Licence number	L4247/1991/13
Licence holder	Talison Lithium Australia Pty Ltd
ACN	139 401 308
Registered business address	Level 17, 216 St Georges Terrace PERTH WA 6000
DWER file number	2012/0071641 | INS-0001134
Duration	14/12/2013 to 13/12/2026
Date of amendment	4 September 2025
Premises details	Talison Lithium Mine Maranup Ford Road GREENBUSHES WA 6254 Legal description - Mining tenements M01/3, M01/6, M01/7, M01/8, M01/9 and M1/16 L70/232 and L70/244 General purpose lease G01/1 and G1/04 As defined by the Premises maps in Schedule 1 and coordinates in Schedule 3

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production / design capacity**
Category 5: Processing of beneficiation of metallic or non-metallic ore	7,100,000 tonnes beneficiated per annual period. 5,200,000 tonnes of tailings deposited per annual period
Category 54 – sewage facility: premises – (a) on which sewage is treated (excluding septic tanks): or (b) from which treated sewage is discharged onto land or into waters	187.5 m^3 per day
Category 61 - Liquid waste facility - premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	15,000 tonnes per year

This amended licence is granted to the licence holder, subject to the attached conditions, on 4 September 2025 by:

Michael Greenslade Date: 2025.09.04 16:04:24 +08'00'

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

Licence history

The licences and works approvals issued for the premises prior to the amendment of this licence are:

Date	Reference number	Summary of changes
14/12/2007	L4247/1991/11	Licence re-issue
14/12/2010	L4247/1991/12	Licence re-issue
28/07/2011	W4927/2011/1	Works approval to upgrade and increase the capacity of the Lithium processing facility. Surface water management plan developed by licence holder as a works approval condition.
12/12/2013	L4247/1991/13	Licence re-issue
26/04/2016	L4247/1991/13	Department of Water and Environmental Regulation (DWER) initiated amendment to extend the expiry date of the licence from 13 December 2016 to 13 December 2026.
15/07/2016	L4247/1991/13	Amendment to authorise embankment raise to TSF2 to RL 1280 m. New groundwater monitoring program required by Condition 3.4.1. Ambient surface water quality limits set for receptor downstream dam, Norilup Dam. Improvement condition added to the licence with 7 improvement requirements to improve monitoring and management of contaminants discharged to ambient surface water.
05/05/2017	L4247/1991/13	Amendment Notice 1: Amendment to convert IR1 – IR7 requirements to conditions where appropriate, following receipt of licence holder submissions. Amendments also made to existing conditions 7 and 15, 42 and 44. Additional change made to condition 48 following comments made by the Department of Parks and Wildlife on the 23 December 2016 draft amendment notice. The department made administrative changes to following publication of new template for AACRs.
30/08/2017	L4247/1991/13	Amendment Notice 2: Amendment to authorise construction of an additional chemical grade lithium processing plant, including ROM pad and crusher.
12/03/2018	L4247/1991/13	Amendment Notice 3: Amendment to authorise installation of additional 3 stage crushing circuit, reverse osmosis water treatment plant and clear water dam (to replace the existing clear water pond) and associated supporting infrastructure including piping. Amendment to list of groundwater bores to be monitored.
29/04/2020	L4247/1991/13	Amendment to authorise installation of new Arsenic Remediation Unit, updating conditions to reflect the installation of Clear Water Dam, and DWER initiated amalgamation of previous Amendment Notices 1-3.
22/12/2021	L4247/1991/13	Amendment to update registered business and mailing addresses
27/07/2021	L4247/1991/13	Amendment to update infrastructure requirements for the embankment raise of TSF2 to RL 1280 m. Changes include new designs, buttress works, additional underdrainage and ground works to improve stability.

Date	Reference number	Summary of changes
14/12/2022	L4247/1991/13	Amendment for: • the operation of a tailings retreatment plant (to retreat tailings from disused tailings storage facility, TSF1) and an increase in throughput from 4.7 million tonnes per annum (Mtpa) to 5 Mtpa beneficiated (additional 300,000 tonnes); • operation of the Water Treatment Plant, Arsenic Remediation Unit and Water Treatment Facility.
12/07/2023	L4247/1991/13	Amendment to increase tailing retreatment plant processing throughput to 2.1 Mtpa (additional 1.8 Mtpa), incorporate dust monitoring controls from W6283/2019/1 and other administrative amendments.
28/08/2023	L4247/1991/13	Amendment to authorise temporary deposition and storage of up to 900,000 m^3 of 'dry/moist' tailings from TSF2 to TSF1 and other administrative amendments.
03/10/2023	L4247/1991/13	DWER initiated amendment to: • fix typological error in the production capacity table for category 5 from 6,100,000 tonnes to 7,100,000 tonnes beneficiated per annual period; and • update the meteorological station height in condition 29 Table 14.
01/08/2024	L4247/1991/13	Amendment to authorise: • increase of category 5 tailings deposition throughput from 5,000,000 tonnes to 5,200,000 tonnes per annual period; • operation of TSF4 cell 1a to an embankment height of 1261 mRL; • operation of mine village WWTP for a throughput of 187.5 m^3 per day; • administrative amendments to remove redundant conditions; • addition of revised annual ecological assessment condition; • update prescribed premises to include infrastructure and activities under W6832/2023/1; and • DWER initiated amendments to update dust management conditions to incorporate Licence Holder's Trigger Action Response Plan.
01/07/2025	L4247/1991/13	Amendment to: • ongoing operation of TSF4 Cell 1b and Stage 1 Cell 2 to an embankment height of 1,265 m RL; • amendments to operational requirements for the TSF1 retreatment and excavation activities; • assessments to deviations identified during time limited operations; • remove existing bore from groundwater monitoring program; • amendments to seepage collection sumps; and • amendments to freeboard monitoring for Mine Water Circuit water bodies.
04/09/2025	L4247/1991/13	Amendment to include Category 61: Liquid waste facility authorising the acceptance of liquid waste on the premises associated with product storage at the port.

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:

Waste acceptance

1. The licence holder must only accept onto the premises waste of a liquid waste type, which does not exceed the corresponding rate at which waste is received, and which meets the corresponding acceptance specification set out in Table 1.

Table 1: Types of waste authorised to be accepted onto the premises

Waste type	Rate at which waste is received	Acceptance specification
Arsenic and arsenic compounds	15,000 tonnes per annual period	Liquid waste sourced only from the Licence Holder's operations at the Port of Bunbury (Berth 8) Delivered to the premises in enclosed tanker trucks and unloaded at the Chemical Grade Plant 2 Plant Wide Wedge Pit for treatment within the premises mine water circuit.

Infrastructure and equipment

2. The licence holder must ensure that the materials listed in Table 2 are only discharged into containment cells and/or dams or ponds with the relevant infrastructure requirements and at the locations specified in Table 2.

Table 2: Infrastructure and equipment requirements

Containment cell or dam number(s)	Material	Infrastructure requirements
TSF1	Emergency tailings deposition of up to 900,000 m^3 for a period not exceeding 24 months.	(a) Embankment height up to 1,282 mRL; (b) Working decant system; and (c) Emergency tailings deposition must: i. not occur in the same area as tailings reprocessing and must be clearly separated by a causeway, as shown in Figure 15 of Schedule 1; ii. utilise water cart to wet down dust-generating surfaces to minimise dust emissions during deposition; iii. be graded north towards a stormwater collection sump, which is pumped to the decant pond at TSF2; and iv. maintain a minimum freeboard of one metre from the embankment crest.
TSF2	Tailings from: (a) onsite mining of the lithium ore body; and (b) tailings from tailings retreatment plant.	(a) Buttress; (b) Two seepage collection trenches equipped with drainage pipes; pipelines (Figure 8 of Schedule 1); (c) One upstream drainage trench positioned 25 m and 35 m from the raise centreline along the southern and western walls at RL 1270 m (blue line, Figure 8 of Schedule 1); (d) One upstream drainage trench positioned 25 m from the raise centreline along the southern and western wall (red line, Figure 8 of Schedule 1); (e) Trenches leading to Sump 01 (S1), Sump 02 (S2), Sump 03 (S3); (f) Collected water at S1, S2 and S3 is pumped back to Mine Water Circuit; (g) Embankment rises to 1,280 m and associated infrastructure

Containment cell or dam number(s)	Material	Infrastructure requirements
		in accordance with following documents: i. *Talison Lithium Australia – Tailings Storage Raise 2021 Licence Amendment Application and Supporting documentation.* (h) Excavation of tailings for deposition at TSF1 must: i. not exceed 900,000 m^3 in aggregate; ii. only commence where a test pit has been visually inspected for seepage inflow, pit wall slumping and/or instability and the tailings are classified as either 'dry' or 'moist', in accordance with *AS 1726:2017*; iii. be undertaken in strips with nominal width no greater than 60 m, depth no greater than two metres and a separation distance of at least 10 m between each strip; iv. be graded away from the nearest embankment crest; v. maintain a separation distance of at least 200 m from the boundary of the decant pond; vi. follow the layout shown in Figure 15 of Schedule 1; and vii. utilise water cart to wet down dust-generating surfaces to minimise dust emissions during excavation.
TSF4 cell 1 and cell 2	(a) Tailings from onsite mining of the lithium ore body; (b) Tailings from tailings retreatment plant; and (c) Treated effluent from the WWTP that meets the discharge specifications listed in Table 7.	(a) Embankment height of 1265 mRL; (b) Pond height authorised to 1264.1 m RL to allow for 0.9 m freeboard and tailings beach height authorised to 1264.7 m RL (0.3 m below crest elevation); (c) The pumping capacity of the decant system to be maintained to the requirements of the TSF4 water balance and in order to minimise the size of the decant pond as much as practicable; (d) Underdrainage system: i. Freeboard on seepage ponds (Sump A, Sump B and Sump C) to allow for 10% annual exceedance probability 24-hour event; ii. Automatic valve shut off (at Sump A) in case of water level exceedance or pump failure; iii. Level sensors and automatically activated standby pump if high water levels are reached (at Sump B); iv. Two electric pumps on duty/standby configuration, additional diesel standby pump, level sensors (low, high, high-high), flow meter and manual shut off valves installed (at Sump C); v. Two submersible pumps on duty/standby configuration (at Sump D) vi. Operators are required to undertake regular inspections of Sump C and D to ensure that pumps are working adequately; vii. Seepage ponds sumps to be equipped with remotely operated pumps; and viii. Sufficient standby back up pumps must be available for rapid deployment should primary sump pumps fail; (e) Inspections to be taken twice daily on the: i. Size of the decant pond; ii. Decant pumping system; and iii. Seepage pond freeboard and function of the pumps; (f) All tailings, decant and seepage pipelines to be:

Containment cell or dam number(s)	Material	Infrastructure requirements
		i. Equipped with telemetry and pressure sensors to detect leaks and failures; ii. Equipped with automatic cut-outs in the event of a pipe failure; and iii. Equipped with leak monitoring which triggers the related pump/s to automatically shut down in High setpoint is exceeded.
Emergency Dump Pond	Tailings from the Central Tailings Pump Station.	(a) Freeboard 230 mm; (b) Utilised only for the purpose of secondary contaminant during emergency events (spills or power failure); (c) Tailings material excavated from the emergency dump pond must only be disposed within authorised TSFs; and (d) Each time the Emergency Dump Pond is used (receives tailings), the Licence Holder must notify with CEO in writing within 7 calendar days, and submit a report within 30 calendar days of incident on the circumstances under which the facility was used and the measures taken to prevent environmental impact as a result of seepage from the facility.
Clear Water Dam	Tailings decant, mine dewater, contaminated stormwater, process water (seepage return and decant), site runoff, overflows from the Lithium Chemical Grade Processing (CGP) Plant 1 siltation trap and CGP Plant 2 wedge pit, treated water from the reverse osmosis water treatment plant and arsenic remediation unit decant water from the WTF, lithium concentrated effluent from the WTP and arsenic concentrated effluent from the ARU	(a) Underdrainage system; (b) Seepage cut-off trenches; (c) Arsenic remediation unit to treat water within the mine circuit; (d) Water levels within the dam to be managed in such a way to balance flows to Austins Dam, whilst maintaining sufficient capacity within the dam and the mine water circuit for winter rainfall events (May to September); and (e) Visual marker installed along embankment for freeboard monitoring.
Austins Dam	(a) Process water directly from Clear Water Dam; (b) Treated process water from the Reverse Osmosis Water Treatment Plant and Arsenic Remediation Unit (via the water treatment facility); and (c) Clean and potentially contaminated stormwater runoff from areas adjacent to dam.	(a) Freeboard to allow for a 1% annual exceedance probability 72-hour event; and (b) Visual marker installed along embankment for freeboard monitoring.
Southampton Dam	(a) Process water directly from Austins Dam; (b) Treated process water from the Reverse Osmosis Water Treatment Plant and Arsenic Remediation Unit (via the water treatment facility); and (c) Clean and potentially	(a) Freeboard to allow for a 1% annual exceedance probability 72-hour event; and (b) Visual marker installed along embankment for freeboard monitoring.

Containment cell or dam number(s)	Material	Infrastructure requirements
	contaminated stormwater runoff from areas adjacent to dam.	
Cowan Brook Dam	(a) Contaminated and clean stormwater; (b) Overflows from Austins Dam; (c) Emergency overflows from southern seepage recovery sump; (d) Treated process water from the Reverse Osmosis Water Treatment Plant and Arsenic Remediation Unit (via the water treatment facility)	(a) Freeboard to allow for a 1% annual exceedance probability 72-hour event; (b) Visual marker installed along embankment for freeboard monitoring; and (c) From 1 January 2024, freeboard requirement of 0.5 m plus additional freeboard to allow a 1% annual exceedance probability 72-hour event.
Cornwall North Pit Cornwall Pit	(a) Mine dewater; (b) Stormwater; and (c) Process water.	None specified.
Vultans Pit	(a) Mine dewater; and (b) Stormwater.	None specified.

3. The licence holder must operate TSF2 such that the freeboard allows for capacity for 1-in-100 year 72-hour rainfall events, additional 0.5 m contingency and 0.1 m for wave run-up. At RL 1,270 m, the maximum operating pond level must not exceed RL 1269.02 m.

4. The licence holder must ensure inspections of surface water infrastructure are managed in accordance with the part of the document and any updates to the management plan specified in Table 3.

Table 3: Management plan

Management plan reference	Parts	Date of document
Surface Water Management Plan	Section 10.1	23 September 2015, Version 5

5. Overflows from the TSF2 Sump 02 and 03 (denoted as S2 and S3 in Figure 2 of Schedule 1) via the Secondary Recovery Seepage Sump to Cowan Brook Dam are only permitted as a result of power failures or extreme rainfall events (an event having rainfall equivalent to a 1% annual exceedance probability over a period of at least three hours, as defined by the Bureau of Meteorology's 2016 Rainfall IFD System). Portable pumping must be installed within 24 hours of any such outage at S2 and/or S3 to return seepage to the mine water circuit. The downstream Secondary Recovery Seepage Sump (SRSS) pump is not allowed to be bypassed.

6. The licence holder must ensure that, where wastes produced on the prescribed premises are not taken to third-party premises for lawful use or disposal, they are managed in accordance with the requirements in Table 4.

Table 4: Management of waste

Waste type	Management strategy	Requirements
Inert Waste Type 1 Inert Waste Type 2 Clean Fill	Receipt, handling and disposal of waste by landfilling	(a) No more than 450 tonnes per year of all waste types cumulatively must be disposed of by landfilling; (b) Disposal of waste by landfilling must only take place within the waste rock dump area; (c) Waste must be placed in a defined trench or within an area defined by earthen bunds; (d) The active tipping area must be restricted to a maximum linear length of 30 m; and (e) Construction, operation and decommissioning of landfill cells can occur within the defined landfill area, providing there is no waste within: i. 100 m of any surface water body; and ii. 3 m of the highest level of the water table aquifer. Figure 2 of Schedule 1 shows the approximate landfill location within the Floyds WRL.
Used Tyres[1]	Burial	(a) Used tyres must only be buried in the waste rock dump; and (b) Tyres must be buried in batches separated from each other by at least 100 mm of soil/waste rock and each consisting of not more than 1,000 whole tyres.

Note 1: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

7. The licence holder must ensure that cover is applied and maintained on landfilled wastes in accordance with Table 5 and that sufficient stockpiles of cover are always maintained on site.

Table 5: Cover requirements

Waste type	Material	Depth	Timeframe
All waste[1]	Inert and incombustible material	500 mm	Within three months of the final waste load in each defined bay.

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

8. The licence holder must implement security measures at the landfill area to prevent unauthorised access to the site.

9. The licence holder must:

(a) undertake inspections as detailed in Table 6;

(b) where an inspection requirement as detailed in Table 6 is not met, take corrective action within 30 calendar days to mitigate adverse environmental consequences; and

(c) maintain a record of all inspections undertaken.

Table 6: Inspection of infrastructure

Scope of inspection	Inspection requirement	Frequency of inspection	Location
Austins Dam; Southampton Dam	Freeboard to all dams to be no less than to allow for a 1% annual exceedance probability 72-hour event.	Weekly	As shown in Figure 2 of Schedule 1.
Cowan Brook Dam	Visual inspection to confirm freeboard to allow 1% annual exceedance probability 72-hour event plus 0.5 m.		
Tailings Retreatment Plan Settlement Pond	Visual inspection to confirm integrity of liner, requirement to remove sediment, and whether the pond is overflowing via the spillway.	Daily	As shown in Figure 10 of Schedule 1.
Tailings pipelines (including those between Tailings Retreatment Plant and TSF2)	Visual inspection to confirm integrity of pipes and no leaks present.		
Tailings pipelines (including those to TSF4)			As shown in Figure 16 of Schedule 1
Concentrate Storage Area, including Wedge Pit, Plant Wide Wedge Pit, and South West Detention Pond	Visual inspection to confirm capacity is available.		As shown in Figure 6 of Schedule 1.
Reverse Osmosis Water Treatment Plant	Visual inspection to confirm integrity of pipes and containment infrastructure and that no leaks are present.		As shown in Figure 9 of Schedule 1.
Arsenic Remediation Unit			
Reverse Osmosis Water Treatment Pant pipelines and bunding			
Water Treatment Facility pipelines and bunding			

10. The licence holder must construct/install the infrastructure listed in Table 7, in accordance with:

(a) the corresponding design and construction/installation requirements;

(b) at the corresponding infrastructure location; and

(c) within the corresponding timeframe,

as set out in Table 7.

Table 7: Infrastructure construction requirements

Item	Infrastructure	Construction/ installation requirements	Infrastructure location	Timeframe
1	Continuous AS PM_{10} Monitor North	(a) Compliant with Australian Standard methods for sampling and analysis; (b) Provides real-time data at minimum 5-minute intervals; and (c) Siting compliant with AS/NZS 3580.1.1.	As indicatively shown in Figure 5 and Figure 14 of Schedule 1, noting that these are required to be co-located within the town.	30 November 2023 or prior
2	Meteorological Station (Greenbushes)	(a) Compliant with AS/NZS 3580.14; and (b) Capable of monitoring wind speed, wind direction, ambient air temperature, relative humidity and atmospheric pressure.		

Item	Infrastructure	Construction/ installation requirements	Infrastructure location	Timeframe
3	PM_{10} high-volume sampler	(a) Compliant with AS/NZS 3580.9.6 – *Determination of suspended particulate matter – PM_{10} high volume sampler with size selective inlet – Gravimetric method*; and (b) Siting compliant with AS/NZS 3580.1.1.		
4	Flow measure	Located on Clear Water Dam spillway to measure overflows from Clear Water Dam to Austins Dam.	As indicatively shown in Figure 17: Clearwater Dam Infrastructure and spillway	30 June 2025
5	Seepage underdrains between Clear Water Dam and Austins Dam	Following works to be completed including: (a) Refurbishment of v-notch weirs; (b) Development of rating curves; and (c) Installation of flow recording devices.		31 December 2026

11. The licence holder must within 30 calendar days of an item of infrastructure or equipment required by condition 10 being constructed and/or installed:

(a) undertake an audit of their compliant with the requirements of condition 10; and

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

12. The Environmental Compliance Report required by condition 11 must include, as a minimum, the following:

(a) certification from the infrastructure installer that the items of infrastructure specified in Table 7 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 contains the printed name and position of that person.

13. The licence holder must ensure that the site infrastructure and equipment listed in Table 8 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 8.

Table 8: Infrastructure and equipment operational requirements

	Site infrastructure and equipment	Operational requirement	Infrastructure location
1	Tailings retreatment – mobile machinery associated with excavation of tailings from TSF1	(a) Use of water carts within the tailings excavation area to wet down dust-generating surfaces and ensure that dust generation is minimised; (b) Use of mulch or dust suppressants to any cleared (previously mined or excavated and non-active mining) areas within the tailings excavation area; (c) Reduced speed limits to 30 km/hour; (d) The active mining area to not exceed a total of 10 hectares; and	As shown in Figure 10 of Schedule 1

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		(e) TSF1 to be stripped and mined in 3 ha grid blocks, with only three 3 ha blocks active at any time.	
2	Tailings retreatment – screening equipment	Screening equipment to be fitted with a spray system to avoid dust lift-off and maintain tailings moisture.	
3	Tailings Retreatment Plant, comprising: (a) ROM stockpile pad; (b) Feed preparation area; (c) Tailings thickening tanks; (d) Magnetic separation building; (e) Main plant; and (f) Stormwater drainage infrastructure.	(a) The feed bin to the stockpile to be fitted and operated with a spray system to maintain tailings moisture to prevent dust lift-off; (b) Dust suppressant (water or chemical) to be applied to non-active ROM pad stockpiles as required to prevent dust lift-off; (c) Front end loaders (FEL) operating on ROM stockpile pad to cease operating if the PM_{10} 15-minute rolling average trigger value in (d) Table 17 is reached and sustained for one hour and dust is observed leaving TSF1 boundary at this time (operations can recommence once the PM_{10} 15-minute rolling average returns below the trigger value for a sustained 30-minute period) (e) Final product to be stockpiled within a covered bund with 5-8% moisture content to prevent dust lift-off; (f) Maintain stormwater drainage system (including open drains, culverts, pits and pipes) to minimise infiltration of process liquid and contaminated stormwater to subsurface soils; (g) Stormwater runoff from the TRP plant is directed to the TRP settlement pond; and (h) Stormwater runoff from the ROM stockpile pad and feed preparation area is directed to Sump 3.	
4	Tailings retreatment plant – settlement pond	(a) Liner integrity to be maintained; (b) Any overflow events are to be recorded with date, duration and volume; and (c) Designed to ensure overflow is directed to Tin Shed Dam.	
5	Reverse Osmosis Water Treatment Plant	(a) For treatment of contaminated water from the Mine Water Circuit; (b) Minimum treatment performance maintained to ≤2mg/L lithium at the discharge point averaged over a calendar month; (c) Drains and sumps to be maintained with sufficient capacity to allow capture of any spills; and (d) Solid waste (lithium concentrate) to be removed off-site by an appropriately licensed facility within 30 calendar days following separation from the liquid component by the WTP.	Location as shown in Figure 9 of Schedule 1 Layout as shown in Figure 11 of Schedule 1
6	Arsenic Remediation Unit	(a) For treatment of contaminated water from Clear Water Dam, C3 pit and other sources as required; (b) Minimum treatment performance maintained to ≤0.5mg/L arsenic at the discharge point, averaged over a calendar month; and (c) Drains and sumps to be maintained with sufficient capacity to allow capture of any spills.	Location as shown in Figure 9 of Schedule 1 Layout as shown in Figure 7 of Schedule 1
7	Water Treatment Facility	(a) For treatment of effluent from the WTP and ARU for removal of solids; (b) An alarm system must be operated to notify the operator of high tank levels within the WTF; and (c) Solid waste (arsenic and lithium concentrate) to be removed off-site to an appropriately licensed facility within 30 calendar days following separation from the liquid component by the WTF.	Location as shown in Figure 9 of Schedule 1

	Site infrastructure and equipment	Operational requirement	Infrastructure location
8	Wastewater Treatment Plant (WWTP)	(a) Treated effluent to meet the following output standards: i. pH 6.5 – 8.5; ii. Residual free chlorine 0.2 mg/L to 2.0 mg/L; and iii. Turbidity <2 NTU; (b) All treated effluent is stored in the treated effluent holding tanks prior to discharge or disposal; (c) Treated effluent that does not meet discharge limits listed in Table 11 is to be stored in the treated effluent buffer storage tank prior to: i. removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; or ii. re-circulation back through the WWTP; (d) Sludge is contained within a sealed sludge tank prior to removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; (e) Inspections are conducted daily to verify WWTP operation and function, and to ensure that containment infrastructure is maintained and operational; (f) Inspections are conducted daily on the effluent pipeline (when in use) to confirm integrity of pipes and no leaks are present; (g) In the event of a leak/spill from the WWTP or effluent pipeline, the source will be isolated, and any contaminated soil remediated or disposed of to an appropriately licensed facility; and (h) Maximum daily throughput of 187.5 m^3/day.	Located as shown in Figure 16 Schedule 1

14. The licence holder must:

(a) retrofit pipelines identified by the assessment titled "*Talison Lithium Pty Ltd, Pipeline Leak Detection Plan; INF-TE-0002, 30 June 2023*";

(b) submit to the CEO compliance documentation as these works are completed; and

(c) complete all works specified in 14(a) by 01 July 2025.

Emissions and discharges

Point source emissions to surface water

15. The licence holder must ensure that where waste is emitted to surface water from the emission points in Table 9 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this licence.

Table 9: Emission points to surface water

Emission point reference, as shown in Figure 2 of Schedule 1	Source
Carters Fam	Contaminated stormwater from disturbed mine work areas, including mine waste dumps.
Floyds North	
Floyds South	
Cemetery	Contaminated stormwater from disturbed mine work areas, including mine waste dumps and seepage from TSF1.

16. The licence holder is not permitted to discharge off the premises from Southampton Dam or from Cowan Brook Dam.

Dust Management

17. The licence holder must proactively manage dust generating activities on the premises by:

(a) ensuring that all dust suppression and dust extraction equipment used on the premises to manage dust emissions from plant, equipment and processing infrastructure is maintained in good working condition;

(b) proactively manage visible dust emissions observed on the premises through the application of additional dust suppression to plant and equipment, or through the use of watercarts on stockpiles, exposed areas, access roads as required;

(c) utilising weather forecasting tools to inform daily work activities and dust suppression activities to target and mitigate dust emissions from premises activities.

Monitoring

General monitoring

18. 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 surface water sampling is conducted in accordance with AS/NZS 5667.4, AS/NZS 5667.6 and AS/NZS 5667.9, as relevant;

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

(e) all sediment sampling is conducted in accordance with AS/NZS 5667.12;

(f) all microbiological samples are collected and preserved in accordance with AS/NZS 2031;

(g) all non-continuous sampling and analysis for air monitoring required by conditions of this licence is conducted by companies and laboratories with current NATA accreditation for the methods and analysis specified; and

(h) laboratory sample must be analysed using the appropriate limit of reporting as to allow comparison with relevant environmental guidelines.

19. The licence holder must ensure that:

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

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

(c) six-monthly monitoring is undertaken at least five months apart; and

(d) annual monitoring is undertaken at least nine months apart.

20. The licence holder must record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.

21. The licence holder must ensure that all monitoring equipment used on the premises to comply with the conditions of this licence is operated and maintained as per manufacturer instructions, and that all monitoring data are recorded and securely archived.

22. 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.

Monitoring of point source emissions to surface water

23. The licence holder must undertake the monitoring in Table 10 according to the specifications in that table.

Table 10: Monitoring of point source emissions to surface water

Monitoring point reference, as shown in Figure 2 of Schedule 1	Process description	Parameter[1]	Unit	Frequency	Averaging period	Method
Cowan Brook Dam	Discharge from Cowan Brook Dam to Norilup Dam (off premises)	Flow	m^3	Each event	-	None specified
		pH	-		Spot sample	As per condition 18
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Cowan Brook Dam[3]	Seepage flow from Cowan Brook Dam	Flow rate	m^3/hr	Monthly	-	None specified
		pH	-	Monthly	Spot sample	As per condition 18
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Southampton Dam	Seepage flow from Southampton Dam	Flow rate	m^3/hr	Monthly, after Southampton Dam wall raise to 1,260.5 mRL has taken place and no later than 01 July 2026	-	None specified
		pH	-		Spot sample	As per condition 18
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Floyds North	Surface water discharge off premises	Flow	m^3/hr	Each event	-	None specified
		pH	-	One event per quarter[2]	Spot sample	As per condition 18
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				

Monitoring point reference, as shown in Figure 2 of Schedule 1	Process description	Parameter[1]	Unit	Frequency	Averaging period	Method
Floyds South	Surface water discharge off premises	Flow	m^3/hr	Each event	-	None specified
		pH	-	One event per quarter[2]	Spot sample	As per condition 18
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Carters Farm	Surface water discharge off premises	pH	m^3/hr	One event per quarter[2]	Spot sample	As per condition 18
		EC	-			
		Lithium	µS/cm			
		Arsenic	mg/L			
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Cemetery	Surface water discharge off premises	pH	m^3/hr	One event per quarter[2]	Spot sample	As per condition 18
		EC	-			
		Lithium	µS/cm			
		Arsenic	mg/L			
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				

Note 1: pH and EC in-field non-NATA accredited analysis permitted.

Note 2: 'Event' refers to a rainfall event of 24-hour duration or more.

Note 3: This sampling site is located at the base of the Cowan Brook Dam, downstream of the location shown in Figure 2 (upstream of Cowan Brook).

Process monitoring

24. The licence holder must undertake the monitoring in Table 11 and Table 12 according to the specifications in that table.

Table 11: Process monitoring

Monitoring point reference, as shown in Figure 2 of Schedule 1	Process description	Parameter	Unit	Frequency	Method
Reverse osmosis water treatment plant	Volume of contaminated water treated	Volume	m^3	Monthly	None specified
	Volume of treated process water transferred back to the mine water circuit				
	Volume of liquid effluent produced				
	Weight of lithium solids removed	Weight	tonnes	Monthly	

Monitoring point reference, as shown in Figure 2 of Schedule 1	Process description	Parameter	Unit	Frequency	Method
Arsenic remediation unit	Volume of contaminated water treated	Volume	m^3	Monthly	None specified
	Volume of treated process water transferred back to the mine water circuit				
	Volume of liquid effluent produced				
	Weight of arsenic solids removed	Weight	tonnes	Monthly	
Water treatment facility	Volume of effluent from the WTP and ARU treated	Volume	m^3	Monthly	None specified
	Volume of decant transferred to Clear Water Dam				
	Weight of arsenic/lithium solids removed	Weight	tonnes	Monthly	
Austins Dam	Siphon from Austins Dam to Cowan Brook Dam	Volume	m^3	Total m^3 per event	None specified
Austins Dam and Clear Water Dam Seepage Pond	Seepage recovered	Volume	m^3	Monthly	Seepage recovered from Austins Dam and Clear Water Dam and returned to Clear Water Dam.
Lithium TG Raw Water Tank	Overflows to ground	Frequency	-	Number of events	None specified
Lithium CG Processing Plant 1 Siltation Trap	Overflow from siltation trap to Austin Dam	Frequency and duration	Hours	Number of events	Recorded events
Lithium CG Processing Plant 2 – Plant Wide Wedge Pit	Overflow from new wedge pit (siltation sump) to Clear Water Dam	Frequency and duration	Hours	Number of events	Recorded events
Secondary seepage recovery sump	Overflow to Cowan Brook Dam	Volume	m^3	Total m^3 per event	None specified

Table 12: Process monitoring – water quality

Monitoring point reference, as shown in Figure 2 of Schedule 1	Parameter	Limit	Unit	Averaging period	Frequency
Reverse osmosis water treatment plant – treated process water	Lithium	2	mg/L	Spot sample	Weekly
Arsenic remediation unit – treated process water	Arsenic	0.5	mg/L	Spot sample	Weekly
Water treatment facility decant (effluent)	Lithium	-	mg/L	Spot sample	Weekly
	Arsenic				

Monitoring point reference, as shown in Figure 2 of Schedule 1	Parameter	Limit	Unit	Averaging period	Frequency
Southampton Dam Austins Dam Cowan Brook Dam	pH[1]	6 – 9	-	Spot sample	Quarterly
	Redox potential (Eh)	-	mV		
	Total dissolved solids	-	mg/L		
	Dissolved oxygen				
	Chloride				
	Nitrate				
	Magnesium				
	Sodium				
	Sulfate				
	Arsenic				
	Cadmium				
	Chromium				
	Cobalt				
	Copper				
	Iron				
	Lithium				
	Manganese				
	Nickel				
	Uranium				
	Thorium				
	Radium 226	-	Bq/L		
	Radium 228				
Clear Water Dam	pH[1]	6 – 9	-	Spot sample	Weekly
	Redox potential (Eh)	-	mV		
	Arsenic	-	mg/L		
	Total dissolved solids	-	mg/L		Quarterly
	Dissolved oxygen				
	Chloride				
	Nitrate				
	Magnesium				
	Sodium				
	Sulfate				
	Cadmium				
	Chromium				
	Cobalt				
	Copper				
	Iron				
	Lithium				
	Manganese				
	Nickel				
	Uranium				
	Thorium				
	Radium 226	-	Bq/L		
	Radium 228				
WWTP outlet prior to discharge, as depicted Figure 16 of Schedule 1.	*E. coli*	1	cfu/100 mL	Spot sample	Monthly[2] Sample collection and preservation as per AS/NZS 5667.1. Analysis as per AS/NZS 5667.10 and conducted by a laboratory with NATA accreditation.
	Thermotolerant coliforms	-			
	BOD	10	mg/L		
	Total Suspended Solids	10			
	Total Nitrogen	15			
	Total Phosphorous	2			
	Total Dissolved Solids	-			
	pH[1]	6.5 – 8.5	pH units	N/A	Continuous
	Residual chlorine	0.2 – 2.0	mg/L		

Monitoring point reference, as shown in Figure 2 of Schedule 1	Parameter	Limit	Unit	Averaging period	Frequency
	Turbidity	2	NTU		
	Cumulative volumetric flow	187.50	m^3/day	Daily	
Liquid waste received at the Chemical Grade Plant 2 Plant Wide Wedge Pit	Arsenic	-	mg/L	Spot sample	Each load accepted per condition 1
	pH[1]	-	pH units		

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

Note 2: In the instance where a sample exceeds the specified limit, the licence holder must investigate and increase the frequency to weekly until such time that the sample no longer exceeds the limit

25. The licence holder must monitor the water balance of each dam in the mine water circuit as detailed in Table 13 according to the specifications in that table.

Table 13: Water balance monitoring of the mine water circuit

Process water dam, as shown in Figure 2 of Schedule 1	Process description	Parameter	Unit	Frequency
Clear Water Dam Austins Dam Southampton Dam Cowan Brook Dam	Volume of all inputs to each dam, including but not limited to: (a) Input from site operation (tailings decant, seepage, stormwater, water treatment effluent[1], treated process water[2] etc.); (b) Overflow events from other water storage infrastructure, including, but not limited to, Processing Plant 1 Siltation Trap and Processing Plant 2 – Plant Wide Wedge Pit; (c) Overflow events from other process water dams; (d) Seepage from other process water dams; and (e) Rainfall.	Volume	m^3	Monthly
	Available capacity	Volume	m^3	Weekly
	Freeboard	Metres below top of dam	m	Weekly
	Volume of all outputs from each dam, including but not limited to: (a) Total seepage from each dam; (b) Overflow events; and (c) Evaporation.	Volume	m^3	Monthly

Note 1: This effluent stream is the lithium and arsenic concentrate byproduct of water treatment by the Water Treatment Plant and Arsenic Remediation Unit, and does not refer to the treated process water stream (i.e., treated to ≤2mg/L lithium and ≤0.5mg/L arsenic).

Note 2: This treated water produced by the Water Treatment Plant and Arsenic Remediation Unit (i.e., treated to ≤2mg/L lithium and ≤0.5mg/L arsenic).

26. The licence holder must undertake monthly monitoring of the water balance for TSF4, commencing 30 September 2024, to confirm assumptions of the preliminary water balance, and (as a minimum) record the following information:

(a) The volume of tailings deposited in each cell of TSF4;

(b) Site rainfall;

(c) Site evaporation;

(d) Decant water recovery volumes;

(e) Volume of recovery from seepage sumps; and

(f) Estimate of seepage losses.

27. From 30 June 2026, the licence holder must ensure that the measurement of evaporation rate required by condition 26(c) is undertaken in a method that includes as a minimum, measurement of wind direction, air temperature, and humidity and calculation of open water evaporation, using an on-site weather station and evaporation pan.

Waste input monitoring

28. The licence holder must record the total amount of waste accepted onto the premises, for each waste type listed in Table 14, in the corresponding unit, and for each corresponding time period, as set out in Table 14.

Table 14: Waste accepted onto the premises

Waste type	Unit	Time period
Arsenic and arsenic compounds	tonnes	Each load accepted at the premises

Ambient air quality and meteorological monitoring

29. The licence holder must undertake the monitoring in Table 15 according to the specifications in that table.

Table 15: Monitoring of ambient air quality

Monitoring point reference, as shown in Figure 5 of Schedule 1	Parameter	Unit[1]	Averaging period	Frequency	Method
Continuous AS PM_{10} Monitor South[2]	Particulates as PM_{10}	$\mu g/m^3$	5 minutes	Continuous	AS/NZS 3580.9.8
Continuous AS PM_{10} Monitor North[3]					
Osiris (North)[4]	Total suspended particulates	$\mu g/m^3$	5 minutes	Continuous	Per manufacturer's instruction
Osiris (Southeast)[5]					

Note 1: All units are referenced to STP dry.
Note 2: Location (Easting: 415687, Northing: 6250561)
Note 3: Location (Easting: 412871, Northing: 6253973)
Note 4: Location (Easting: 412905, Northing: 6253810)
Note 5: Location (Easting: 415707, Northing: 6250551)

30. The licence holder must monitor and record the ambient meteorological conditions at the premises in accordance with the requirements specified in Table 16 and record the results of all such monitoring.

Table 16: Monitoring of ambient meteorological conditions

Monitoring point reference, as shown in Figure 5 of Schedule 1	Parameter	Unit	Height	Frequency	Averaging period	Method
Meteorological Station (Premises) Meteorological Station (Greenbushes	Wind speed	m/s	10 m	Continuous	5 minutes	AS/NZS 3580.14
	Wind direction	degrees				
	Wind direction (standard deviation)					
	Ambient temperature	°Celsius	2 m			
	Relative humidity	%	-			
	Atmospheric pressure	hPa	-			
Meteorological Station (Premises)	Rainfall	mm	-			

31. The licence holder must notify the CEO of an exceedance, where ambient concentrations:

(a) at the monitoring location listed in Table 17;

(b) for the corresponding parameter;

(c) exceed the corresponding trigger value for management action and/or limit value;

when monitored in accordance with conditions 29 and 30.

Table 17: Ambient air quality trigger and limit values

Monitoring point reference, as shown in Figure 5 Schedule 1	Parameter	Trigger value	Limit
NEPM concentration limits			
Continuous AS PM_{10} Monitor South Continuous AS PM_{10} Monitor North	PM_{10} (24-hour average)	N/A	50 µg/m^3
Trigger values for management response actions (as per Table 21)			
Continuous AS PM_{10} Monitor South Continuous AS PM_{10} Monitor North	PM_{10} (15-minute rolling average – refer to Figure 13 for correct methodology)	100 µg/m^3	N/A

Ambient water quality monitoring

32. The licence holder must undertake the monitoring in Table 18 and Table 19 according to the specifications in those tables and record and investigate results that do not meet any limit or target specified.

Table 18: Monitoring of ambient surface water quality

Monitoring point reference, as shown in Figure 2 of Schedule 1	Parameter	Limit	Unit	Averaging period	Frequency
Norilup Dam	pH	6 – 9	-	Spot sample	Quarterly
	Redox potential (Eh)	-	mV		
	Total dissolved solids	-	mg/L		
	Dissolved oxygen				
	Lithium	2			
	Arsenic	0.01			
	Cadmium	0.002			
	Chromium, Cr (VI)	0.05			
	Copper	2			
	Manganese	0.5			
	Nickel	0.02			
	Uranium	0.017			
	Chloride	-			
	Nitrate				
	Magnesium				
	Sodium				
	Sulfate				
	Cobalt				
	Iron				
	Thorium				
	Radium 226	-	Bq/L		Six monthly
	Radium 228	-			

Table 19: Monitoring of ambient groundwater quality

Monitoring point reference, as shown in Figure 3 of Schedule 1	Parameter	Unit	Averaging period	Frequency
Shallow bores: MB17/01S MB17/02S MB17/06S MB22/25S	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Chloride			
	Nitrate			
	Magnesium			
	Sodium			
	Sulfate			
	Arsenic			
	Cobalt			
	Copper			
	Iron			
	Lithium			
	Manganese			
	Nickel			
	Uranium			
	Thorium			
Intermediate bores: MB17/01I MB17/02I MB17/03 MB17/04I MB17/06I MB22/25I	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Chloride			
	Nitrate			
	Magnesium			
	Sodium			
	Sulfate			
	Arsenic			
	Cobalt			
	Copper			
	Iron			
	Lithium			
	Manganese			

Monitoring point reference, as shown in Figure 3 of Schedule 1	Parameter	Unit	Averaging period	Frequency
	Nickel			
	Uranium			
	Thorium			
	Radium 226	Bq/L		Six monthly
	Radium 228			
Deep bores: MB97-05 MB17/02D MB97/04 MB17/04D MB17/05 MB17/06D MB3 MB20/04 MB22/25D	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Chloride			
	Nitrate			
	Magnesium			
	Sodium			
	Sulfate			
	Arsenic			
	Cobalt			
	Copper			
	Iron			
	Lithium			
	Manganese			
	Nickel			
	Uranium			
	Thorium			
	Radium 226	Bq/L		Six monthly
	Radium 228			
MB97/01[1] MB97/02[1] MB01/11[1]	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Sulfate			
	Sodium			
	Arsenic			
	Lithium			
MB22/01S MB22/01I MB22/01D MB22/08S MB22/08I MB22/08D MB20/01S MB20/01I MB20/01D MB20/03S MB20/03I MB20/03D MB22/21S MB22/21I MB22/21D MB22/22S MB22/22I MB22/22D MB22/23S MB22/23I MB22/23D PB22/01S PB22/01I PB22/01D	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Chloride			
	Nitrate			
	Magnesium			
	Sodium			
	Sulfate			
	Arsenic			
	Cobalt			
	Copper			
	Iron			
	Lithium			
	Manganese			
	Nickel			
	Uranium			
	Thorium			
	Beryllium			
	Aluminium			
	Rubidium			
	Antimony			
	Cadmium			
	Caesium			
	Thallium			
	Vanadium			
	Radium 226	Bq/L		Six monthly
	Radium 228			

Note 1: Analysis of parameters from bores MB97/1, MB97/2 and MB01/11 are exempt from the requirement to be tested by a laboratory with current NATA accreditation for the parameters being measured.

33. In the event of the pH limit being exceeded for ambient surface water quality at Norilup Dam, the exceedance shall only be valid if the pH at Cowan Brook Dam is also above the limit for the same reporting period.

34. The licence holder must complete an annual ecological assessment each Spring in accordance with the specifications and conditions set out in Schedule 2.

35. The licence holder must undertake the monitoring in Table 20 according to the specifications in that table.

Table 20: Ambient surface water flows

Monitoring point reference, as shown in Figure 2 of Schedule 1	Process description	Parameter	Unit	Frequency	Method
Norilup Dam	Discharge from Norilup Dam to downstream to Norilup Brook	Flow	m^3	Each event	Continuous monitoring depth gauge at Norilup Dam spillway to collect continuous data.

36. The licence holder must submit to the CEO, with the Annual Environmental Report required by condition 43, an Annual Ecological Assessment demonstrating compliance with condition 34 for the preceding annual period, and must include but not be limited to:

(a) a clear statement of the scope of work carried out;

(b) a detailed description of the field methodologies employed;

(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program;

(d) copies of the field monitoring records and field QA/QC documentation;

(e) laboratory certificates, including QA/QC documentation;

(f) an assessment of the reliability of field procedures and laboratory results;

(g) coordinates of the sampling locations provided in eastings and northings;

(h) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;

(i) macroinvertebrate data provided with taxonomy and trait information;

(j) 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 point and other potential sources of contamination must also be shown);

(k) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the *Guideline: Assessment and management of contaminated sites*;

(l) an interpretive summary and assessment of results against previous monitoring results;

(m) an interpretive summary and assessment of results against water quality from the mine water circuit (Cowan Brook Dam, Clear Water Dam, Austin Dam, Southampton Dam);

(n) spatial assessments, where mean data are presented (e.g., time or distance), range and variability should also be presented (e.g., standard deviation or percentiles); and

(o) trend graphs to provide a graphical representation of historical results and to support the interpretive summary. Use of appropriate scales on axes is required to ensure any trends are visible and relevant to environmental guidelines.

37. The licence holder must, in the event of a trigger value specified in Table 21 being exceeded for the corresponding monitoring location, undertake the management actions within the corresponding timeframes as specified in Table 21.

Table 21: Management actions required in the event of trigger value exceedance

	Monitoring point reference, as shown in Figure 5 of Schedule 1	Trigger value	Management action	Timeframe
1.	Continuous AS PM_{10} Monitor South[1]	≥100ug/m^3 PM_{10} 15-minute rolling average, as calculated with reference to Figure 13	(a) Conduct an investigation to determine any potential causes of the trigger value exceedance; (b) If dust source is identified following the investigation under part (a), implement immediate dust abatement measures, including but not limited to the application of additional dust suppression methods at the dust source.	Management actions to commence immediately upon the licence holder being notified of exceedance and be continued for the duration of the trigger event.
2.	Continuous AS PM_{10} Monitor North[1]			
3.	Continuous AS PM_{10} Monitor South[1]	≥ 50 µg/m^3 PM_{10} (averaging period of 5 minutes) and wind direction within 225° to 360° for more than a 3-hour period.	(a) Conduct an investigation to determine any potential causes of the trigger value exceedance; (b) If dust source is identified following the investigation under part (a), implement immediate dust abatement measures, including but not limited to: i. the application of additional dust suppression methods at the dust source; ii. Moving or modifying activity to reduce dust emissions or distance from nearest receptors.	Management actions to commence immediately upon the licence holder being notified of exceedance and be continued for the duration of the trigger event.
4.		≥ 50 µg/m^3 PM_{10} (averaging period of 5 minutes) and wind direction within 225° to 360° for more than a 6-hour period.	(a) Continue the implementation of management actions as specified in row 3 above; and (b) In the event that dust emissions continue, implement additional dust control actions including but not limited to ceasing activities at the source of dust until emission are controlled.	
5.		Wind direction within 225° to 360° and wind speeds less than 1.0 m./s with an inversion or greater than 6.0	(a) Ensure water trucks are available; (b) Direct water trucks to key dust source areas; (c) Ensure water trucks wet down haul routes immediately ahead of trucks using the routes; (d) Inspect all dust suppression equipment and ensure all key	As soon as practicable.

	Monitoring point reference, as shown in Figure 5 of Schedule 1	Trigger value	Management action	Timeframe
		m/s, for more than a 3- hour period.	components are fully functional; (e) Arrange for faulty dust suppression equipment to be made operational (prior to event where practicable); (f) Alert all operators; (g) Wet down crushed ore stockpile; (h) Clean spillage and traffic areas prone to dusting; (i) Arrange tailings spiggoting to maximise wet areas prior to event; and (j) Apply dust control product to untreated exposed areas as practicable.	
6.	Continuous AS PM_{10} Monitor North[1]	≥ 50 µg/m^3 PM_{10} (averaging period of 5 minutes) and wind direction within 90° to 225° for more than a 3-hour period.	(a) Conduct an investigation to determine any potential causes of the trigger value exceedance; (b) If dust source is identified following the investigation under part (a), implement immediate dust abatement measures, including but not limited to: i. the application of additional dust suppression methods at the dust source; ii. Moving or modifying activity to reduce dust emissions or distance from nearest receptors.	As soon as practicable
7.		≥ 50 µg/m^3 PM_{10} (averaging period of 5 minutes) and wind direction within 90° to 225° for more than a 6-hour period.	(a) Continue the implementation of management actions as specified in row 6 above; and (b) In the event that dust emissions continue, implement additional dust control actions including but not limited to ceasing activities at the source of dust until emission are controlled.	
8.		Wind direction within 90° to 225° and wind speeds less than 1.0 m./s with an inversion or greater than 6.0 m/s, for more than a 3-hour period.	(a) Ensure water trucks are available; (b) Direct water trucks to key dust source areas; (c) Ensure water trucks wet down haul routes immediately ahead of trucks using the routes; (d) Inspect all dust suppression equipment and ensure all key components are fully functional; (e) Arrange for faulty dust suppression equipment to be made operational (prior to event where practicable); (f) Alert all operators; (g) Wet down crushed ore stockpile; (h) Clean spillage and traffic areas prone to dusting; (i) Arrange tailings spiggoting to maximise wet area prior to event;	As soon as practicable

	Monitoring point reference, as shown in Figure 5 of Schedule 1	Trigger value	Management action	Timeframe
			and (j) Apply dust control product to untreated exposed areas as practicable.	

Note 1: as monitored in accordance with conditions 29 and 30.

38. The licence holder is required to submit to the department, a review on the implementation of the actions specified within Table 21 within the 2024-2025 Annual Environmental Report, and for each annual period thereafter. This review is required to include but not limited to:

(a) A review of the specified wind arcs and wind speeds (as drawn from the document "*Talison Lithium Pty Ltd, Air Quality Trigger Action Response Plan: Site Management Plan APP-EN-MP-0001, October 2023*) to ensure they remain valid and representative of site environmental conditions with respect to identifying and mitigating dust emissions from the premises;

(b) A review of the specified trigger values, and specified time periods to ensure that they set at an appropriate level to mitigate dust impacts to residential receptors;

(c) Documentation regarding the implementation of this plan and an assessment of the efficiency and efficacy of the specified management actions to prevent exceedances of limits as specified in Table 17; and

(d) All data recorded from Table 15 and Table 16 when a management trigger specified in Table 21 for an Australian Standard monitor was exceeded.

Records and reporting

39. 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 of 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 response to any complaint.

40. 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 September each year an Annual Audit Compliance Report for the preceding Annual Period in the approved form.

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

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

(b) the works conducted in accordance with condition 10 of this licence;

(c) any maintenance of infrastructure that is performed in the course of complying with condition 2 to 9 and 13 of this licence;

(d) monitoring programmes undertaken in accordance with conditions 23 to 30, 32, 34, 35 and 36 of this licence; and

(e) complaints received under condition 39 of this licence.

42. The books specified under condition 41 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.

43. The licence holder must submit to the CEO an Annual Environmental Report by 30 September of each year. The report must contain the information listed in Table 22 in the format or form specified in that table.

Table 22: Annual Environmental Report

Condition or table	Parameter	Format or form
-	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.	None specified
-	Actual production throughputs for prescribed premises categories.	
Condition 9	Corrective actions taken for infrastructure/equipment not performing as per inspection requirements.	
Condition 23 (Table 10) Condition 24 (Table 11 and Table 12) Condition 25 (Table 13) Condition 26	Summary of surface water flow trends and mine water circuit water balance (including seepage) for the reporting period.	
Condition 28 (Table 14)	Waste acceptance data	Tabulated data
Condition 36	Annual assessment that evaluates the information listed in condition 34.	As specified in condition 36
Condition 29 (Table 15) Condition 30 (Table 16) Condition 31 (Table 17) Condition 37 (Table 21) Condition 46 (Table 24)	Monitoring of ambient air quality (TSP, PM_{10} and meteorological conditions) Summary of limit exceedances for the annual period. Summary of PM_{10} trigger value exceedance events and management action(s) taken.	Tabulated dust monitoring data results calculated as 24-hour average (for PM_{10}). Raw data files included in Appendix as Excel, CSV or equivalent editable format (for 5-minute averages).
Condition 24 (Table 11 and Table 12)	Summary of surface water quality and groundwater quality trends for the reporting period.	Raw data files in Excel, CSV or equivalent editable format, QA/QC reports and an assessment, including comparison with previous years to be

Condition or table	Parameter	Format or form
Condition 32 (Table 18 and Table 19)		provided as per condition 44.
Condition 39	Complaints summary	None specified
Condition 40	Compliance	Annual Audit Compliance Report (AACR)

44. The licence holder must ensure that the Annual Environmental Report also contains:

(a) any relevant process, production or operational data recorded under condition 20; and

(b) an assessment of the information contained within the report against previous monitoring results and licence limits.

45. The licence holder must submit the information in Table 23 to the CEO according to the specifications in that table.

Table 23: Non-annual reporting requirements

Condition or table	Parameter	Reporting period	Reporting date (after the end of the reporting period)	Format or form
-	Copies of original monitoring reports submitted to the licence holder by third parties	Not applicable	Within 14 days of the CEO's request	As received by the licence holder from third parties
Condition 32 (Table 18)	Ambient surface water quality	Quarterly	Within 30 days	None specified
Condition 32 (Table 19)	Ambient groundwater quality	Quarterly	Within 30 days	Tabulated data, and trend graphs to provide graphical results and to support interpretive summary. Ambient groundwater data to include a comparison against interim site-specific water quality guideline values as specified in Schedule 5.
Condition 23 (Table 10) Condition 24 (Table 11 and Table 12)	Surface water discharges and process monitoring	Quarterly	Within 30 days	None specified
Condition 35 (Table 20)	Norilup Dam downstream flows	Quarterly	Within 30 days	None specified

46. Where an exceedance of the PM_{10} limit or trigger value for management action has been identified per condition 31, the licence holder must provide a report on the following information in relation to any exceedances identified in that condition, including:

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

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

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

(d) the details on the investigation to determine any potential causes or source of the trigger value exceedance taken pursuant with condition 37 in response to the exceedance;

(e) the details of the management action(s) taken pursuant with condition 37 in response to the exceedance;

(f) the details of the results and effectiveness of the management action(s) taken;

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

(h) the corresponding data as set out in Table 24.

Table 24: Data to include in the Exceedance Report

Condition or table	Dust criteria exceeded	Format or form	Reporting period	Report submission date
Condition 30	Meteorological monitoring (wind speed and wind direction)	Tabulated monitoring data and details on dust criteria exceedances with corresponding meteorological conditions recorded at the time of exceedance (5 minute and 24-hour average data) Raw data files included in Appendix as Excel, CSV or equivalent editable format (for 5-minute averages) corresponding to the exceedance.	Quarterly	Within 7 days, after the end of the reporting period where exceedance(s) occurred.
Condition 29	Continuous AS PM_{10} Monitor South			
Condition 29	Continuous AS PM_{10} Monitor North			

47. The licence holder must ensure that the parameters listed in Table 25 are notified to the CEO, in accordance with the notification requirements of the table.

Table 25: Notification requirements

Condition or table	Parameter	Notification requirement[1]	Format or form[2]
Condition 4	Issue of new versions of the Surface Water Management Plan	Within 30 days of issue of the new version of the Surface Water Management Plan	None specified
Condition 5	Secondary Recovery Seepage Sump overflow not due to power outage or extreme rainfall event.	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable.	N1
Condition 24 Condition 31 Condition 32	Breach of any limit specified in Table 12, Table 17 and Table 18.		N1
Condition 22	Calibration report	As soon as practicable.	None specified
Condition 34	Identification of any threatened fauna species as listed under the *Wildlife Conservation Act 1950*	Within seven days of identification.	None specified

Note 1: Notification requirements in the licence shall not negate the requirement to comply with s72 of the EP Act.
Note 2: Forms are in Schedule 4.

Definitions

In this licence, the terms in Table 26 have the meanings defined.

Table 26: Definitions

Term	Definition
ACN	Australian Company Number
active mining area	means the area within tailings storage facility 1 (TSF1) where mining operations are currently ongoing, including any associated infrastructure and disturbance
AHD	means the Australian height datum
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.
ARU	means the Arsenic Remediation Unit used to remove arsenic from the mine water circuit, as located in Figure 9 of Schedule 1.
AS/NZS 2031	means the Australian Standard AS/NZS 2031 *Selection of containers and preservation of water samples for microbiological analysis*.
AS 1726:2017	means the Australian Standard AS 1726:2017 *Geotechnical site investigations*.
AS 3580.1.1	means the Australian Standard AS 3580.1.1 *Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment.*
AS 3580.9.6	means the Australian Standard AS 3580.9.6 *Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – PM10 high volume sampler with size - selective inlet – Gravimetric method.*
AS/NZS 3580.9.8	means AS 3580.9.8: *Methods for sampling and analysis of ambient air, Method 9.8: Determination of suspended particulate matter — PM10 continuous direct mass method using a tapered element oscillating microbalance analyser*
AS/NZS 3580.14	means AS/NZS 3580.14:2014 *Methods for sampling and analysis of ambient air Meteorological monitoring for ambient air quality monitoring applications*
AS 4863.1-2000	means AS 4863.1-2000 *Particle size analysis - Laser diffraction methods - General Principles*
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples.*
AS/NZS 5667.4	means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made.*
AS/NZS 5667.6	means the Australian Standard AS/NZS 5667.6 *Water Quality – Sampling – Guidance on sampling of rivers and streams.*
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters.*

Term	Definition
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters.*
AS/NZS 5667.12	means the Australian Standard AS/NZS 5667.12 *Water Quality – Sampling – Guidance on sampling of bottom sediments.*
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.
CEMS	means continuous emissions monitoring system
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
Department / DWER	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)
Extreme rainfall event	means an event having rainfall equivalent to a 1% annual exceedance probability (AEP) over a period of at least 3 hours as defined by the Bureau of Meteorology's 2016 Rainfall IFD (Intensity– Frequency–Duration) System.
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
Guideline: Assessment and management of contaminated sites	means the Department of Water and Environmental Regulation *Guideline for the assessment and management of contaminated sites,* as updated from time to time.
Inert Waste Type 1	has the meaning defined in Landfill Definitions.
Inert Waste Type 2	has the meaning defined in Landfill Definitions.
Landfill Definitions	means the document titled *"Landfill Waste Classification and Waste*".
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.

Term	Definition
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	means metres below ground level.
Mine water circuit	means the process water storage dams on-site, comprising Clear Water Dam, Austins Dam, Southampton Dam and Cowan Brook Dam.
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.
NEPM	means the "*National Environment Protection (Assessment of Site Contamination) Measure*, as updated from time to time.
NIOSH7500	means National Institute for Occupational Safety and Health (NIOSH). (2003) Method 7500: silica, crystalline by XRD, Issue 4, 15 March 2003
NOHSC 3003	means National Occupational Health and Safety Commission (NOHSC) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd edition [3003(2005)]
PM_{10}	means particles with an aerodynamic diameter of less or equal to 10 µm.
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 (as shown in Figure 1 of Schedule 1).
prescribed premises	has the same meaning given to that term under the EP Act.
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, 1 April to 30 June.
RL	means Reduced Level and refers to height or elevation above the point adopted as the site datum for the purpose of establishing levels.
six monthly	means the 2 inclusive periods from 1 July to 31 December and 1 January to 30 June in the following year.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
Storer et al., 2022	means Storer T, O'Neill K, Christie, E, Galvin L & van Looij E 2022, *The South West Index of River Condition, Module 2 – method summary: collection and analysis of aquatic biota, River Science Technical Series, report no. 2*, Healthy Rivers program, Department of Water and Environmental Regulation, Perth.
Suitably qualified hydrogeologist	Must hold relevant qualifications and have relevant experience in the fields of hydrogeology, geology or engineering from a recognised educational institution, with a minimum of 5 years experience.
Suitably qualified aquatic scientist	must hold relevant qualifications from a recognised educational institution and have demonstrated competence in the design and implementation of environment monitoring programs for aquatic systems, including biota, water quality and sediment chemistry indicators, with a minimum of five years of experience working in the field of aquatic science.
tailings	a combination of the fine-grained (typically silt-sized, in the range from 0.001 to 0.6

Term	Definition
	mm) solid materials remaining after the recoverable metals and minerals have been extracted from mined ore, together with the water used in the recovery process (*Leading Practice Handbook: Tailings Management*, Australian Government, 2016).
tailings excavation area	refers to the total surface area within the designated footprint of the tailings storage facility 1 (TSF1) subject to mining activities, including active and non-active mining.
TSF	means Tailings Storage Facility.
µS/cm	means microsiemens per centimetre.
waste	has the same meaning given to that term under the EP Act.
Water management plan	means Talison Lithium Australia Pty Ltd – Water Management Plan, 23 September 2015, Version 5.
WTF	means the Water Treatment Facility used to treat the effluent waste streams from the WTP and ARU, as located in Figure 9 of Schedule 1.
WTP	means the Reverse Osmosis Water Treatment Plant used to remove lithium from the mine water circuit, as located in Figure 9 of Schedule 1.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

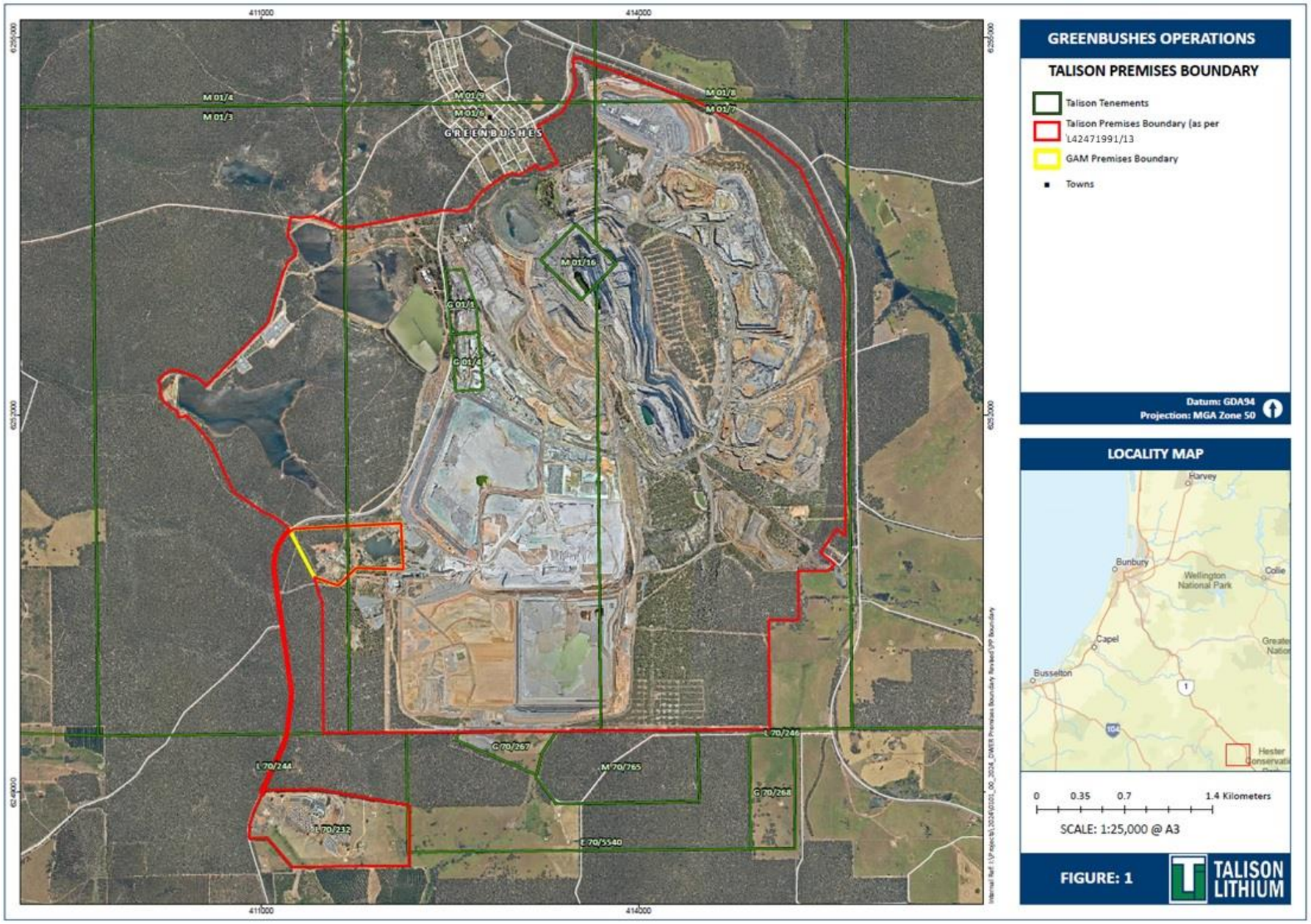

Figure 1: Map of the boundary of the prescribed premises

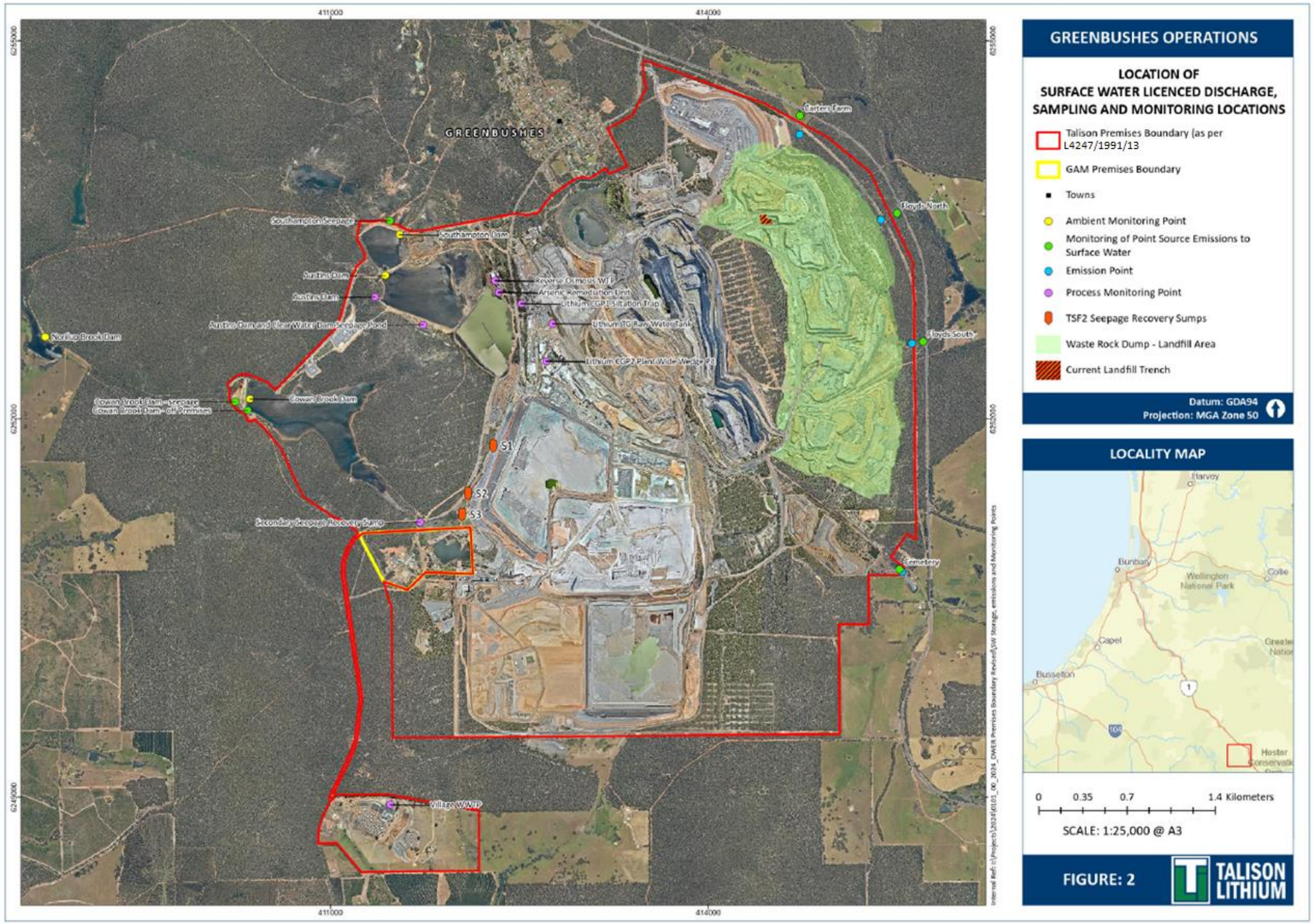

Figure 2: Location of surface water storages, emissions and monitoring points

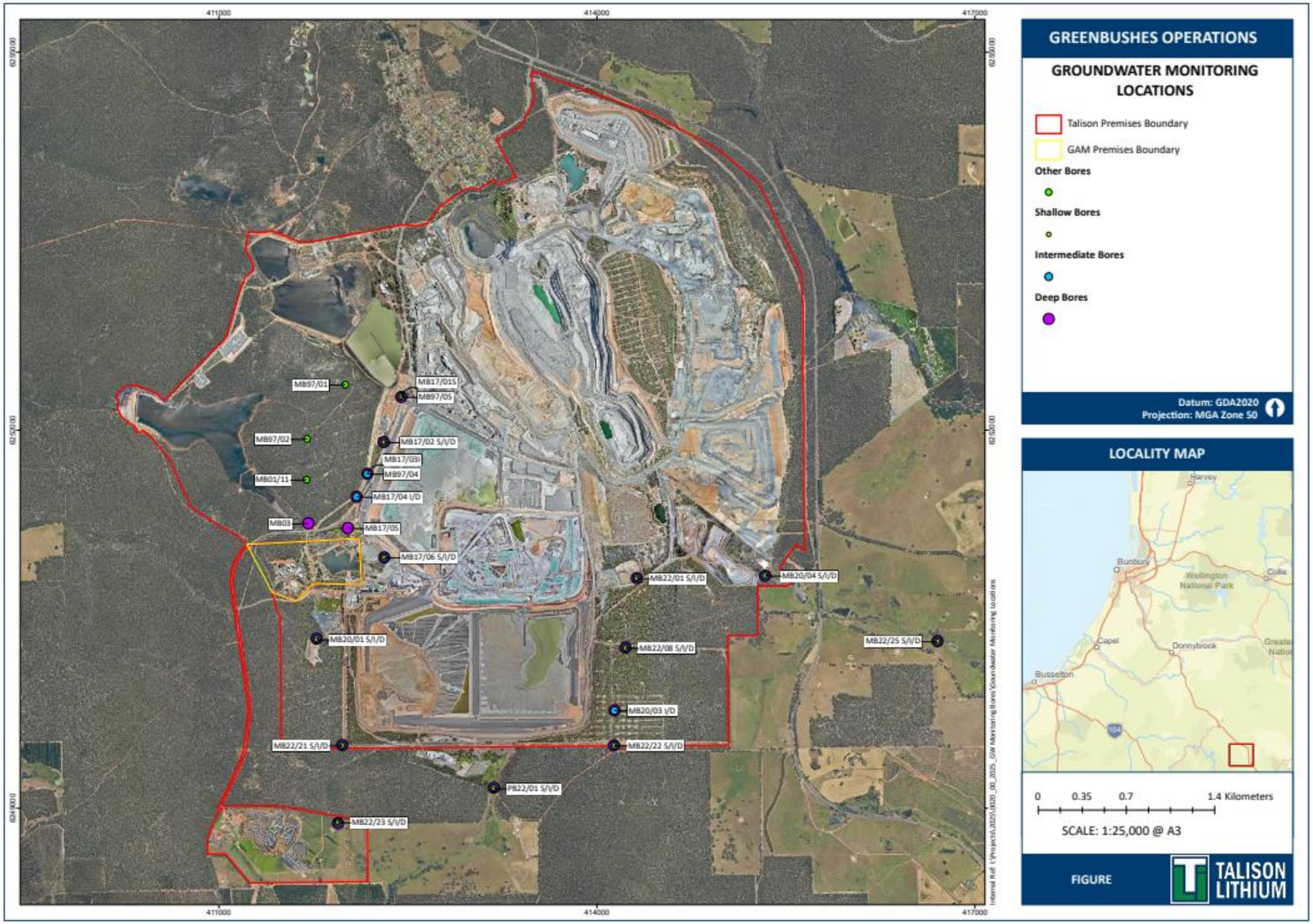

Figure 3: Groundwater monitoring locations

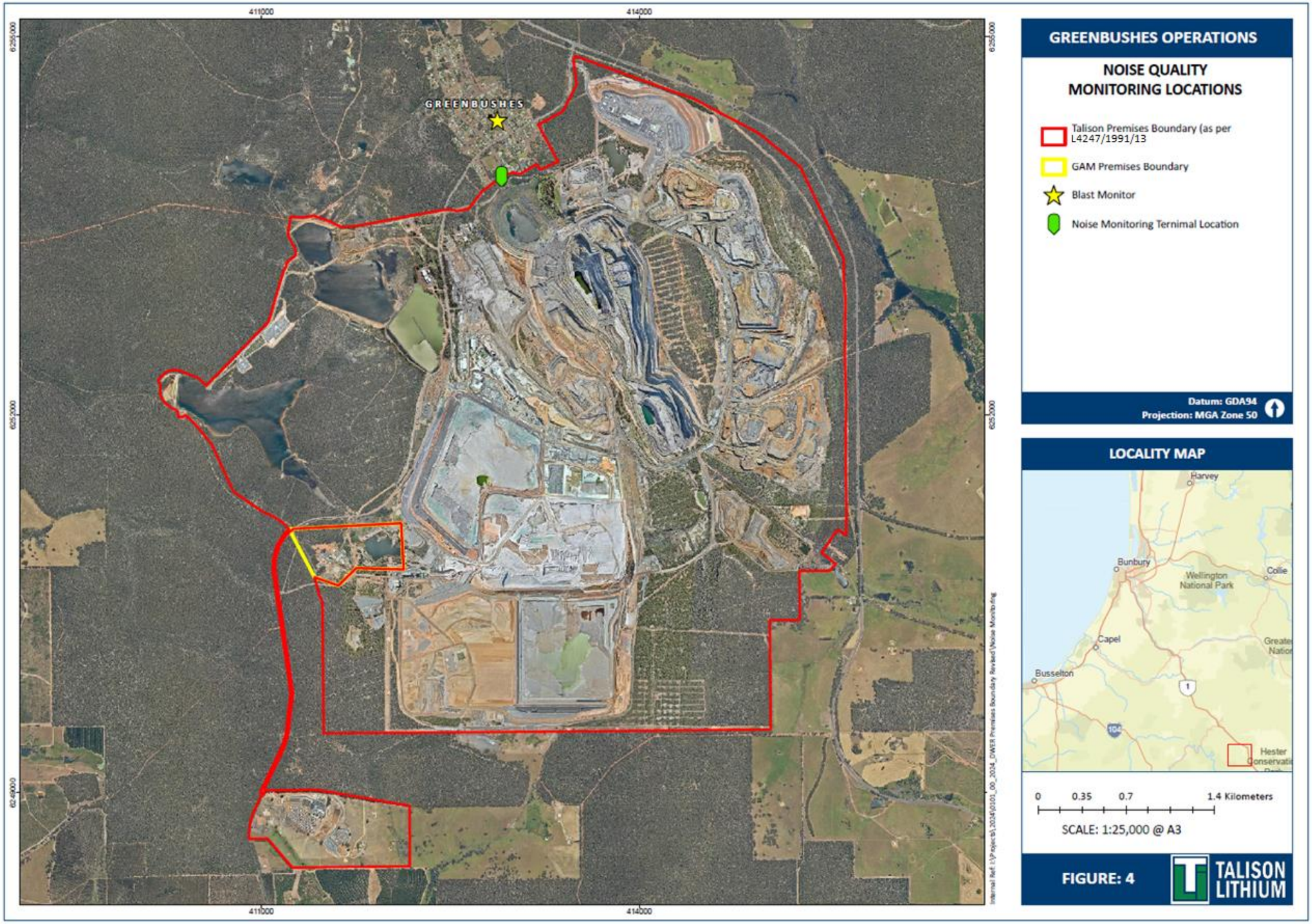

Figure 4: Noise quality monitoring locations

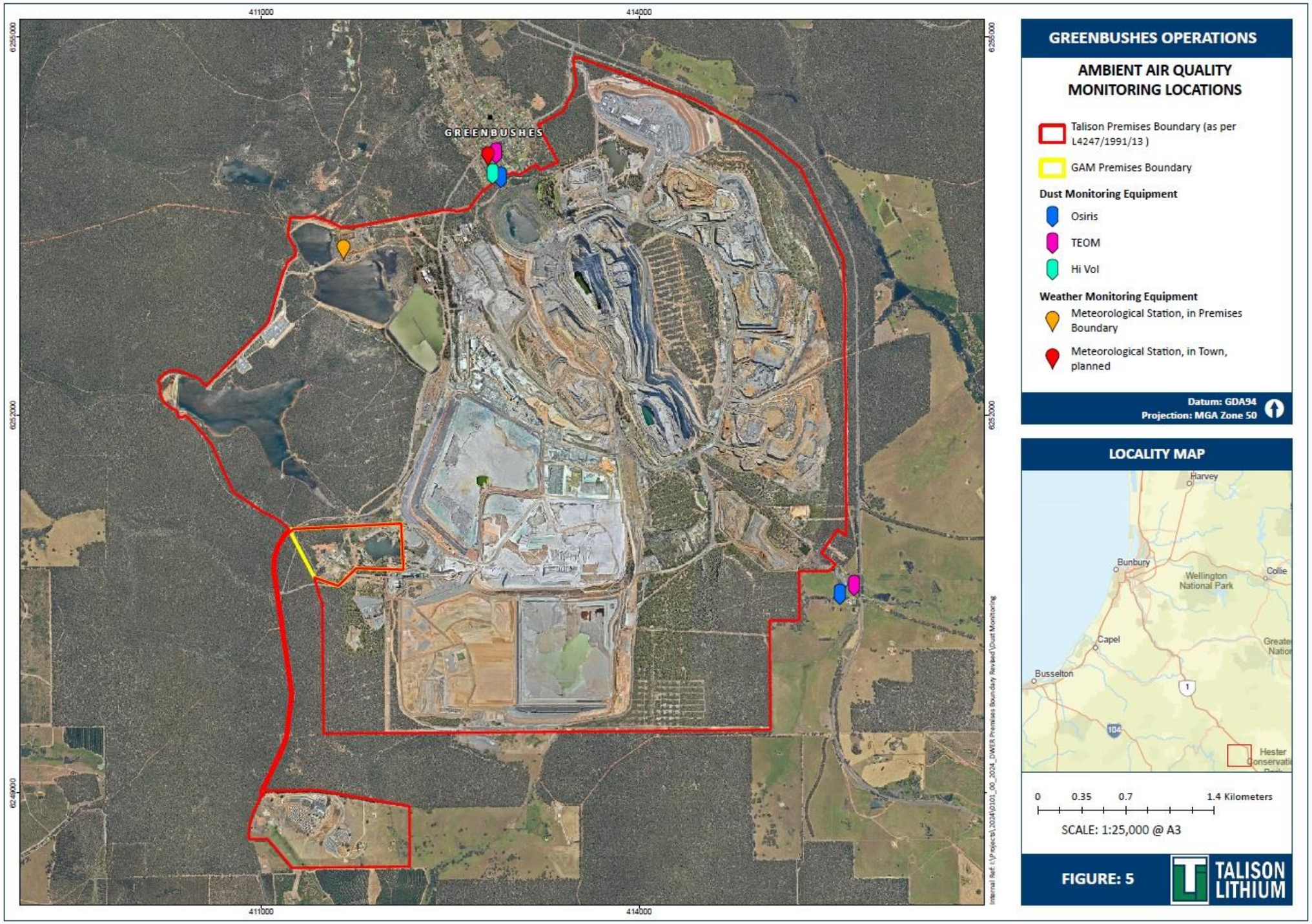

Figure 5: Ambient air quality monitoring (indicative) locations

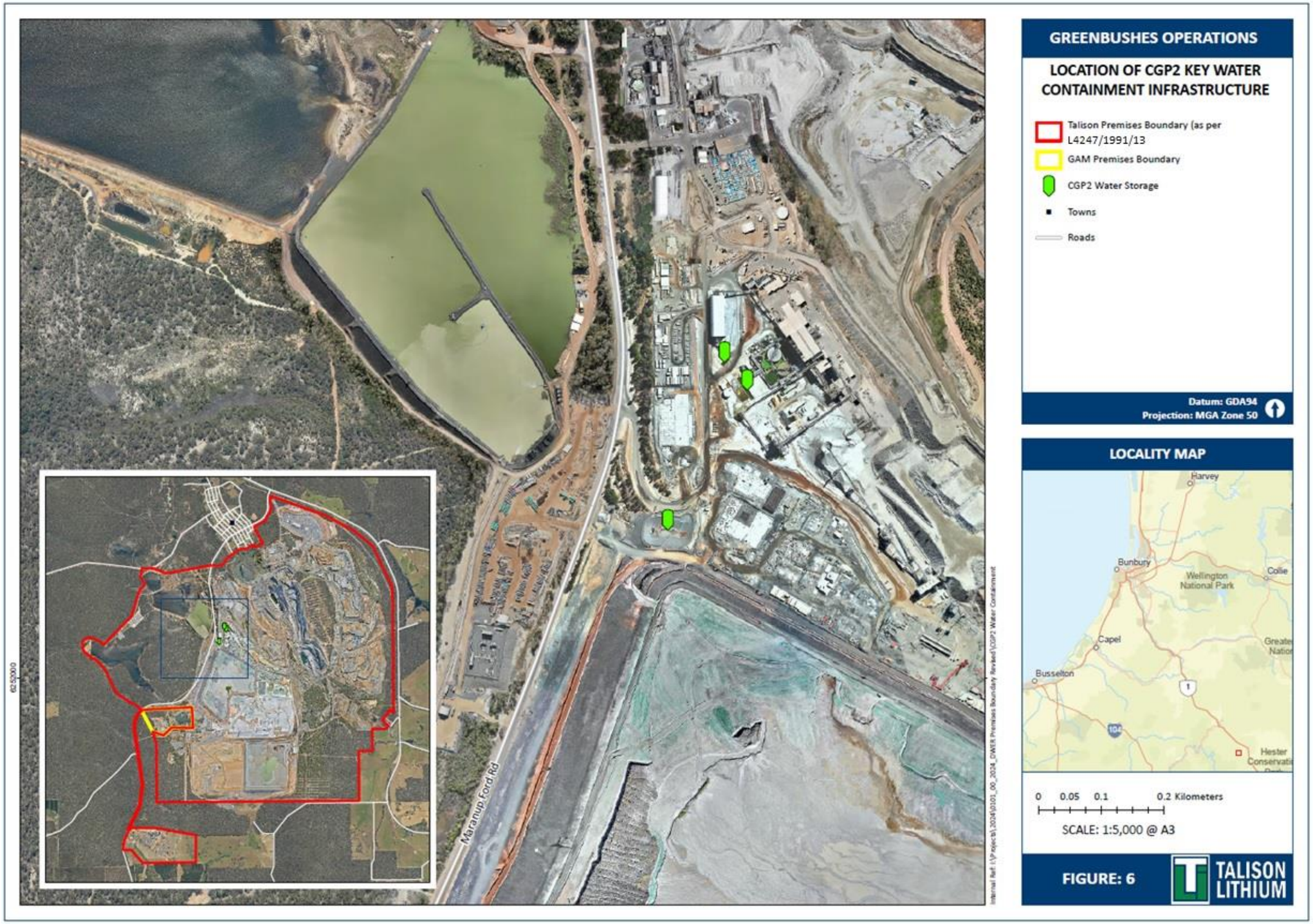

Figure 6: Location of CGP2 key water containment infrastructure

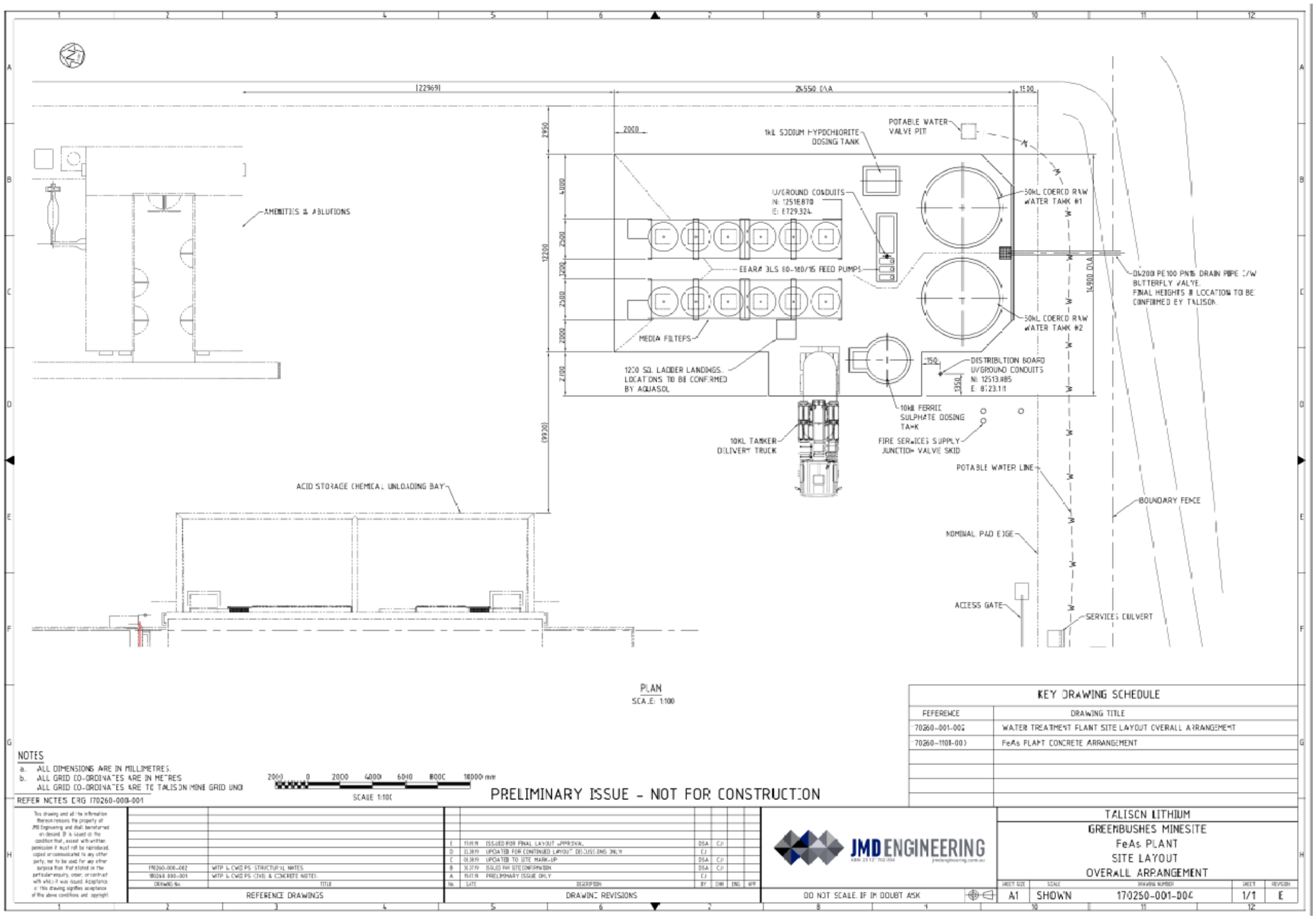

Figure 7: Overview of Arsenic Remediation Unit layout

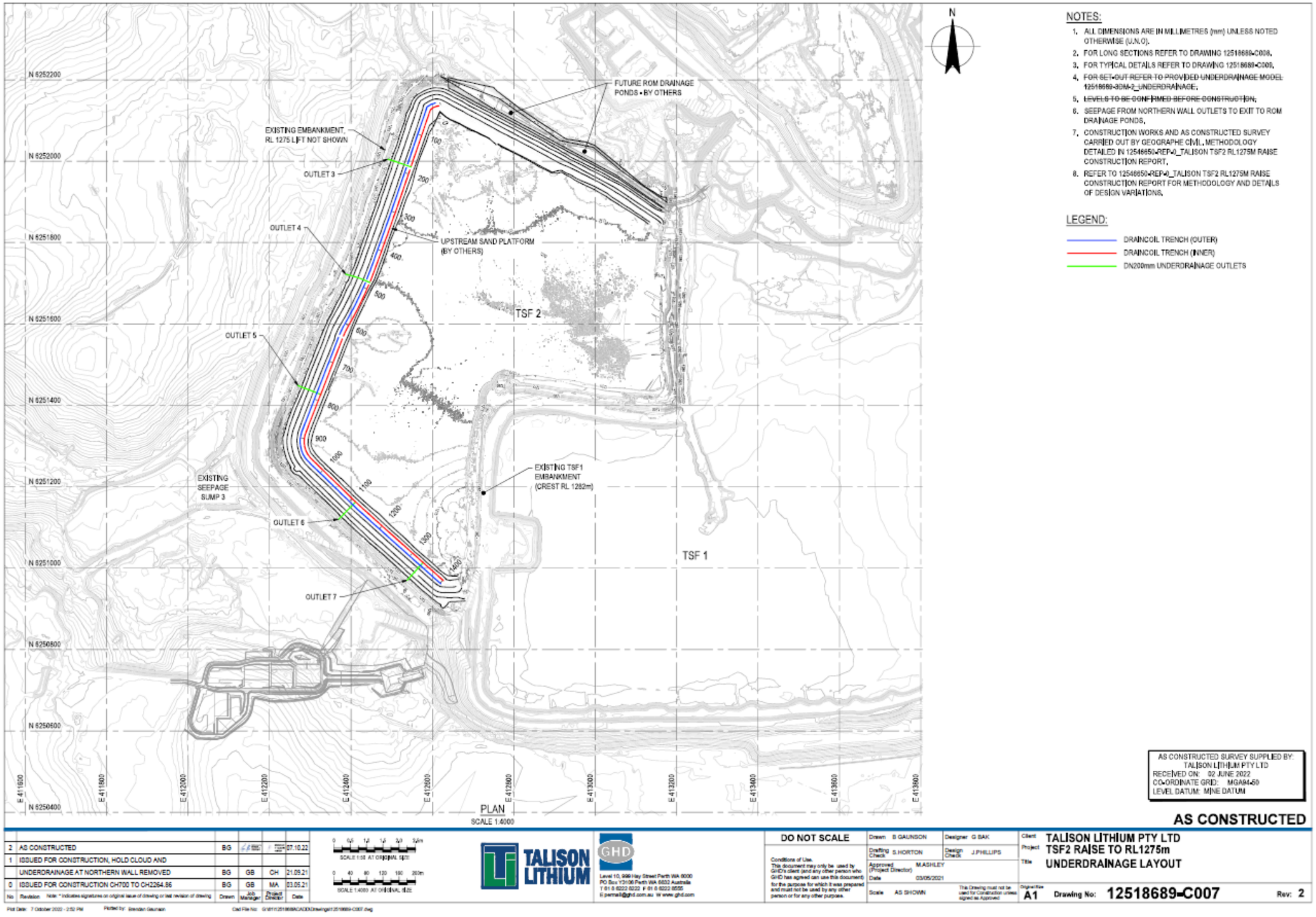

Figure 8: Additional trenches for TSF2 for embankment raise to RL 1,280 m

Figure 9: Location of Water Treatment Plan and Arsenic Remediation Unit

Figure 10: Tailings Retreatment Plant infrastructure

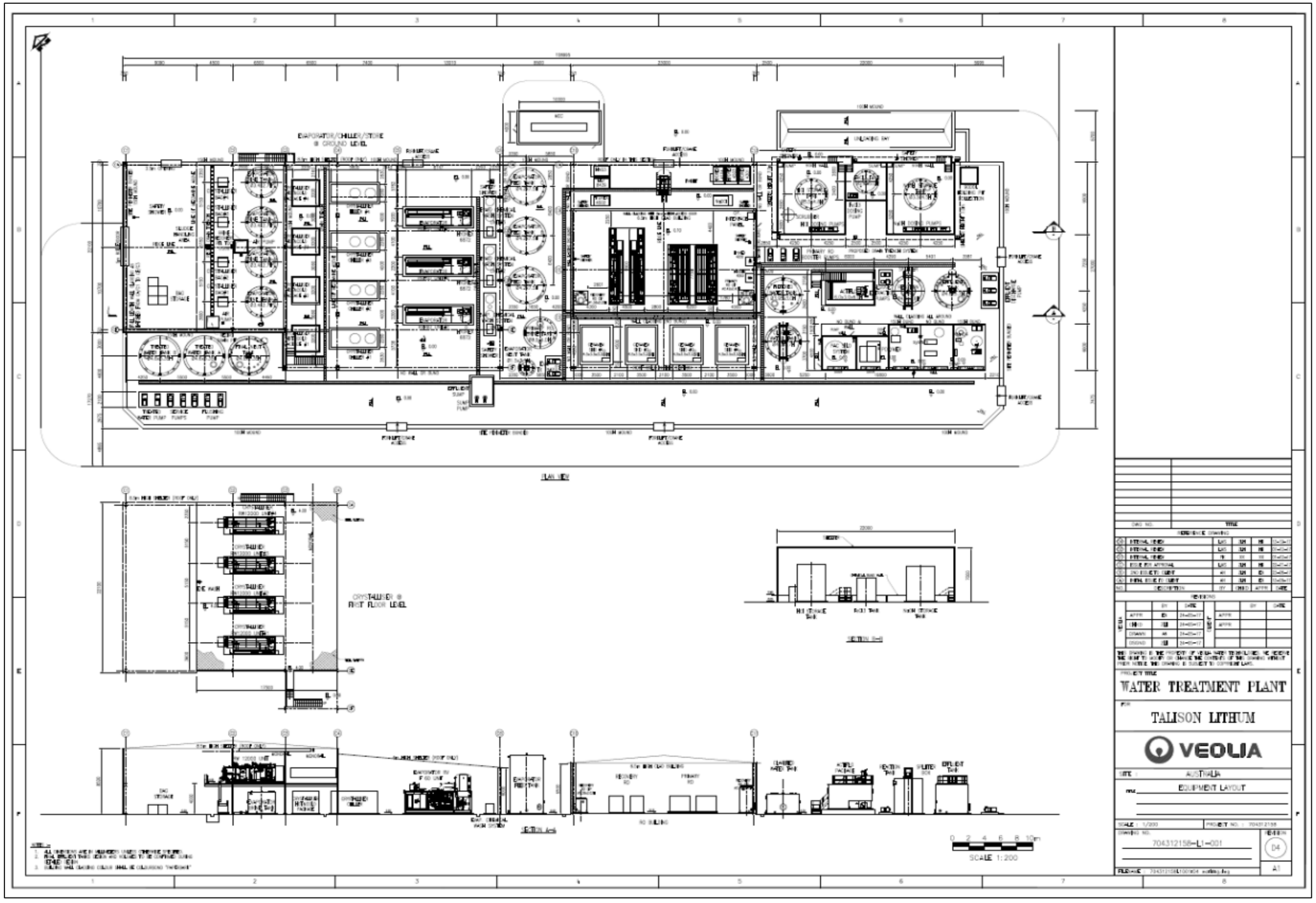

Figure 11: Water Treatment Plant layout

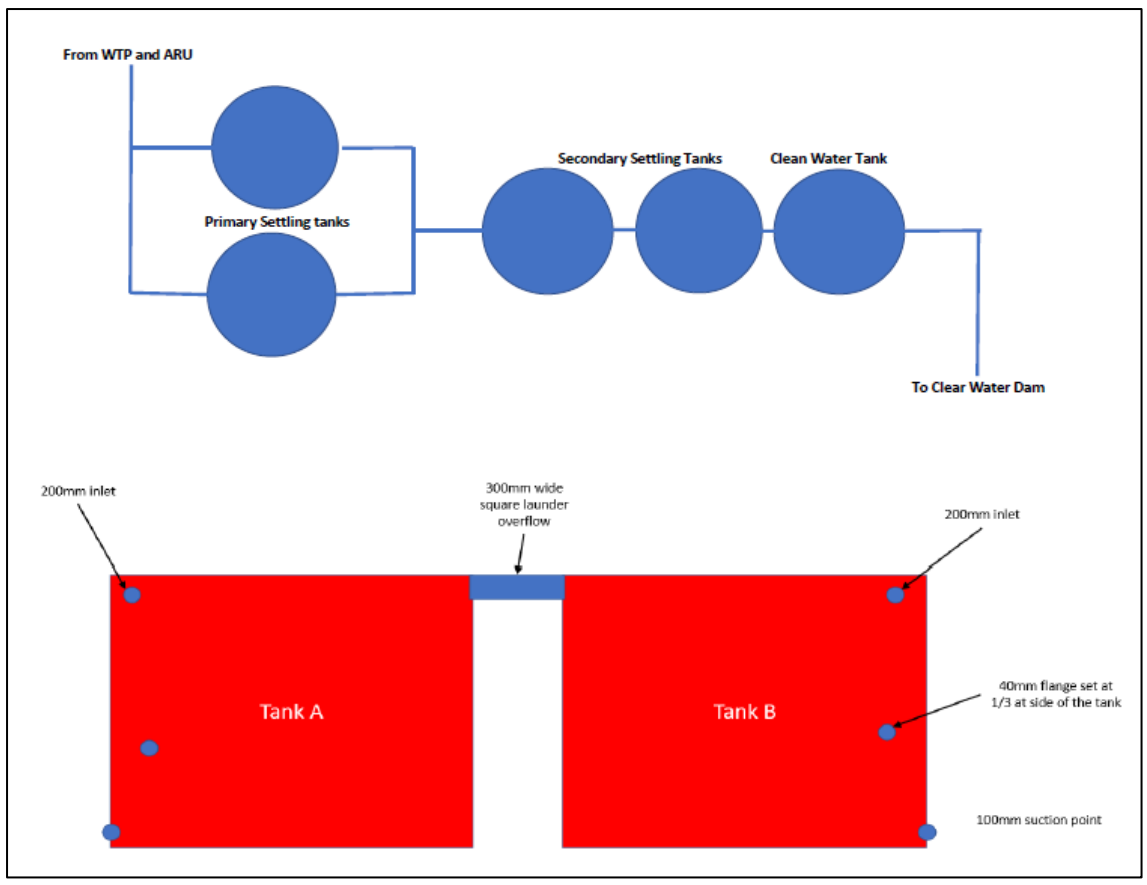

Figure 12: Water Treatment Facility settlement tank process chart

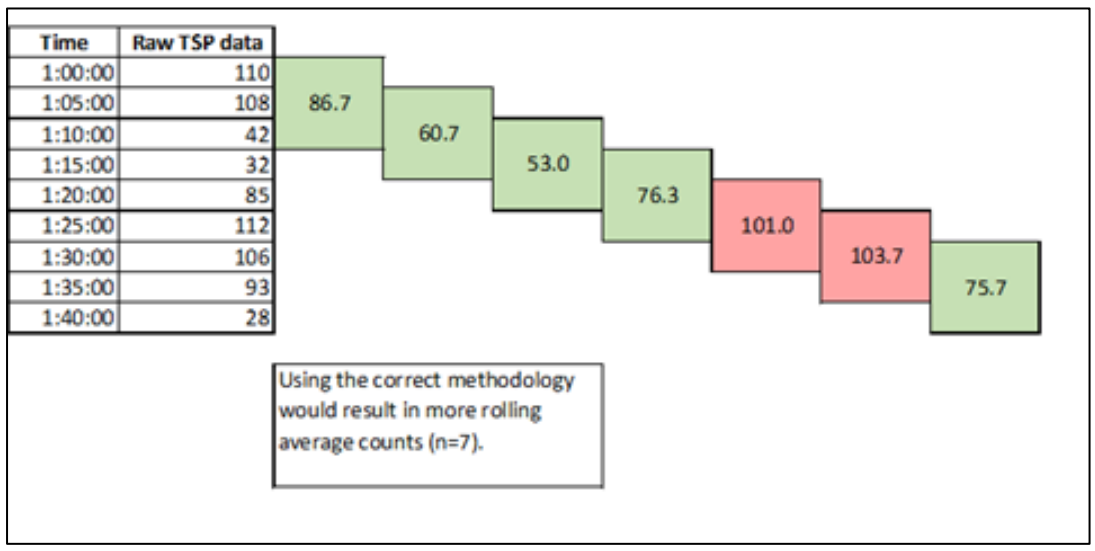

Figure 13: Correct methodology to calculate 15-minute rolling averages for dust monitoring

Figure 14: Authorised installation areas (red circles) for the co-located Australian Standard PM_{10} monitoring station, Australian Standard PM_{10} high volume sampler and meteorological monitoring station

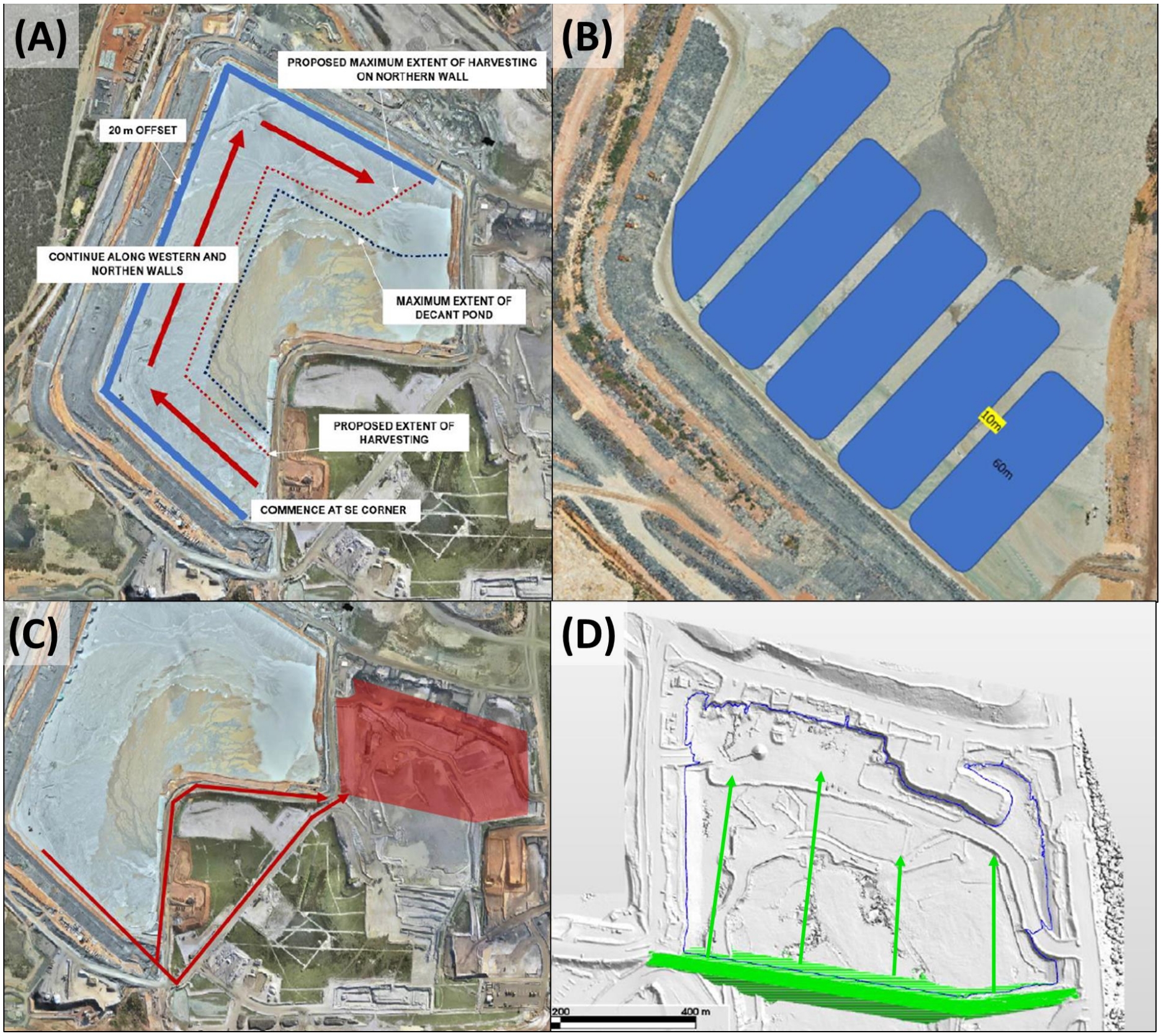

Figure 15: (A) Excavation sequence at TSF2, including separation distance from decant pond, (B) Conceptual layout of excavation strips, (C) Authorised area for tailings deposition at TSF1 (red shade), (D) Layout of causeway at TSF1 (green) and extent to tailings deposition (blue)

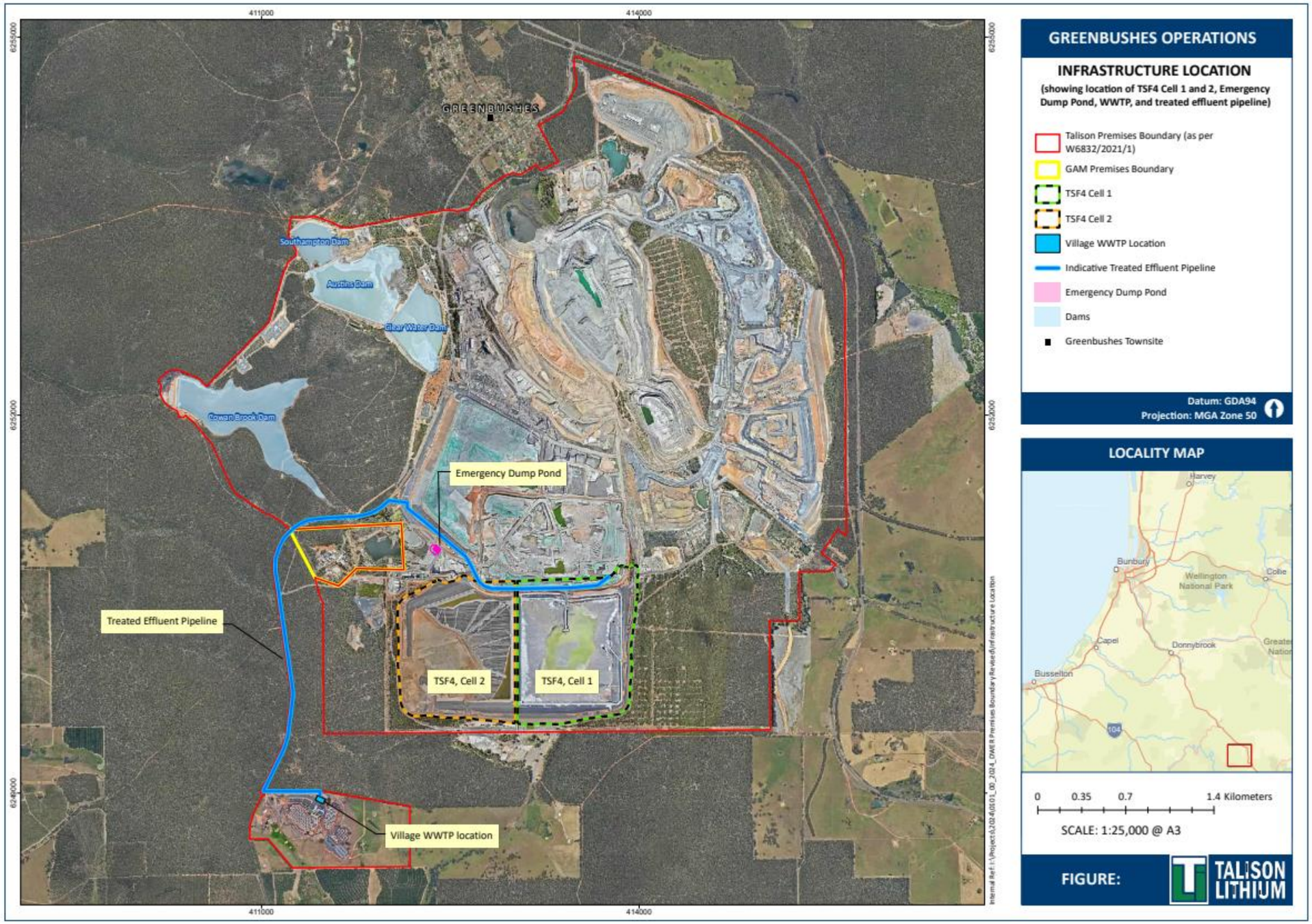

Figure 16: Infrastructure location (showing location of TSF4 Cell 1a, Emergency Dump Pond, WWTP, and treated effluent pipeline)

Figure 17: Clearwater Dam Infrastructure and spillway

Schedule 2: Annual ecological assessment requirements

S1. The licence holder must complete an annual ecological assessment program in each Spring for:

(a) the corresponding parameter;

(b) at the corresponding frequency;

(c) in the corresponding unit; and

(d) following the corresponding method and detail,

as set out in Table 27.

Table 27: Minimum annual ecological assessments requirements

Monitoring location	Parameter	Unit	Frequency	Required method and detail
Locations specified in Table 28 as 'Creekline Studies' and shown in Figure 18.	Water Quality: Arsenic; Cadmium; Calcium; Chromium; Cobalt; Copper; Iron; Lead; Lithium; Magnesium; Manganese; Nickel; Phosphate; Potassium; Sodium; Sulfate; Thorium; Tin; Uranium; Zinc; Total Dissolved Solids (TDS); Organic Carbon	mg/L	Commencing Spring 2024: Annually in spring (in the months of September, October or November)	(a) Total and dissolved concentrations analysed at a NATA-accredited laboratory; (b) Two replicate samples must be collected at each site; (c) QA / QC samples must be collected including field duplicates and blanks; (d) Samples must be analysed as per methods AS/NZS 5667.1 and AS/NZS 5667.6 and at an appropriate limit of reporting to as to allow comparison with relevant guidelines; and (e) Concentrations are to be compared against default toxicity guidelines at the 95% species protection level (99% for bioaccumulating metals) for slightly to moderately disturbed ecosystems (ANZG, 2018), and any site-specific guideline values derived in accordance with the ANZG (2018) methodology, and any future updated methodology. The concentrations must also be compared with updated relevant water quality criteria, particularly for lithium, as they become available
	pH	pH unit		(a) In-field non-NATA accredted analysis permitted; and (b) Recorded levels are to be compared against the default regional guidelines for physical and chemical stressors for south Western Australia for slightly disturbed ecosystems (ANZG 2018), and any site-specific guideline values derived in accordance with the ANZG (2018) methodology
	temperature	ºC		
	turbidity	NTU		
	electrical conductivity	µS/cm		
	dissolved oxygen	mg/L		
	hardness	mg/L		
	Sediment Quality: Arsenic;	mg/kg		(a) Five (5) replicate samples collected at each site. Replicate samples are taken

	Cadmium; Calcium; Chromium; Cobalt; Copper; Iron; Lead; Lithium; Magnesium; Manganese; Nickel; Phosphate; Potassium; Sodium; Sulfate; Thorium; Tin; Uranium; Zinc; Organic carbon.			at different locations within the site to ensure subsequent samples are not influenced by sampling disturbance. Homogenisation and sub-sampling to be carried out under controlled laboratory conditions; (b) QA/QC samples must be collected including field duplicates and blanks; (c) All analytes analysed at a NATA-accredited laboratory; (d) Total, bioavailable and weak acid extraction (WAE) concentrations, in both the total and <63 µm (fine) fractions, for the following analytes: As, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Ni, Th, Sn, U, V, Zn and organic carbon; (e) Each sample to be a composite of the top 2-3 cm of 3-5 cores taken within a 1 m2 quadrat (corners and middle of quadrat); (f) Samples must be analysed as per methods AS/NZS 5667.1 and AS/NZS 5667.12 and at appropriate limit of reporting to as to allow comparison with relevant guidelines; and ~~(g)~~ Concentrations are to be compared against the recommended toxicant default guideline values for sediment quality (Simpson et al. 2013, ANZG 2018), and any site-specific guideline values derived in accordance with the ANZG (2018) methodology, and any future updated methodology. Where DGVs or SSGVs do not exist, then comparison to be made to levels at reference sites, as per ANZG (2018).
	Particle size; Moisture.	%		
	<u>Macroinvertebrate diversity and abundance</u> Taxa (processing for species level identification where possible) and abundance recorded	-		(a) Use a D-frame 250 µm mesh net, with sweep sample over 10 m of defined habitat (i.e., riffle/run) through the entire depth of the water column. (b) Samples to be preserved in the field in at least 70% ethanol and sorted in the laboratory, as several factors can affect the accuracy of a live field sort. In the laboratory, the sample is separated using graduated sieve (3.35 mm, 1 mm and 0.25 mm). The smaller fractions (3.35-1 and 1-0.25) must be identified/sorted by microscope. Identification should be to the highest taxonomic resolution (i.e., species where possible). Abundance for each distinct taxon should be recorded to a log10 scale (1, 2-10, 11-100, 101-1000, 1000+). At least 20 individuals of each taxonomic family as well as sample residues should be retained for quality assurance and quality control (where more than 20 individuals of a taxonomic family are collected in a sample); and

				(c) Macroinvertebrate data should be provided with taxonomy and trait information (at least functional feeding groups and any sensitivity grades (i.e., Plectoptera/ Trichoptera/ Ephemeroptera species richness/ information used for analysis). As well as the number of cells picked and the total number of cells in the box sub-sampler.
	<u>Habitat assessment</u> Habitat type; Biological substrate; Mineral substrate diversity, Sediment particle size composition; Flow velocity	-		(a) In accordance with Western Australian AUSRIVAS habitat assessment protocols.
	<u>Fish and crayfish</u> Species; Abundance of each species; Size of all individuals captured (standard length for fish and orbital carapace length for crayfish recorded)	-		(a) Standard catch per unit effort (CPUE) approach involving trapping, fykes nets and electrofishing; (b) Monitoring types to provide the best representation of fish and crayfish community at each site through the use of traps, fyke nets and electrofishing. Whilst different trapping methods may be needed at different sites (tailored to habitat types and species) every effort should be taken to standardise methods over time at the same site to allow comparison; (c) Where trapping is used, the method must include 5 baited box traps per site and follow general practices outlined in Storer et al., 2022, particularly considering risks to non-target species (rakali/turtles); and (d) If threatened species (as defined by the Biodiversity Conservation Act 2016) are identified during the surveys, the Department of Water and Environmental Regulation CEO must be notified within seven days. (e) Specimens not retained to be analysed in the bioaccumulation of contaminants released alive, back to the site where captured.
Locations specified in Table 28 as 'Bioaccumulation Study" and shown in in Figure 18.	<u>Bioaccumulation of contaminants</u> Arsenic Cadmium Chromium Cobalt Copper Iron Lead Lithium Manganese Nickel	mg/kg		(a) Five samples per site for both fish and crayfish; (b) Total concentrations measures for whole body of sampled fish/crayfish (i.e. major organs in addition to flesh); (c) Total concentrations measured for whole body of sampled fish/ crayfish (i.e., major organs in addition to flesh); (d) Testing to be conducted by a NATA-accredited laboratory for heavy metals/ elements in fish. (e) For submission of NATA-accredited laboratory for the analysis of

	Potassium Thorium Tin Uranium Vanadium Zinc.			bioaccumulation in flesh and organs of larger fish and crayfish, or whole body of smaller fish and crayfish (to be depurated prior to sample submission) <u>Sample preparation</u> (f) Fresh samples delivered on ice (double bagged) within two days; and (g) Frozen samples (frozen within 48 hours of collection) can be stored below -10^{0}C for one year maximum for mercury and two years maximum.

Table 28: Sites for annual ecological monitoring

System	Site Code	Indicative site coordinates (GDA2020 / MGA Zone 50)	
		Easting	Northing
Creekline Study – Norilup Brook, upstream of Norilup Dam (3 sites)	NUS-A	409172	6256317
	NUS-B	409072	6254254
	NUS-C	408578	6252944
Creekline Study – Norilup Brook downstream of Norilup Dam (3 sites)	NDS-A	408745	6252419
	NDS-B	406747	6251321
	NDS-C	404739	6250144
Creekline Study - Cowan Brook (1 site)	COW-C	410101	6252167
Creekline Study – Woljneup Creek (2 sites)	WOL-A	413180	6249160
	WOL-B	411525	6246495
Creekline Study – Hester Brook (8 sites)	HES-A	418286	6255594
	HES-B	418428	6253149
	HES-C	416653	6252240
	HES-D	417192	6251352
	HES-E	417854	6250578
	HES-F	418096	6250157
	HES-G	417742	6248254
Creekline Study – Cascades Gully (2 sites)	CAS-A	415526	6250815
	CAS-B	417869	6249816

Creekline Study – Blackwood River (6 sites)	BLA-A	413444	6245558
	BLA-B	413171	6245559
	BLA-C	411854	6244388
	BLA-D	411276	6245369
	BLA-E	404510	6249422
	BLA-F	404168	6249879
Bioaccumulation Study (10 sites)	Reference Dam	410167	6256771
	Schwenkes Dam	410711	6253996
	Mt Jones Dam	409033	6253559
	Norilup Dam	408720	6252612
	Norilup DS Dam	405154	6249899
	Cowan Brook Dam	410577	6252198
	Saltwater Dam	416633	6252373
	Hester Brook DS Dam	414525	6245867
	WOL-A	413180	6249160
	WOL-B	411525	246495

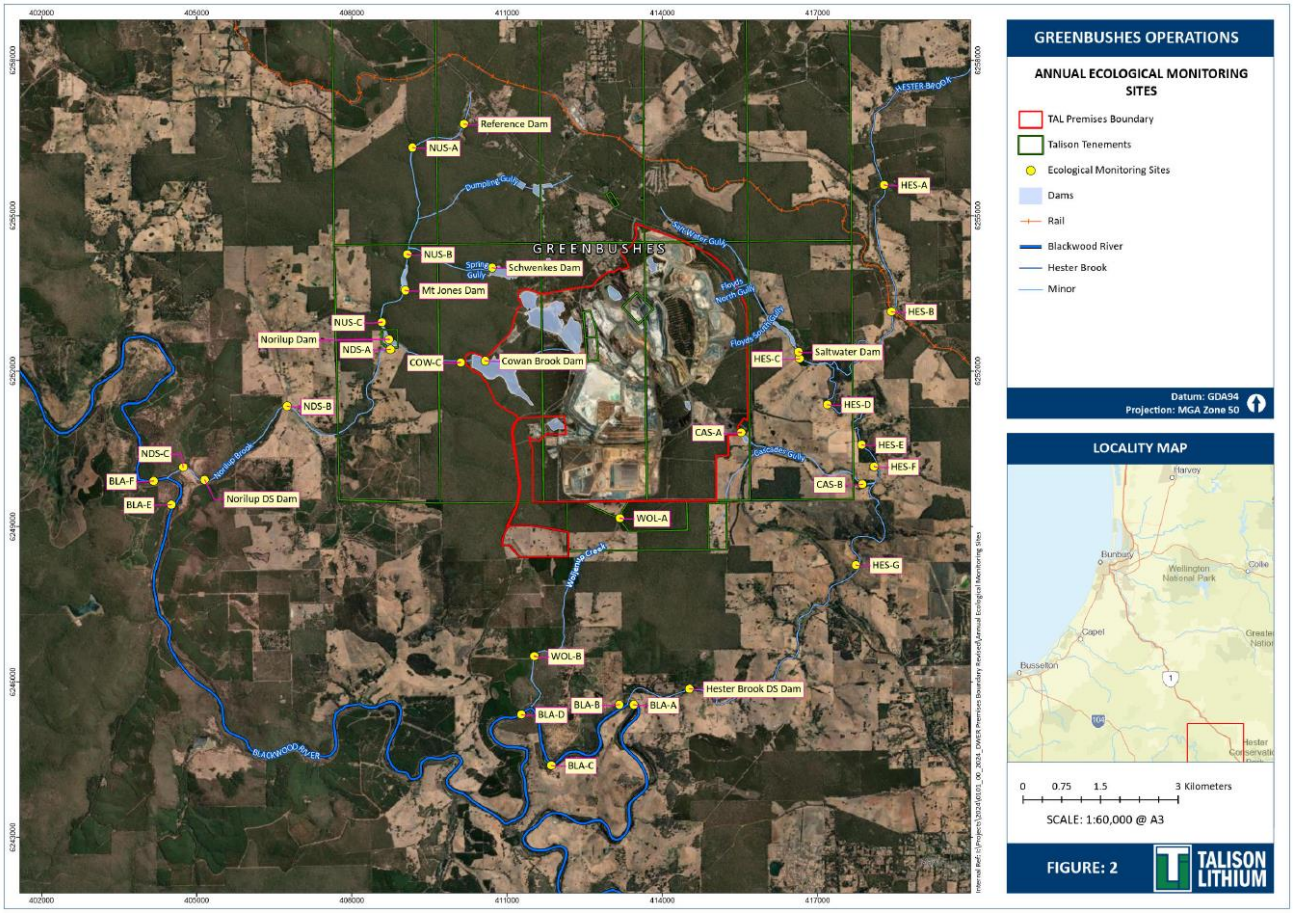

Figure 18: Aquatic monitoring site locations (as detailed in Table 28)

S2. The licence holder must, in addition to the requirements specified in condition S1, provide the following information as part of the Annual Ecological assessment:

(a) Following each annual assessment, if evidence of contamination, by detection of potential contaminants of concern in water, sediment or bioaccumulation in fauna is recorded at the furthest downgradient monitoring sites on Norilup Brook, Woljenup Creek or Hester Brook, greater than concentrations recorded at reference sites, the spatial extent of monitoring must be expanded to assess potential impacts to the Blackwood River.

(b) Bioaccumulation study for fish/ crayfish in receiving dams is to include an assessment of the risk to potential human consumers assessed in accordance with relevant health guidelines. Interpretation of results are to include comparisons of recorded data between downstream monitoring sites and reference sites, using a range of best practice statistical approaches (uni- and multivariate) for hypothesis-based testing of effects and impacts, and trend analysis for gradient responses along creek systems. Analysis of temporal changes in the monitored components will also be undertaken to determine if ecological conditions are worsening due to contaminant exposure. If any risk to human health is identified, this must be reported to the Department of Health immediately.

(c) The annual assessment shall be reviewed on an annual basis to identify opportunities for improvement of the program. Following the development of site-specific water quality guidelines and the completion of the three annual assessments (commencing spring 2023), the program must be reviewed to

identify opportunities to improve future monitoring. If appropriate, the suite of analytes may be revised to target the identified potential contaminants of concern in the future, and is to be approved by the department prior to any changes.

Schedule 3: Premises boundary coordinates

The premises boundary coordinates are set out in Table 29.

Table 29: Premises boundary coordinates (GDA2020) Zone 50

Point	Easting	Northing	Longitude	Latitude
0	413491.6	6254846	116.065	33.84311
1	414589.8	6254424	116.0768	33.84701
2	415387	6253739	116.0853	33.85325
3	415623.6	6253239	116.0879	33.85777
4	415645	6251043	116.0879	33.87758
5	415447.7	6250904	116.0857	33.87882
6	415511.3	6250761	116.0864	33.88012
7	415275.2	6250378	116.0838	33.88355
8	415036.7	6250372	116.0812	33.88359
9	415043.1	6249502	116.0812	33.89143
10	411429.1	6250689	116.0423	33.88042
11	412131.3	6250772	116.0499	33.87974
12	412110.7	6251139	116.0497	33.87643
13	411221.4	6251092	116.0401	33.87677
14	410779.8	6251389	116.0353	33.87406
15	410470.4	6251931	116.032	33.86914
16	410225.1	6252110	116.0294	33.86752
17	410372.2	6252343	116.031	33.86542
18	410563.1	6252230	116.033	33.86646
19	411058.6	6252738	116.0385	33.86192
20	411213.3	6253422	116.0402	33.85577
21	411233.9	6253569	116.0404	33.85444
22	411936.3	6253532	116.048	33.85484
23	412611.3	6253628	116.0553	33.85403
24	413053.4	6253910	116.0601	33.85152

25	413357.5	6254005	116.0634	33.85068
26	413200	6254301	116.0618	33.848
27	411212.8	6249454	116.0398	33.89155
28	411180.7	6249355	116.0394	33.89243
29	411022.5	6249000	116.0377	33.89563
30	410989.9	6249000	116.0373	33.89562
31	411161.9	6249363	116.0392	33.89237
32	411193.1	6249458	116.0396	33.89151
33	411253.5	6249789	116.0403	33.88853
34	411233.2	6249789	116.04	33.88853
35	411111.4	6250771	116.0388	33.87966
36	411091.4	6250770	116.0386	33.87967
37	411447.5	6249023	116.0423	33.89545
38	412177.3	6248896	116.0502	33.89666
39	412181.1	6248416	116.0502	33.90099
40	411246.2	6248406	116.04	33.901
41	410907.3	6248634	116.0364	33.89892
42	411496.5	6249474	116.0429	33.89139
43	411755.3	6250784	116.0458	33.8796
44	411613.7	6250646	116.0442	33.88083

Schedule 4: 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	

Schedule 5: Reporting guidelines

Table 30: Licence Holder's proposed Site-specific water quality guideline values

Contaminant (filtered)	Water quality guidelines (mg/L)				
	Agricultural use - Livestock	Agricultural use - Irrigation	Aquatic Environment	Potable use	Non-potable use
Aluminium	5	5	0.055	0.2	NR
Antimony	0.15	NR	0.09	0.003	0.06
Arsenic	0.5	0.1	0.013	0.01	0.2
Cadmium	0.01	0.01	0.001	0.002	0.04
Caesium	2.0	NR	0.1	0.08	1.6
Chromium (III+VI)	1.0	0.1	0.004	0.05	1.0
Copper	0.5	0.2	0.0014	2.0	40
Lithium	0.82	2.5	2.0	0.007	0.14
Manganese	10	0.2	1.9	0.5	10
Molybdenum	0.15	0.01	0.034	0.05	1.0
Nickel	1.0	0.2	0.05	0.02	0.4
Rubidium	0.39	NR	0.017	0.014	0.28
Thallium	0.13	0.001	0.00003	0.00004	0.0008
Uranium	0.2	0.01	0.0005	0.02	0.4
Vanadium	0.1	0.1	0.0006	0.0002	0.004
Zinc	20	2	0.04	3	60
Sulphate	1000	NR	429	250	NR
Nitrate (as N)	90	NR	2.4	50	NR