit that Environmental Report to the CEO by 31 October each year.

Table 14: Environmental reporting requirements

Condition	Requirement
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken.
25, Table 10	<u>Monitoring of emissions to land data</u> The results to be provided to the CEO must include, but need not be limited to the following: (a) the dates at which monitoring was undertaken for each location; (b) the raw monitoring data from each location, for each parameter in a tabulated form; and (c) an interpretation of monitoring data results including a comparison to previous monitoring results and licence limits.
26	<u>Annual water balance</u> The water balance provided to the CEO must include, but need not be limited to the following: (a) the data used to undertake the water balance; (b) details on how the parameters have been calculated / estimated and description of any uncertainties; and (c) an interpretation of the data including:

Condition	Requirement
	i. analysis on how the TSF is performing in regards to water management including seepage (actual/calculated seepage rates against predicted rates); and ii. analysis on whether existing seepage controls are considered adequate or what measures to further reduce seepage rates are required.
27, Table 11	Monitoring of inputs and outputs – Waste input data The results to be provided to the CEO must include, but need not be limited to the following: (a) tabulated data; and (b) assessment of the information against previous results and licence limits.
28, Table 12	Process monitoring data – Dry stack tailings; Beneficiation Plant; TSF3E; and Cassiterite Pit The results to be provided to the CEO must include, but need not be limited to the following: (a) tabulated data; and (b) assessment of the information against previous results and licence limits.
28, Table 12	Monitoring of water quality data for wastewater discharged from Mining Tank and Haulage Tank The results to be provided to the CEO must include, but need not be limited to the following: (a) the dates at which monitoring was undertaken for each location; (b) the raw monitoring data from each location, for each parameter in a tabulated form; and (c) an interpretation of monitoring data results including a comparison against the *ANZG 2018 – Livestock drinking water quality guidelines* and any site-specific trigger values adopted for groundwater quality.
29, Table 13	Monitoring of ambient groundwater quality data The results to be provided to the CEO must include, but need not be limited to the following: (a) a clear statement of the scope of work carried out; (b) the dates at which monitoring was undertaken for each location; (c) a description of the field methodologies employed; (d) a summary of the field and laboratory quality assurance / quality control (QA/QC) program; (e) the raw monitoring data from each location, for each parameter in a tabulated form; (f) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must be shown);

Condition	Requirement
	(g) an interpretive summary and assessment of results: (i) against relevant assessment levels for water, as published in the *Guideline: Assessment and management of contaminated sites* (ii) a comparison to previous monitoring results and licence limits (h) for the TSF3E and EWL bores - an interpretation of monitoring data results including a comparison to previous monitoring results and against the *ANZG 2018 – Livestock drinking water quality guidelines;* and (i) trend graphs to provide graphical representation of historical results and support the interpretive summary. Note 1: General guidance on report presentation can be found in the department's *Guideline: Assessment and management of contaminated sites*.
30	Complaints summary.

33. The Licence Holder must ensure that the Environmental Report also contains a list of any original monitoring reports submitted to the Licence Holder from third parties for the annual period and make these reports available on request.

34. 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 3, 8 and 9 of this licence;
(c) the works conducted in accordance with condition 10 of this licence;
(d) monitoring programmes undertaken in accordance with conditions 25, 26, 27, 28 and 29 of this licence; and
(e) complaints received under condition 30 of this licence.

35. The books specified under condition 34 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.

Notification

36. The Licence Holder must ensure that the parameters listed in Table 15 are notified to the CEO in accordance with the notification requirements of the table.

Table 15: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement[1]	Format or form[2]
2, 3 and 18	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable.	N1
10, Table 5	The Licence Holder must: (a) undertake an audit of their compliance with the requirements of condition 10; and (b) prepare and submit to the CEO an Environmental Compliance Report on that compliance. The Environmental Compliance Report must include as a minimum the following: (a) certification by a suitably qualified professional engineer that the items of infrastructure or component(s) thereof, as specified in condition 10, have been constructed in accordance with the relevant requirements specified in condition 10; (b) 'as constructed plans' and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 10; and (c) be signed by a person authorised to represent the Licence Holder and contain the printed name and position of that person.	Within 30 days of the completion of construction	None specified
12, Table 6	The Licence Holder must submit to the CEO a well construction report evidencing compliance with the requirements of condition 12, Table 6	Within 60 calendar days of the monitoring wells being constructed	None specified
24	Calibration report	As soon as practicable.	None specified

Note 1: Notification requirements in the licence shall not negate the requirement to comply with s72 of the Act
Note 2: Forms are in Schedule 3

Definitions

In this licence, the terms in Table 16 have the meanings defined.

Table 16: 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)
annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year
ANZG 2018	means the most recent version and relevant parts of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia) Available at http://www.waterquality.gov.au/anz-guidelines
AS/NZS 5667.1	means the most recent version and relevant parts of 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 5667.6	means the most recent version and 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 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 relevant parts of the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*
Assessment of Site Contamination NEPM	means the document titled *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended from time to time)
averaging period	means the time over which a limit is measured or a monitoring result is obtained
books	has the same meaning given to that term under the EP Act
Bq/L	Becquerel per litre
Category/ categories/ cat	means categories of Prescribed Premises as set out in Schedule 1 of the *Environmental Protection Regulations 1987*

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/100 mL	means colony forming units per 100 millilitres
Clean Fill	has the meaning defined in Landfill Definitions
controlled waste	has the definition in *Environmental Protection (Controlled Waste) Regulations 2004*
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
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)
EWL	means Eastern Waste Landform
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures
GL/year	gigalitres per year
Guideline: Assessment and management of contaminated sites	means the document titled *Guideline: Assessment and management of contaminated sites*, published by the Department of Water and Environmental Regulation (as updated from time to time)
HDPE	High density polyethylene
Inert Waste Type 1	has the meaning defined in Landfill Definitions
Inert Waste Type 2	has the meaning defined in Landfill Definitions
ISWMS	means Indicative Surface Water Monitoring Site
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

Term	Definition
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
mbgl	metres below ground level
µS/cm	micro Siemens per centimetre
Mt	million tonnes
Mm^3	million cubic metres
MW	megawatt
NATA	means the 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
Noise Regulations	means *Environmental Protection (Noise) Regulations 1997 (WA)*
NORMs	Naturally Occurring Radioactive Materials
practicable	is as defined in the *Environmental Protection Act 1986*
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
professional engineer	means a person who: (a) holds a Bachelor of Engineering recognised by the Institute of Engineers; and (b) has a minimum of five years of experience working in the relevant discipline or is otherwise approved by the CEO to act in this capacity.
quarterly	means the 4 inclusive periods from 1 July to 30 September, 1 October to 31 December and in the following year, 1 January to 31 March and 1 April to 30 June
restoration	means the completion of the engineering of a landfill cell and may include capping and/or final cover
RO	means Reverse Osmosis
ROM	Run of Mine
spot sample	means a discrete sample representative at the time and place at which the sample is taken

Term	Definition
TSF	Tailings Storage Facility
TSF3E	means TSF3 Extension
usual working day	means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia
waste	has the same meaning given to that term under the EP Act
WWTF	Wastewater Treatment Facility
w/w	means weight per weight

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

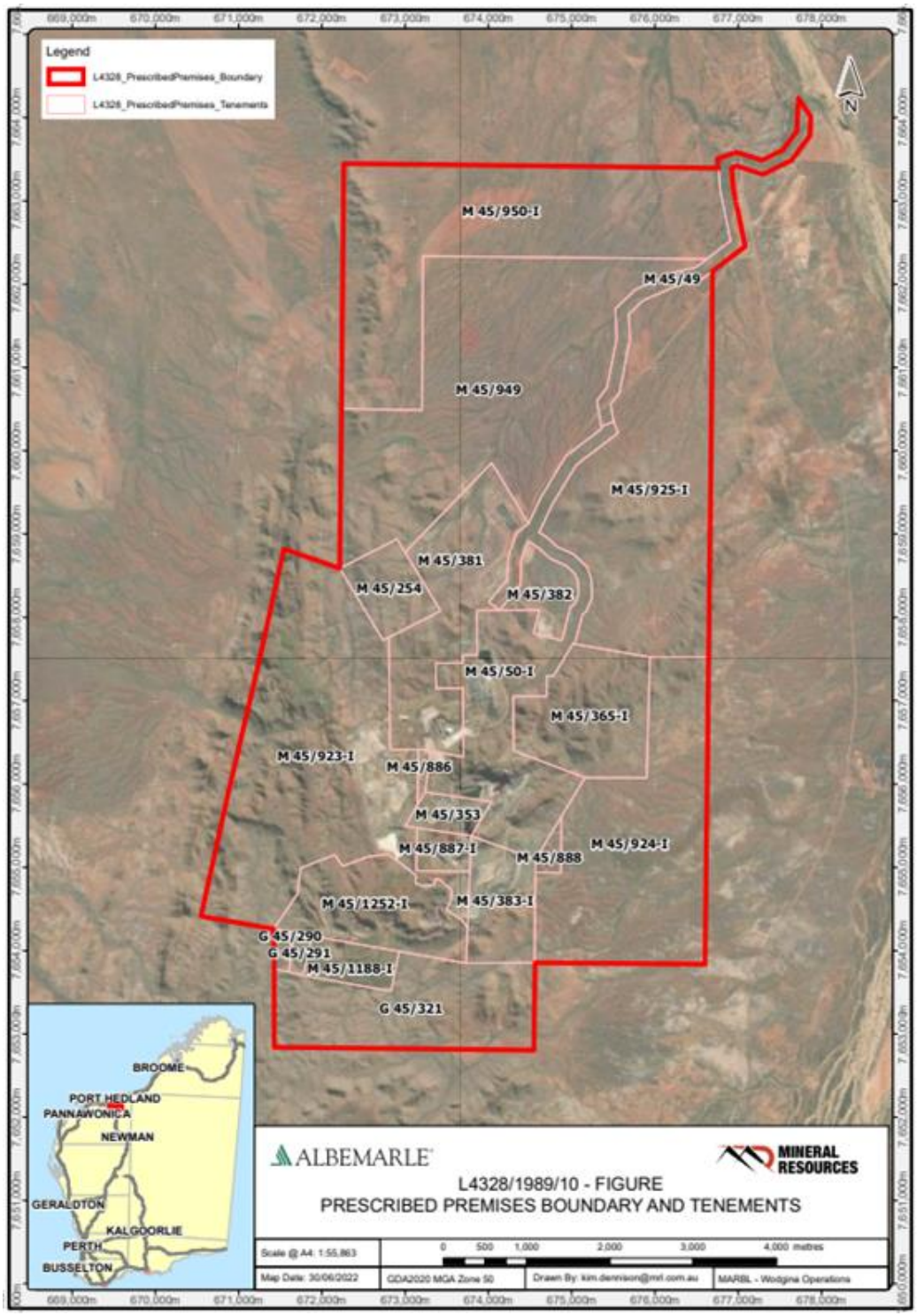

Figure 1: Map of the boundary of the prescribed premises

Infrastructure

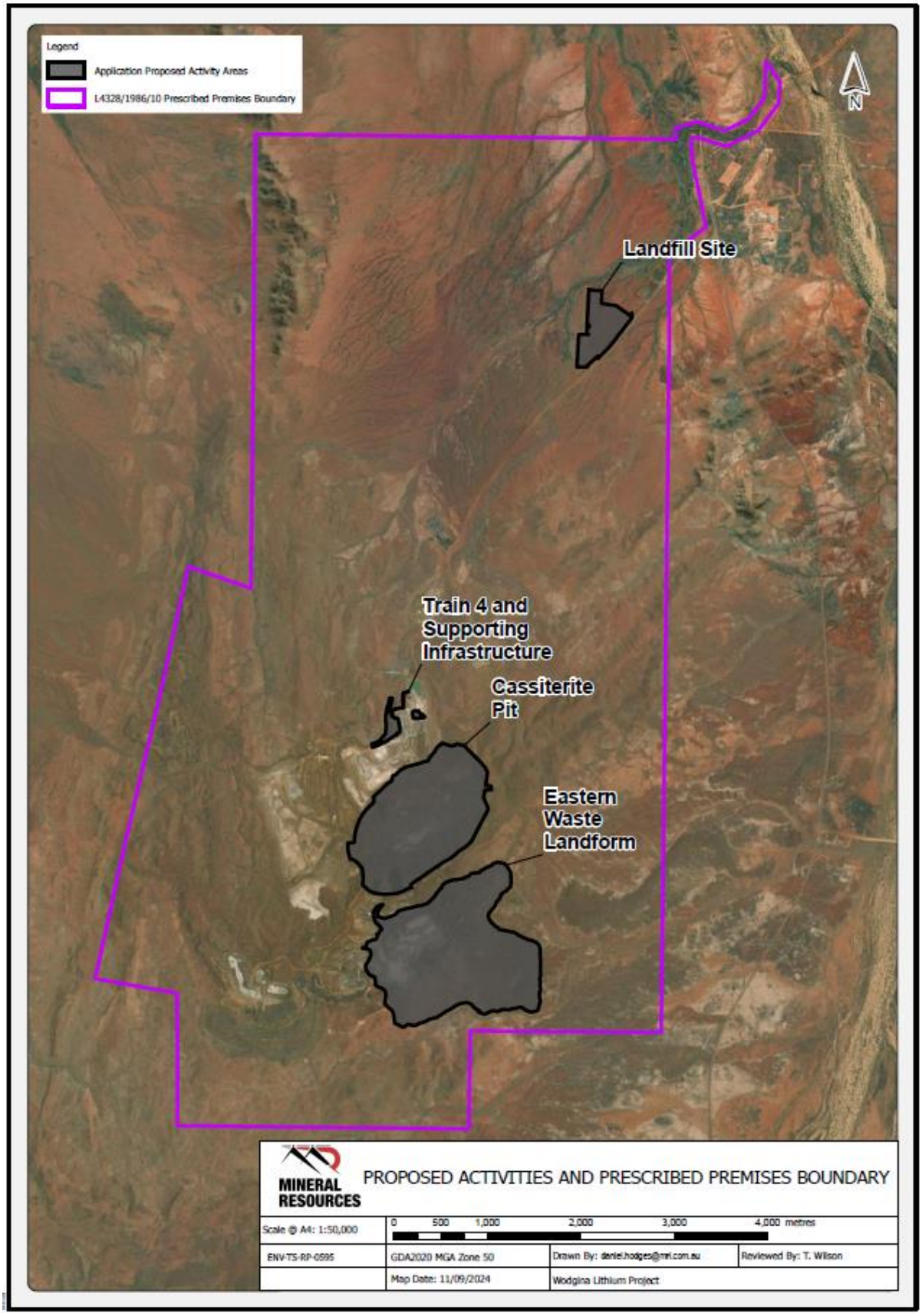

Figure 2: Location of Landfill site, Cassiterite Pit and EWL / Tyre Disposal Facility

Figure 3: Location of the used tyre storage areas

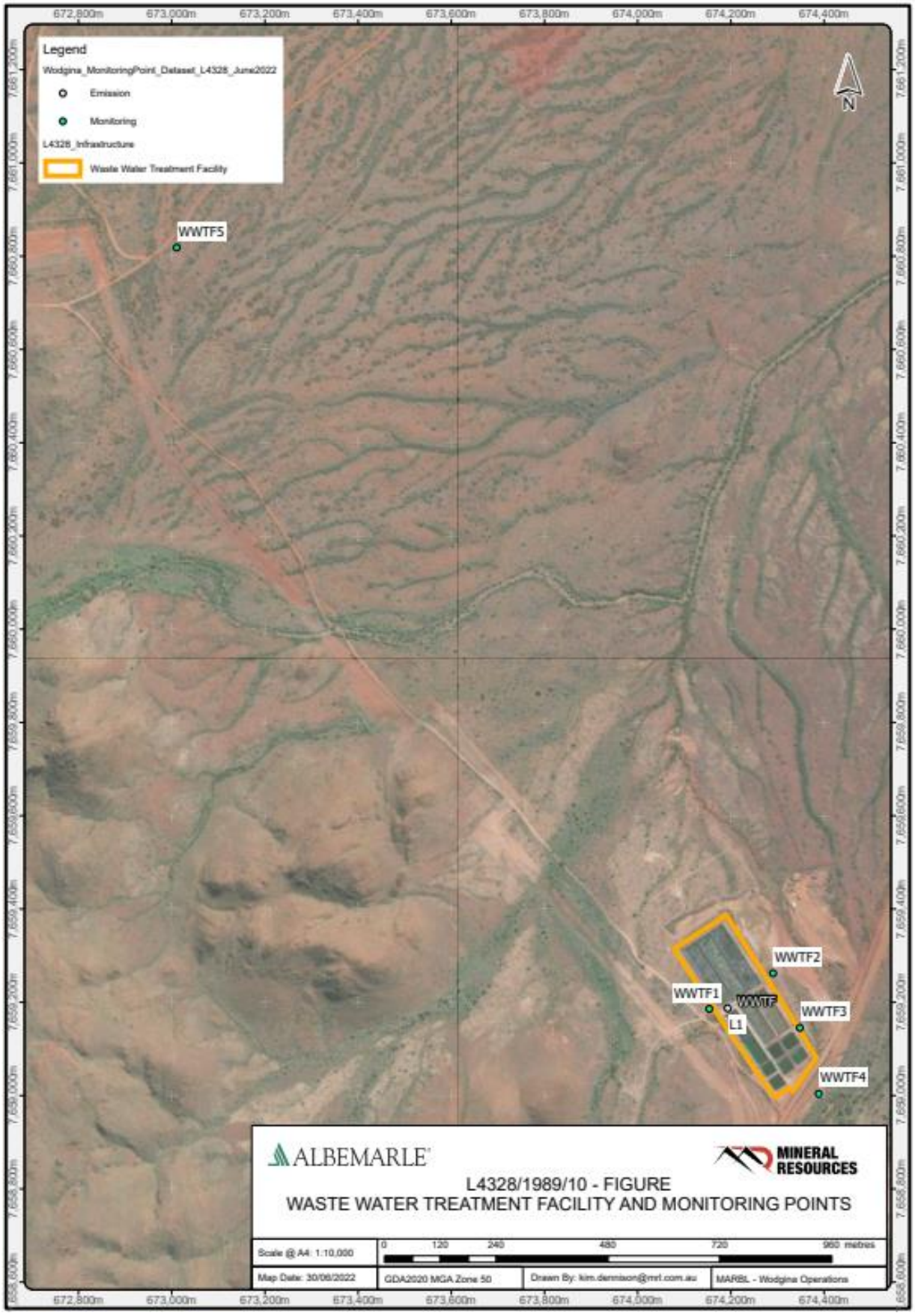

Figure 4: WWTF and monitoring points

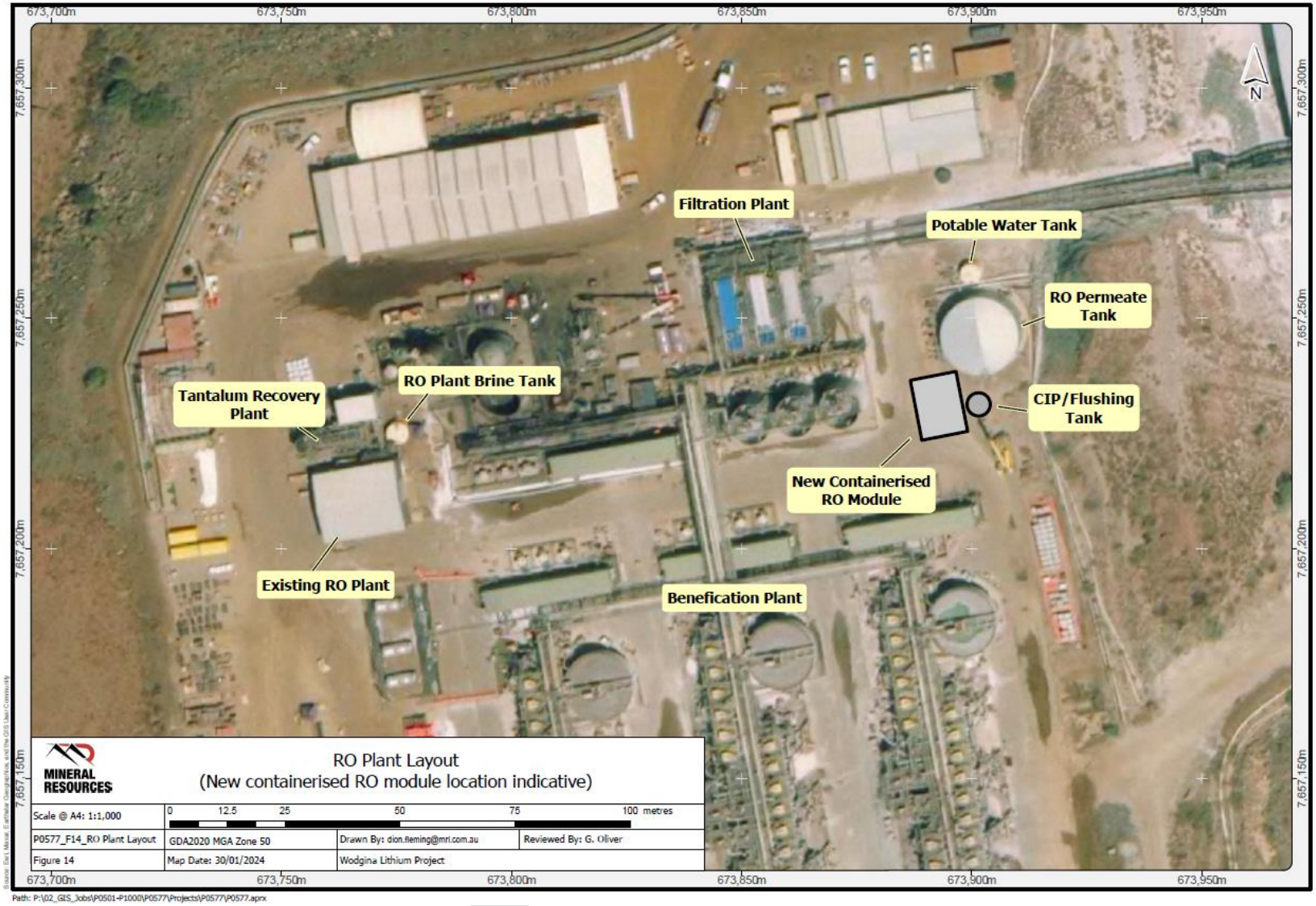

Figure 5: RO Plant layout

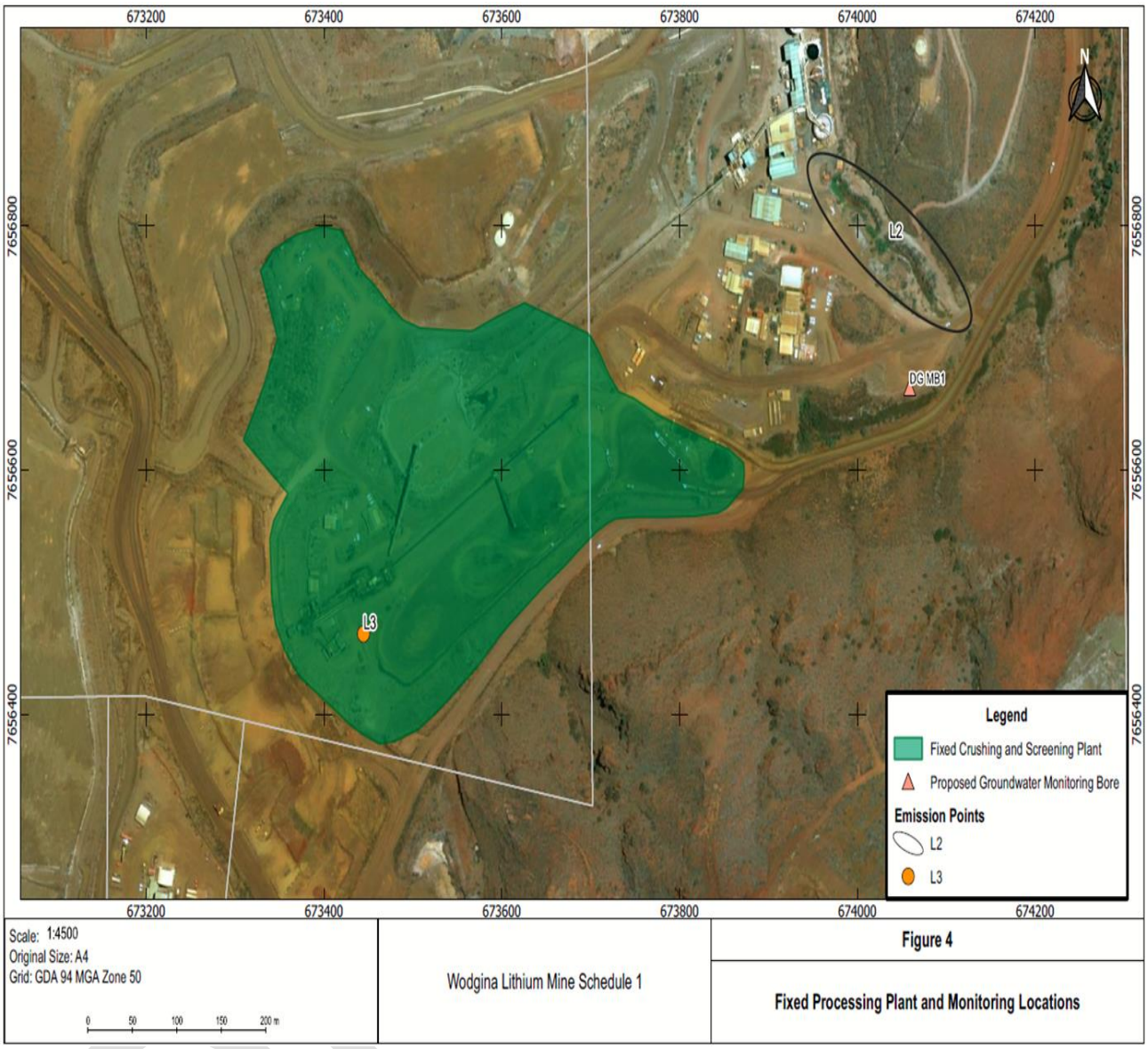

Figure 6: Location of the fixed plant

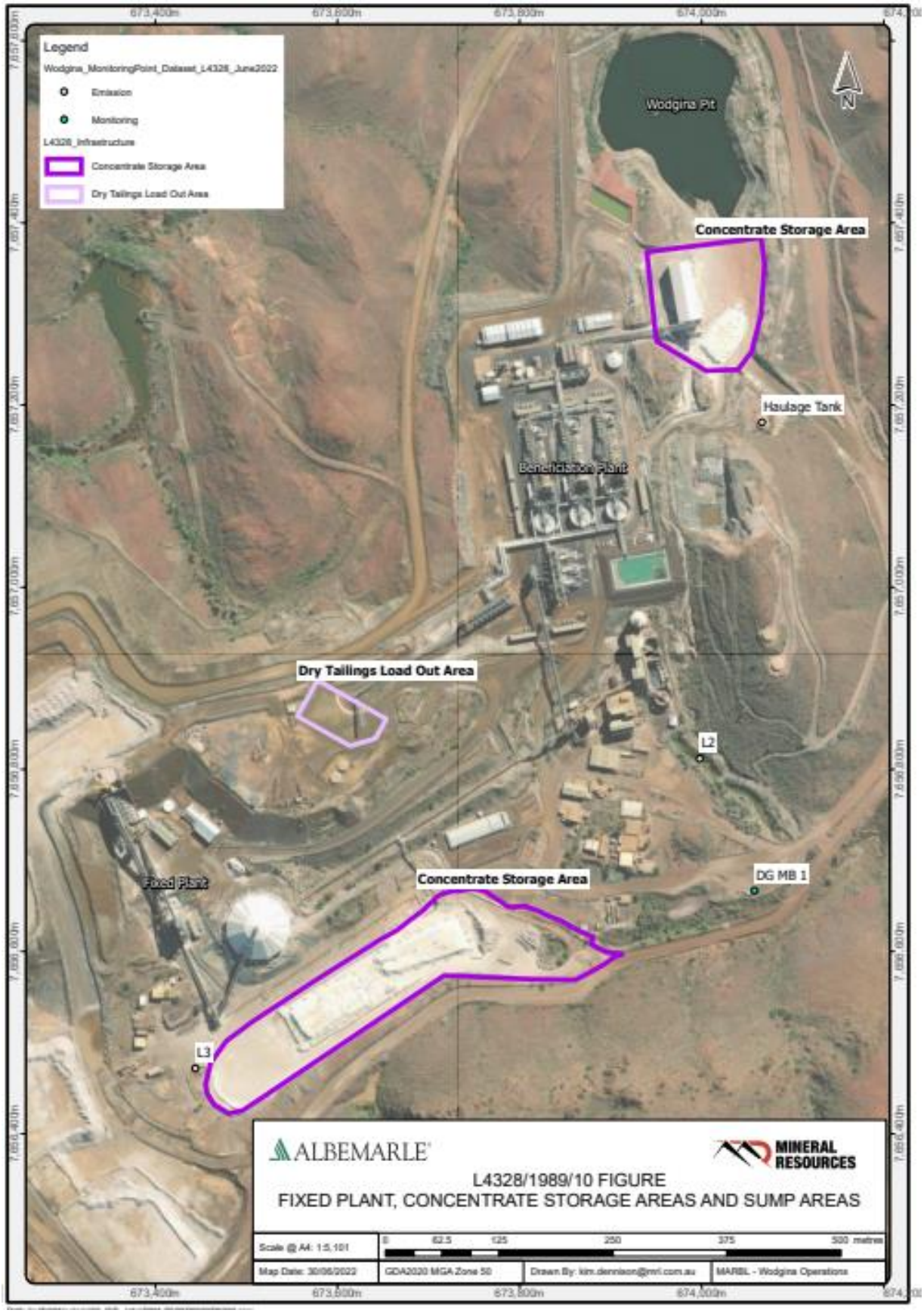

Figure 7: Dry tailing load-out area and Concentrate Storage Areas

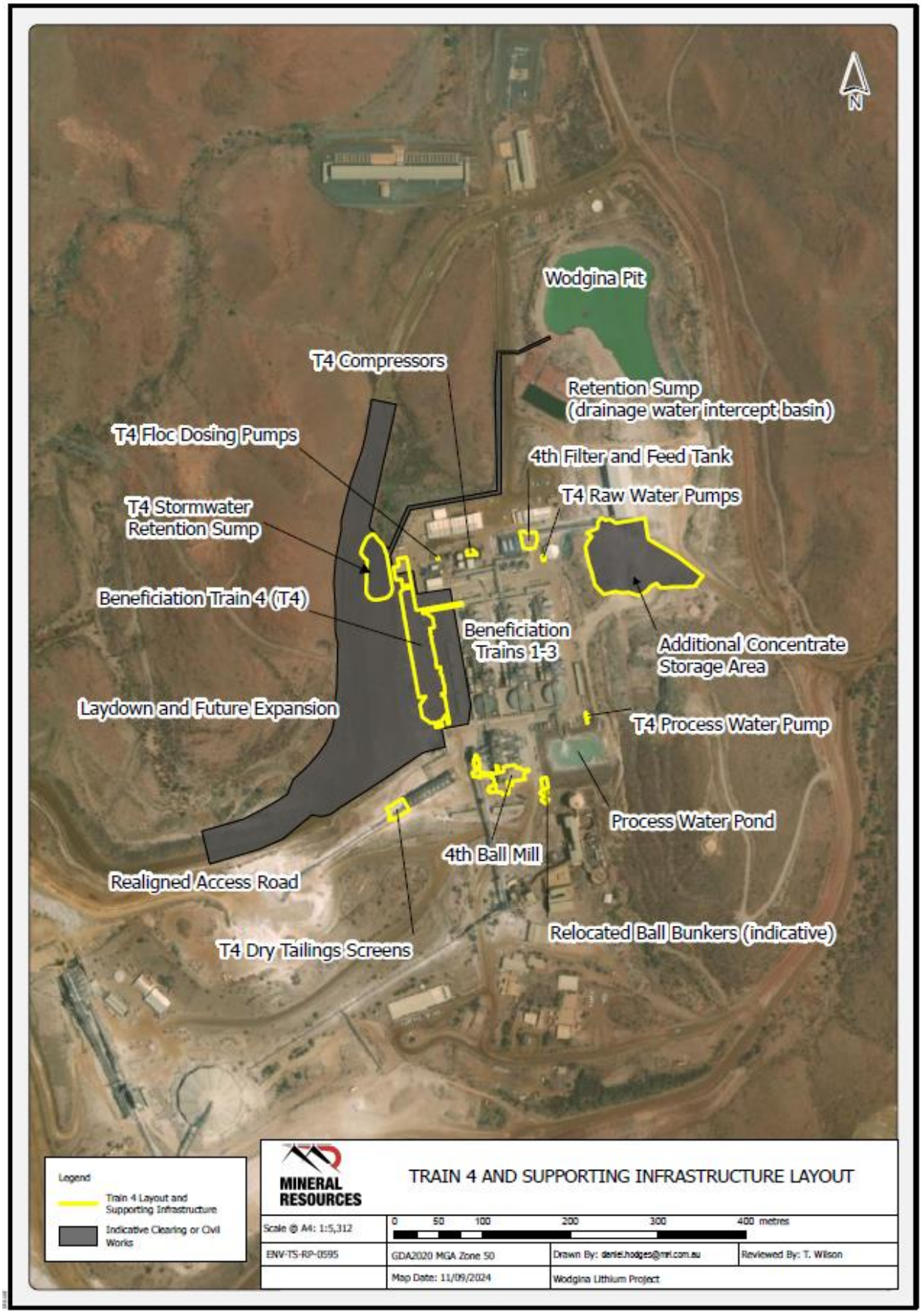

Figure 8: Train 4 and supporting infrastructure

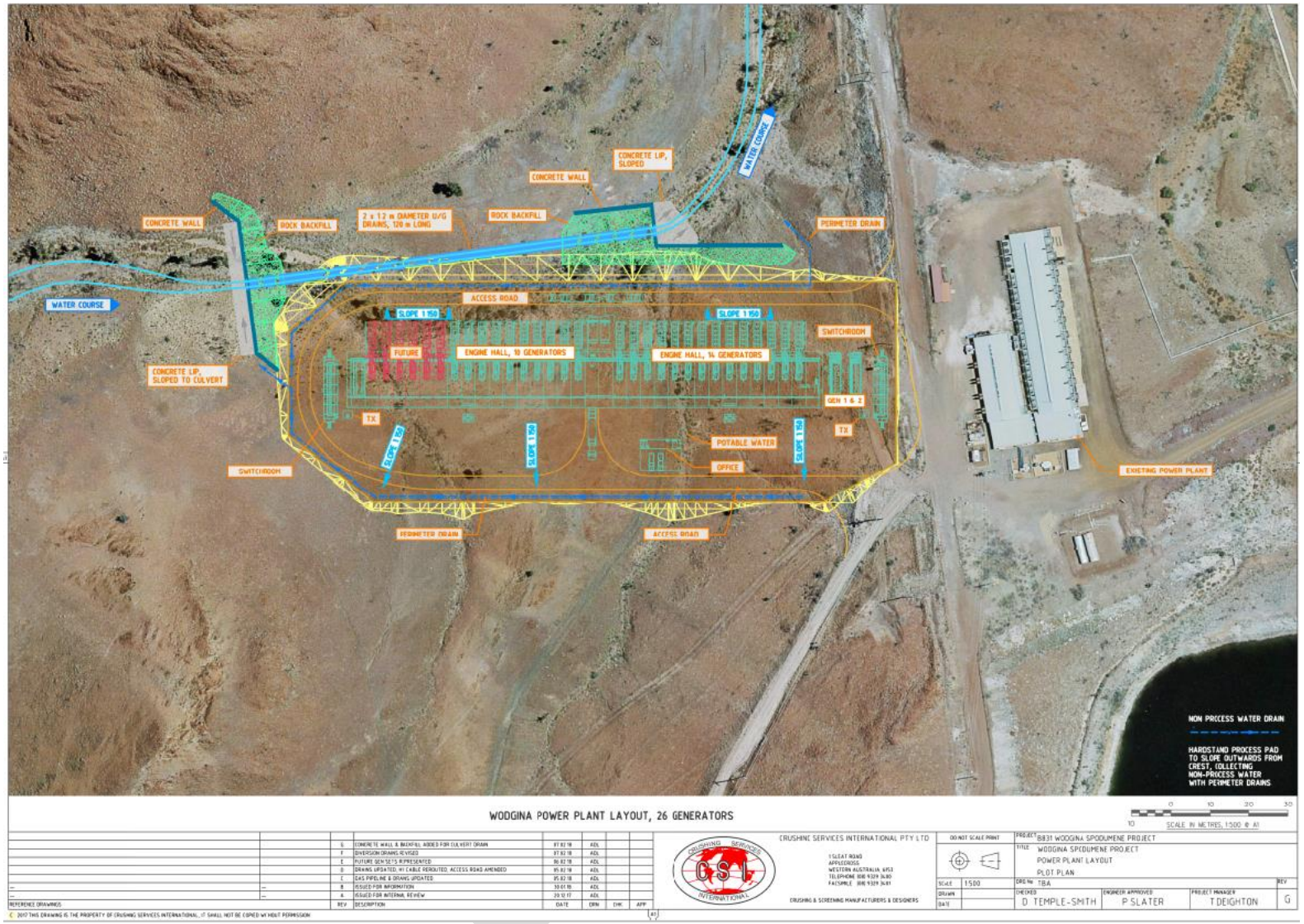

Figure 9: Gas Power Station

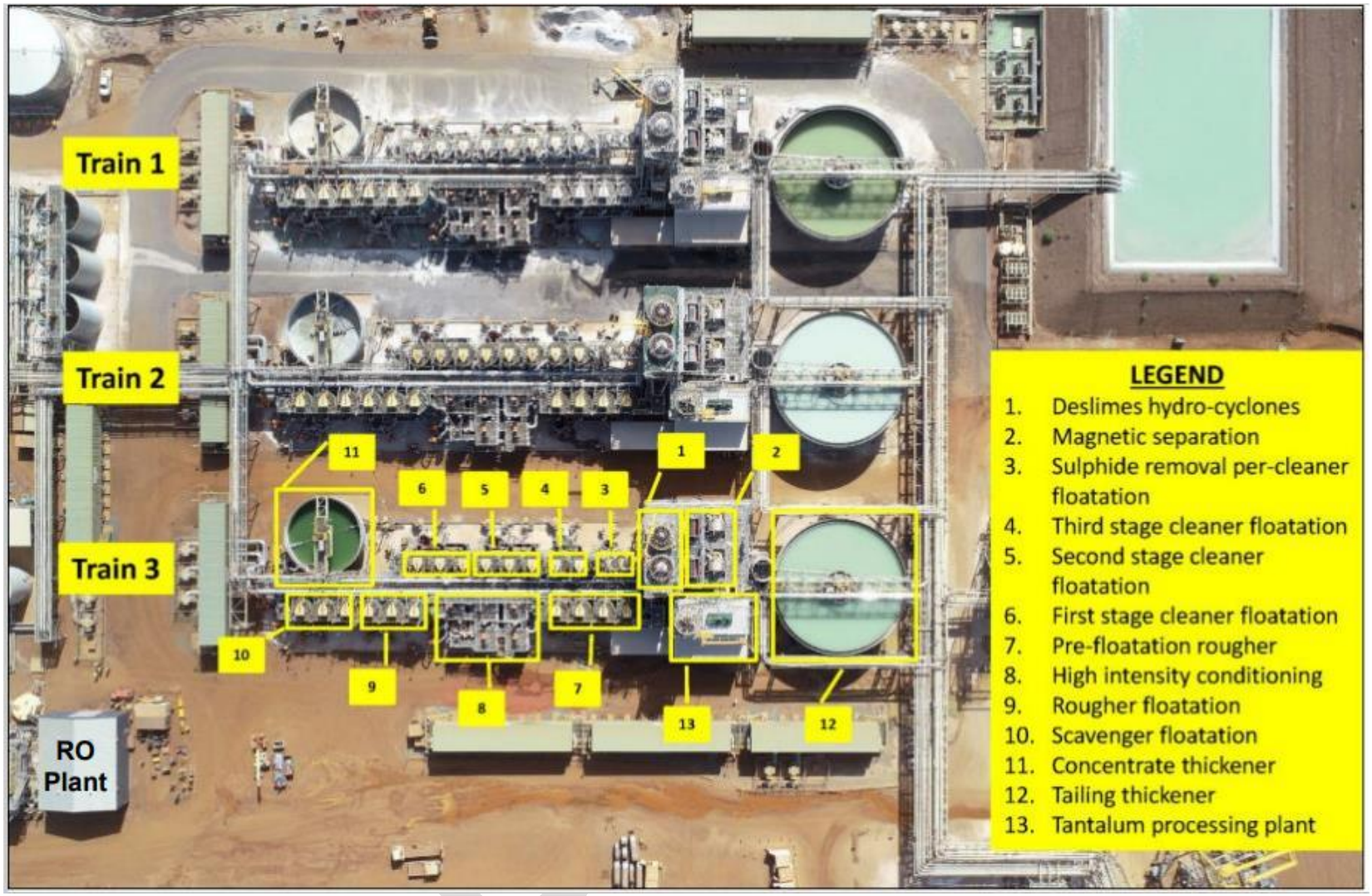

Figure 10: RO Plant and Beneficiation Trains (1 to 3)

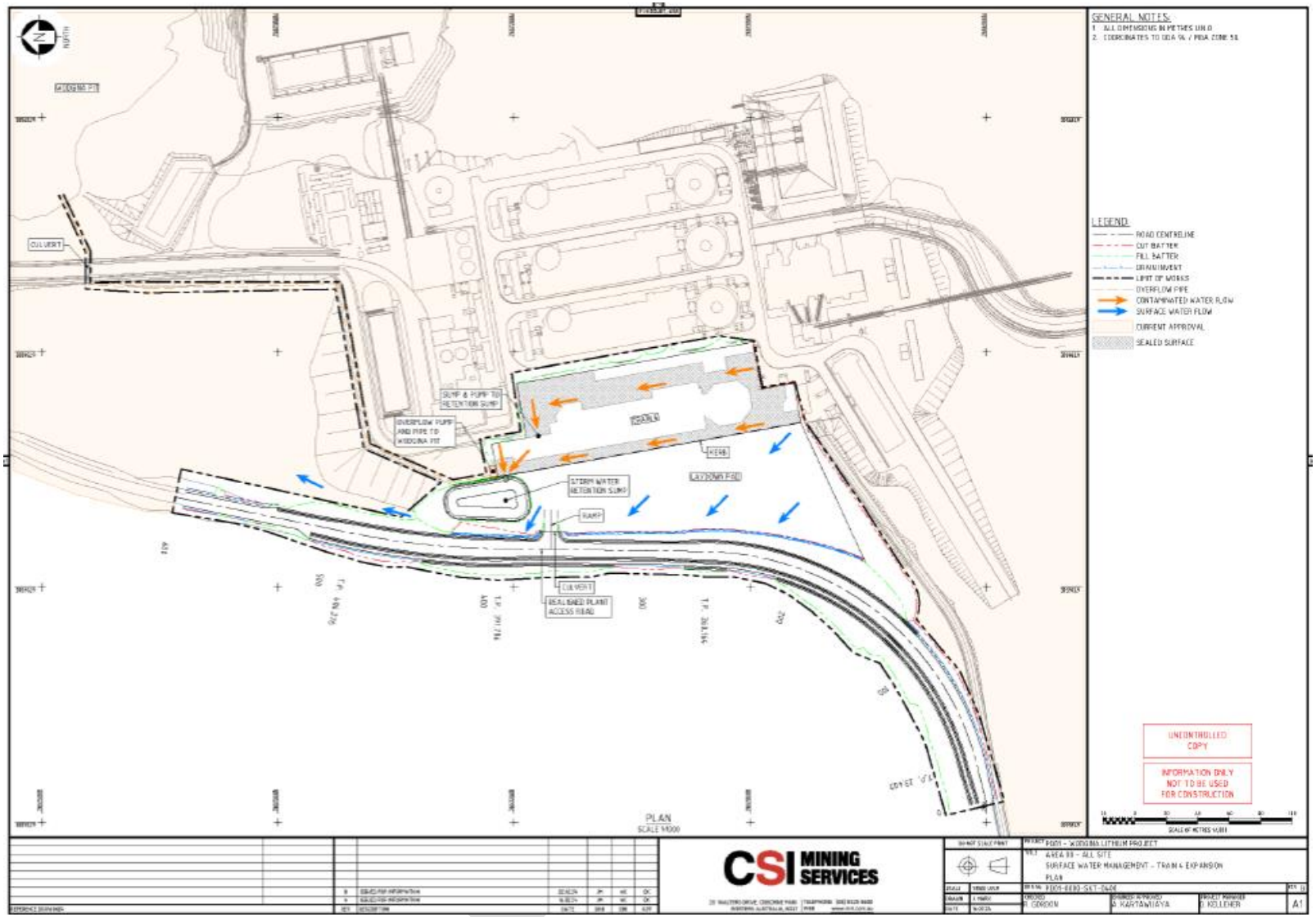

Figure 11: Stormwater management

Emission and monitoring locations

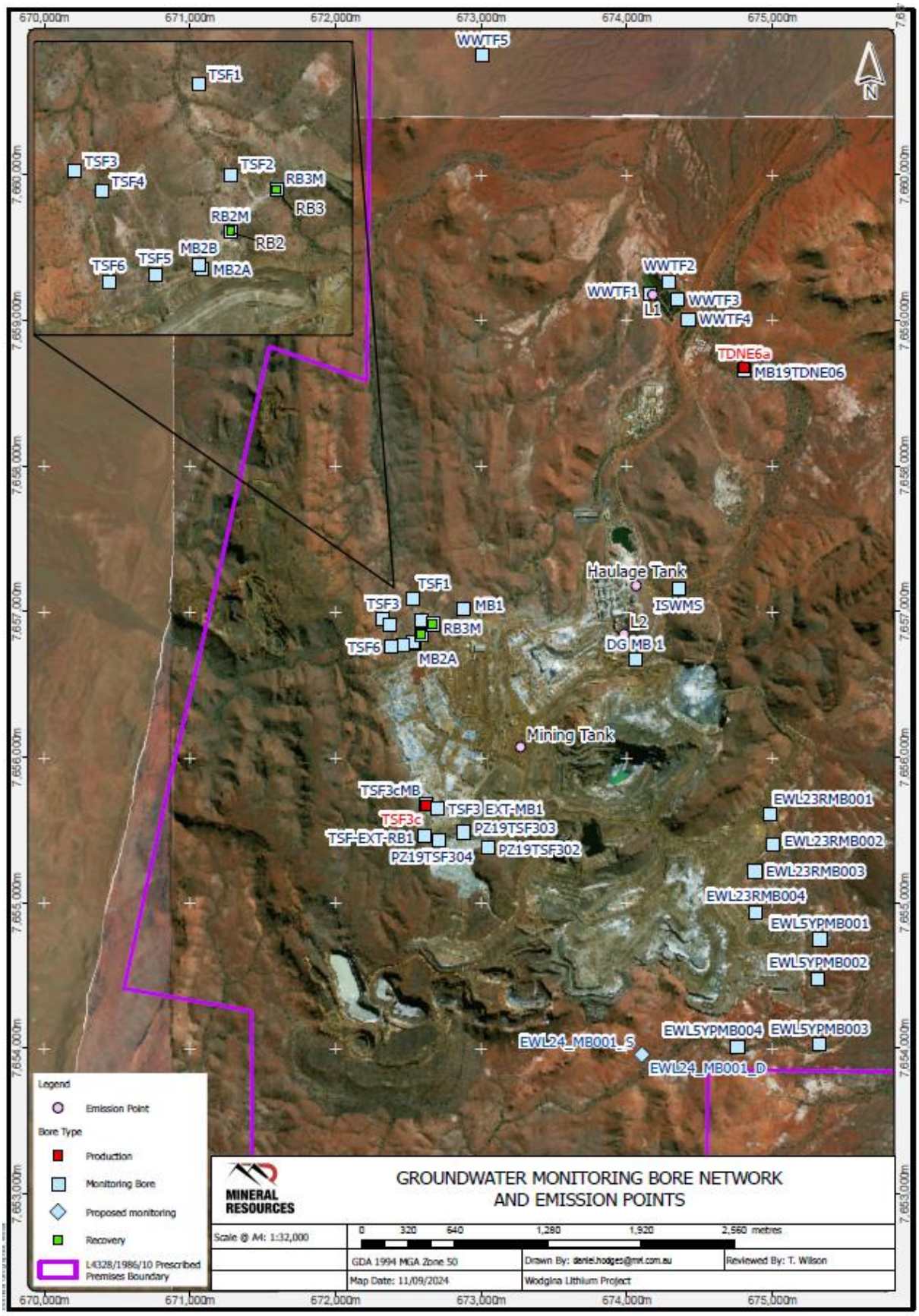

Figure 12: Location of emission points and monitoring locations

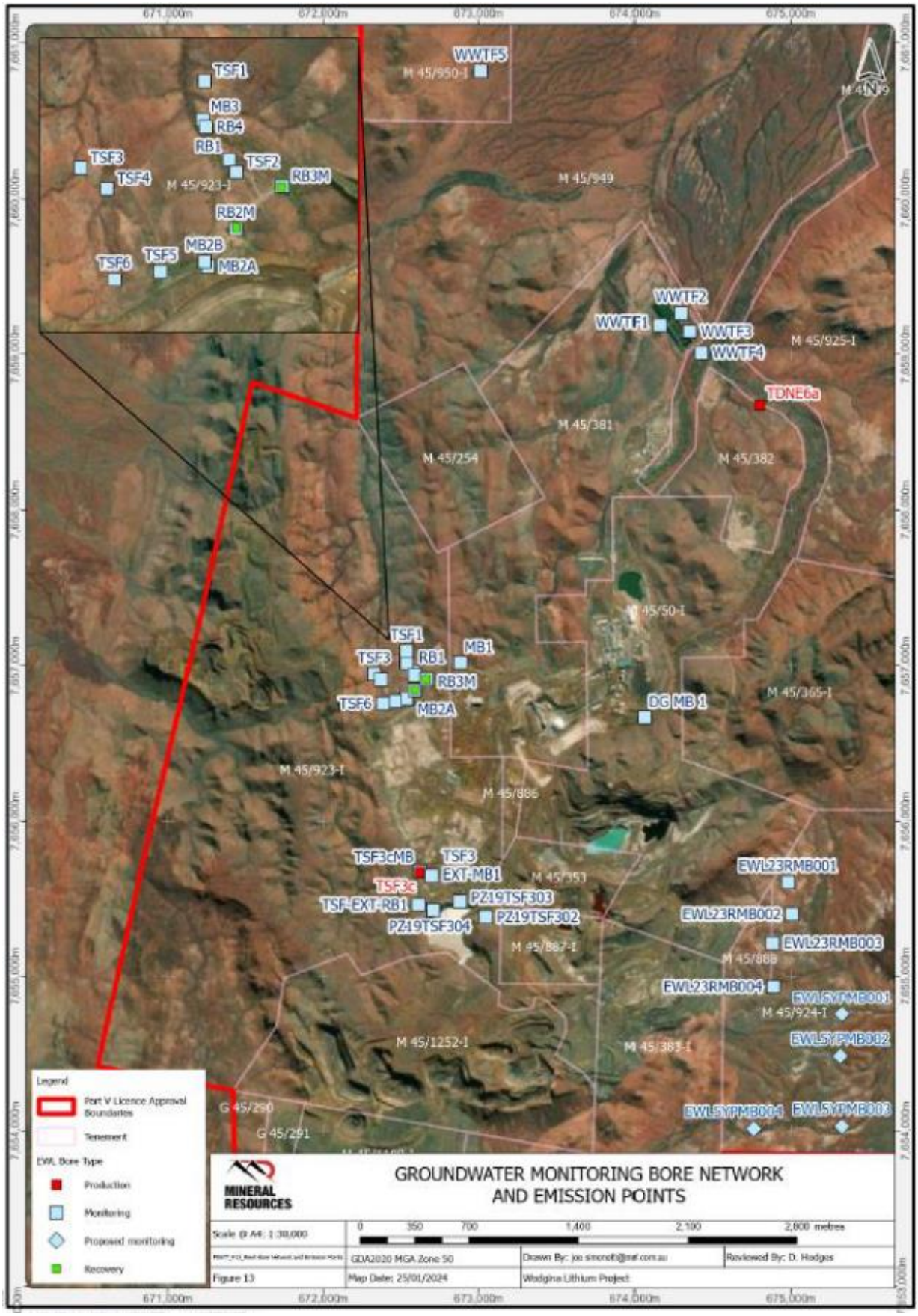

Figure 13: Location of emission points and monitoring locations

Schedule 2: Infrastructure and equipment

Table 17: Infrastructure and Equipment

	Infrastructure and equipment	Infrastructure location
Category 5: Processing or beneficiation of metallic or non-metallic ore		
1	Fixed plant	As shown in Schedule 1, Figure 6
2	Three mobile crushing and screening plants	As shown in Schedule 1, Figure 1
3	Beneficiation plant consisting of four trains. Each train consisting of: • Grinding circuits (ball mills), each with a nominal feed rate of 231 dry t/h; • Iron removal circuits consisting of low intensity magnetic separators followed by wet high intensity magnetic separators; • Tantalum recovery circuits; • De-slime hydrocyclone circuits; • Sulfide pre-flotation circuits consisting of pre-flotation roughers and cleaner cells; • Flotation circuits consisting of rougher, scavenger, first cleaner, second cleaner and third cleaner stages to recover spodumene; and • Spodumene concentrate dewatering circuits consisting of a concentrate thickener, concentrate storage tank and a belt filter.	As shown in Schedule 1, Figures 8 and 10
4	Process Water Pond	As shown in Schedule 1, Figure 8
5	Spodumene concentrate storage areas	As shown in Schedule 1, Figures 7 and 8
6	Tantalum storage area	Not shown
7	Retention Sump and T4 stormwater retention sump	As shown in Schedule 1, Figure 8
8	Tailings delivery and return water pipelines	Not shown
9	Decant return pump skid mounted system	Not shown
10	Dry stack tailings plant including conveyor and radial stacker Dry tailings load out area	Dry stack tailings plant not shown Dry tailings load out area as shown in Schedule 1, Figure 7

	Infrastructure and equipment	Infrastructure location
Category 52: Electric power generation		
11	Thirty two x 2 MW natural gas generators	As shown in Schedule 1, Figure 9
Category 54: Sewage facility		
12	WWTF consisting of: • Eight lined facultative treatment ponds. • Five lined evaporation ponds.	As shown in Schedule 1, Figure 4
Category 57: Used tyre storage		
13	Used tyre storage areas	At the locations shown in Schedule 1, Figure 3
Category 64: Class II putrescible landfill site		
14	Landfill site	As shown in Schedule 1, Figure 2
15	EWL	As shown in Schedule 1, Figure 2
Category 85B: Water desalination plant		
16	RO plant consisting of three trains and two containerised RO systems	As shown in Schedule 1, Figure 5

Schedule 3: Reporting & notification forms

Licence:	Licence holder:
Form: N1	Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence number	
Name of operator	
Location of premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of licence holder	
Date	