



Licence number	L4247/1991/13
Licence holder	Talison Lithium Australia Pty Ltd
ACN	139 401 308
Registered business address	Level 15, 216 St Georges Terrace PERTH WA 6000
DWER file number	2012/0071641
Duration	14/12/2013 to 13/12/2026
Date of amendment	03/10/2023
Premises details	<p>Talison Lithium Mine Maranup Ford Road GREENBUSHES WA 6254</p> <p>Legal description - Mining tenements M01/3, M01/6, M01/7, M01/8, M01/9 and M1/16 General purpose lease G01/1 and G01/2 As defined by the Premises maps in Schedule 1 and coordinates in Schedule 3</p>

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations</i> 1987)	Assessed production / design capacity
Category 5: Processing of beneficiation of metallic or non-metallic ore	7,100,000 tonnes beneficiated per annual period. 5,000,000 tonnes of tailings deposited per annual period

This amended licence is granted to the licence holder, subject to the attached conditions, on 03 October 2023 by:

**A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES**

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

[L4247/1991/13 \(date of latest amendment: 03/10/2023\)](#)

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.

L4247/1991/13 (date of latest amendment: 03/10/2023)

Date	Reference number	Summary of changes
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.
14/12/2022	L4247/1991/13	Amendment for: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> fix typographical 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.

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:

Infrastructure and equipment

- The licence holder must ensure that the materials listed in Table 1 are only discharged into containment cells and/or dams or ponds with the relevant infrastructure requirements and at the locations specified in Table 1.

Table 1: 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.	<ul style="list-style-type: none"> Embankment height at RL 1,282 m; Working decant system; and Emergency tailings deposition must: <ul style="list-style-type: none"> 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; utilise water cart to wet down dust-generating surfaces to minimise dust emissions during deposition; be graded north towards a stormwater collection sump, which is pumped to the decant pond at TSF2; and maintain a minimum freeboard of one metre from the embankment crest.
TSF2	Tailings from: <ul style="list-style-type: none"> onsite mining of the lithium ore body; and tailings from TSF1 tailings retreatment plant. 	<ul style="list-style-type: none"> Buttress; Two seepage collection trenches equipped with drainage pipes; pipelines (Figure 8 of Schedule 1); 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); One upstream drainage trench positioned 25 m from the raise centreline along the southern, western and northern wall (red line, Figure 8 of Schedule 1); Trenches leading to Sump 01 (S1), Sump 02 (S2), Sump 03 (S3); Collected water at S1, S2 and S3 is pumped back to Mine Water Circuit; Embankment rises to 1,280 m and associated infrastructure in accordance with following documents: <ul style="list-style-type: none"> <i>Talison Lithium Australia – Tailings Storage Raise 2021 Licence Amendment Application and Supporting documentation.</i> Excavation of tailings for deposition at TSF1 must: <ul style="list-style-type: none"> not exceed 900,000 m³ in aggregate; only commence where a test pit has been visually inspected for seepage inflow, pit

Containment cell or dam number(s)	Material	Infrastructure requirements
		<p>wall slumping and/or instability and the tailings are classified as either 'dry' or 'moist', in accordance with AS 1726:2017;</p> <ul style="list-style-type: none"> ○ 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; ○ be graded away from the nearest embankment crest; ○ maintain a separation distance of at least 200 m from the boundary of the decant pond; ○ follow the layout shown in Figure 15 of Schedule 1; and ○ utilise water cart to wet down dust-generating surfaces to minimise dust emissions during excavation.
Clear Water Dam	<ul style="list-style-type: none"> • 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, treated water from the reverse osmosis water treatment plant and arsenic remediation unit and decant water from the WTF settlement tanks; and • Discharge of decant water from the WTF, lithium concentrated effluent from the WTP and arsenic concentrated effluent from the ARU is only permitted until 30 June 2024. As per condition 17 – after this time, an alternative effluent disposal strategy is to be utilised. 	<ul style="list-style-type: none"> • Underdrainage system; • Seepage cut-off trenches; • Arsenic remediation unit to treat water within the mine circuit; • Freeboard to allow for a 1% annual exceedance probability 72-hour event; • Visual marker installed along embankment for freeboard monitoring.
Austins Dam	<ul style="list-style-type: none"> • Process water directly from Clear Water Dam; • Treated process water from the Reverse Osmosis Water Treatment Plant and Arsenic Remediation Unit (via the water treatment facility); and • Clean and potentially contaminated stormwater runoff from areas adjacent to dam. 	<ul style="list-style-type: none"> • Freeboard to allow for a 1% annual exceedance probability 72-hour event; and • Visual marker installed along embankment for freeboard monitoring.
Southampton Dam	<ul style="list-style-type: none"> • Process water directly from Austins Dam; • Treated process water from the Reverse Osmosis Water Treatment Plant and Arsenic Remediation Unit (via the water treatment facility); and • Clean and potentially contaminated stormwater runoff 	<ul style="list-style-type: none"> • Freeboard to allow for a 1% annual exceedance probability 72-hour event; and • Visual marker installed along embankment for freeboard monitoring.

Containment cell or dam number(s)	Material	Infrastructure requirements
	from areas adjacent to dam.	
Cowan Brook Dam	<ul style="list-style-type: none"> Contaminated and clean stormwater; Overflows from Austins Dam; Emergency overflows from southern seepage recovery sump; Treated process water from the Reverse Osmosis Water Treatment Plant and Arsenic Remediation Unit (via the water treatment facility) 	<ul style="list-style-type: none"> Freeboard to allow for a 1% annual exceedance probability 72-hour event; Visual marker installed along embankment for freeboard monitoring; and 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	<ul style="list-style-type: none"> Mine dewater; Stormwater; and Process water. 	None specified.
Cornwall Pit	<ul style="list-style-type: none"> Mine dewater; Stormwater; and Process water. 	None specified.
Vultans Pit	<ul style="list-style-type: none"> Mine dewater; and Stormwater. 	None specified.

- 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.
- 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 2.

Table 2: Management plan

Management plan reference	Parts	Date of document
Surface Water Management Plan	Section 10.1	23 September 2015, Version 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.
- 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 3.

Table 3: Management of waste

Waste type	Management strategy	Requirements
Inert Waste Type 1	Receipt, handling and disposal of waste by landfilling	<ul style="list-style-type: none"> No more than 450 tonnes per year of all waste types cumulatively must be disposed of by landfilling; Disposal of waste by landfilling must only take place within the waste rock dump area; Waste must be placed in a defined trench or within an area defined by earthen bunds; The active tipping area must be restricted to a maximum linear length of 30 m; and Construction, operation and decommissioning of landfill cells can occur within the defined landfill area, providing there is no waste within: <ul style="list-style-type: none"> 100 m of any surface water body; and 3 m of the highest level of the water table aquifer. <p>Figure 2 of Schedule 1 shows the approximate landfill location within the Floyds WRL.</p>
Inert Waste Type 2		
Clean Fill		
Used Tyres ¹	Burial	<ul style="list-style-type: none"> Used tyres must only be buried in the waste rock dump; and 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*.

6. The licence holder must ensure that cover is applied and maintained on landfilled wastes in accordance with Table 4 and that sufficient stockpiles of cover are always maintained on site.

Table 4: Cover requirements

Waste type	Material	Depth	Timeframe
All waste	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*.

7. The licence holder must implement security measures at the landfill area to prevent unauthorised access to the site.
8. The licence holder must:
- undertake inspections as detailed in Table 5;
 - where an inspection requirement as detailed in Table 5 is not met, take corrective action within 30 calendar days to mitigate adverse environmental consequences; and
 - maintain a record of all inspections undertaken.

Table 5: Inspection of infrastructure

Scope of inspection	Inspection requirement	Frequency of inspection	Location
Clear Water Dam; Austins Dam; Southampton Dam	<ul style="list-style-type: none"> Freeboard to all dams to be no less than to allow for a 1% annual exceedance probability 72-hour event. 	Daily	As shown in Figure 2 of Schedule 1.

Scope of inspection	Inspection requirement	Frequency of inspection	Location
Cowan Brook Dam	<ul style="list-style-type: none">Visual inspection to confirm freeboard in place to allow for a 1% annual exceedance probability 72-hour event; andAfter 01 January 2024, visual inspection to confirm freeboard to allow 1% annual exceedance probability 72-hour event plus 0.5 m.		As shown in Figure 2 of Schedule 1
Tailings Retreatment Plan Settlement Pond	<ul style="list-style-type: none">Visual inspection to confirm integrity of liner, requirement to remove sediment, and whether the pond is overflowing via the spillway.		As shown in Figure 10 of Schedule 1.
Tailings pipelines (including those between Tailings Retreatment Plant and TSF2)	<ul style="list-style-type: none">Visual inspection to confirm integrity of pipes and no leaks present.		
Concentrate Storage Area, including Wedge Pit, Plant Wide Wedge Pit, and South West Detention Pond	<ul style="list-style-type: none">Visual inspection to confirm capacity is available.		As shown in Figure 6 of Schedule 1.
Reverse Osmosis Water Treatment Plant	<ul style="list-style-type: none">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			

9. The licence holder must construct/install the infrastructure listed in Table 6, in accordance with:

- the corresponding design and construction/installation requirements;
 - at the corresponding infrastructure location; and
 - within the corresponding timeframe,
- as set out in Table 6.

Table 6: Infrastructure construction requirements

Item	Infrastructure	Construction/ installation requirements	Infrastructure location	Timeframe
1	Water treatment facility	<ol style="list-style-type: none"> Ability to treat minimum 590,000 m³/year effluent streams from the WTP and ARU; Constructed to allow manual monitoring of high tank levels; and To be built in an earthen bunded area to contain leaks/spills – with overflow directed to Clear Water Dam. 	As shown in Figure 9 of Schedule 1.	-

Item	Infrastructure	Construction/ installation requirements	Infrastructure location	Timeframe
2	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 shown in Figure 5 in Schedule 1	30 November 2023 or prior
3	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.		
4	PM ₁₀ high-volume sampler	a) Compliant with AS/NZS 3580.9.6 – <i>Determination of suspended particulate matter – PM₁₀ high volume sampler with size selective inlet – Gravimetric method</i> ; and b) Siting compliant with AS/NZS 3580.1.1.		
5	Clear Water Dam; Austins Dam; Southampton Dam; Cowan Brook Dam	a) Install visual markers along embankments for freeboard monitoring.	As shown in Figure 2 of Schedule 1.	31 August 2023

- 10.** The licence holder must within 30 calendar days of an item of infrastructure or equipment required by condition 9 being constructed and/or installed:
- undertake an audit of their compliant with the requirements of condition 9; and
 - prepare and submit to the CEO an Environmental Compliance Report on that compliance.
- 11.** The Environmental Compliance Report required by condition 10 must include, as a minimum, the following:
- certification from the infrastructure installer that the items of infrastructure specified in Table 6 or component(s) thereof, as specified in condition 9, have been constructed in accordance with the relevant requirements specified in condition 9;
 - as-constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 9; and
 - be signed by a person authorised to represent the licence holder and contains the printed name and position of that person.
- 12.** The licence holder must ensure that the site infrastructure and equipment listed in Table 7 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 7.

Table 7: 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 tailings excavation area to wet down dust-generating surfaces; b) Use of mulch or dust suppressants to any cleared (previously mined) areas; c) Reduced speed limits to 30 km/hour; d) The total excavation area is to cover a maximum of 9 hectares; and e) TSF1 to be stripped and progressively mined in 100 m ² grid blocks, with only two 100 m ² blocks active at any time.	As shown in Figure 10 of Schedule 1
2	Tailings retreatment – screening equipment	a) Screening equipment to be fitted with a spray system to avoid dust lift-off and maintain tailings moisture.	
3	Tailings Retreatment Plant, comprising: <ul style="list-style-type: none"> • ROM stockpile pad; • Feed preparation area; • Tailings thickening tanks; • Magnetic separation building; • Main plant; and • Stormwater drainage infrastructure. 	a) The feed bin to the stockpile will 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 Table 15 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); d) Final product to be stockpiled within a covered bund with 5-8% moisture content to prevent dust lift-off; e) Maintain stormwater drainage system (including open drains, culverts, pits and pipes) to minimise infiltration of process liquid and contaminated stormwater to subsurface soils; f) Stormwater runoff from the TRP plant is directed to the TRP settlement pond; and g) 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

	Site infrastructure and equipment	Operational requirement	Infrastructure location
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 $\leq 0.5\text{mg/L}$ 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

13. The licence holder must:

- (a) conduct an assessment of all pipelines containing mine water, circuit process water, process liquors, WTP and ARU effluent and tailings to determine which pipelines do not meet the following requirements:
 - i. equipped with telemetry systems and pressure sensors to allow the detection of leaks and failures; and
 - ii. equipped with automatic cut-outs in the event of a pipe failure; and
 - iii. provided with secondary containment sufficient to contain any spill for a period equal to the time between inspections; and
- (b) develop and submit to the CEO a plan by 01 July 2023, to retrofit those pipelines identified by the assessment required by condition 13(a) as not meeting the requirements listed in condition 13(a) by 01 July 2025.

Specified actions

14. The licence holder must prepare and submit to the CEO, by 31 October 2023, a Trigger Action Response Plan (TARP) that must include, but not be limited to:

- (a) details of mechanisms used for early identification of dust-producing conditions and activities that may cause a breach of the adopted 24-hour average PM_{10} concentration dust limit (Table 15);
- (b) a tiered response plan to high-dust events when dust monitoring trigger values for management actions are exceeded;
- (c) review of site data to inform meteorology trigger values for management action and forecasting of meteorological conditions known to increase the risk of dust generation and dispersal off-site;
- (d) responsibilities within the site organisation structure for achieving compliance with the TARP; and
- (e) methods to measure the effect of actions taken to reduce dust generation.

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 8 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this licence.

Table 8: 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.

Specified actions

- 17.** On or before 30 September 2023, the licence holder must submit to the CEO a Clear Water Dam Emissions Management Plan, which includes, but is not limited to:
- (a) strategies, with a timeline for implementation, to limit discharges, including seepage and overflow of contaminated water containing lithium or arsenic from Clear Water Dam, by 31 December 2024 or sooner; and
 - (b) a plan, with a timeline for implementation, to progressively stop discharge of water treatment effluent from the WTP, ARU and WTF into Clear Water Dam by 30 June 2024 or sooner; or
 - (c) an assessment that demonstrates that the ongoing discharge of water treatment effluent from the WTF, ARU and WTF into Clear Water Dam poses no environmental risk to offsite receptors.
- 18.** On or before 30 September 2023, the licence holder must submit to the CEO a water balance, as determined by a suitably qualified hydrogeologist, for Clear Water Dam, which includes but is not limited to:
- (a) a detailed water balance calculations for all inputs and outputs for Clear Water Dam; and
 - (b) methods used for measurement/calculation of seepage rate from Clear Water Dam.
- 19.** On or before 30 July 2023, the licence holder must submit a proposal for a revised annual ecological assessment developed by a suitably qualified aquatic scientist, which at a minimum includes:
- (a) additional sampling locations providing sufficient spatial coverage to allow assessment of risk to Blackwood River and other surface water receptors to the east, west and south of site;
 - (b) includes the minimum requirements as set out in Schedule 2; and
 - (c) for commencement in Spring 2023.

Monitoring

General monitoring

- 20.** 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.
- 21.** 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.
- 22.** The licence holder must record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.
- 23.** 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.
- 24.** The licence holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO, accompanied with a report comprising details of any modifications to the methods.

Monitoring of point source emissions to surface water

- 25.** The licence holder must undertake the monitoring in Table 9 according to the specifications in that table.

Table 9: 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 20
		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	Spot sample	As per condition 20
		pH	-			
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
		Southampton Dam				
pH	-					
EC	µS/cm					
Lithium	mg/L					
Arsenic						
Cadmium						
Copper						
Manganese						
Nickel						
Uranium						
Floyds North			Surface water discharge off premises	Flow	m ³ /hr	One event per quarter ²
	pH	-				
	EC	µS/cm				
	Lithium	mg/L				
	Arsenic					
	Cadmium					
	Chromium					
	Copper					
	Manganese					
	Nickel					
	Uranium					
Floyds South	Surface water discharge off premises	Flow	m ³ /hr	One event per quarter ²	Spot sample	As per condition 20
		pH	-			
		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 20
		EC	-			
		Lithium	µS/cm			

Monitoring point reference, as shown in Figure 2 of Schedule 1	Process description	Parameter ¹	Unit	Frequency	Averaging period	Method
		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 20
		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

26. The licence holder must undertake the monitoring in Table 10 and Table 11 according to the specifications in that table.

Table 10: 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	
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

Monitoring point reference, as shown in Figure 2 of Schedule 1	Process description	Parameter	Unit	Frequency	Method
	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 Austins 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 11: 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				
Clear Water Dam Southampton Dam Austins Dam Cowan Brook Dam	pH	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				

L4247/1991/13 (date of latest amendment: 03/10/2023)

Monitoring point reference, as shown in Figure 2 of Schedule 1	Parameter	Limit	Unit	Averaging period	Frequency
	Copper				
	Iron				
	Lithium				
	Manganese				
	Nickel				
	Uranium				
	Thorium				
	Radium 226	-	Bq/L		
	Radium 228				

27. The licence holder must monitor the water balance of each dam in the mine water circuit as detailed in Table 12 according to the specifications in that table.

Table 12: 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: <ul style="list-style-type: none"> Input from site operation (tailings decant, seepage, stormwater, water treatment effluent¹, treated process water² etc.); Overflow events from other process water dams; Seepage from other process water dams; and Rainfall. 	Volume	m ³	Monthly
	Available capacity	Volume	m ³	Weekly
	Freeboard	Metres below top of dam	m	Daily
	Volume of all outputs from each dam, including but not limited to: <ul style="list-style-type: none"> Total seepage from each dam; Overflow events; and 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).

Ambient air quality and meteorological monitoring

28. The licence holder must undertake the monitoring in Table 13 according to the specifications in that table.

Table 13: Monitoring of ambient air quality

Monitoring point reference, as shown in Figure 5 of Schedule 1	Parameter	Unit ¹	Averaging period	Frequency	Method
Osiris (North)	Particulates as PM ₁₀	µg/m ³	5 minutes	Continuous	Per manufacturer's instruction
Osiris (Southeast)					AS/NZS 3580.9.8
Continuous AS PM ₁₀ Monitor South					
Continuous AS PM ₁₀ Monitor North					
Osiris (North)	Total suspended particulates	µg/m ³	5 minutes	Continuous	Per manufacturer's instruction
Osiris (Southeast)					
PM ₁₀ high-volume sampler	Metals listed in Schedule 4		24 hours	Sample collected every sixth day for a period of 12 months, commencing 1 December 2023. Sampler time clock set from midnight to midnight.	AS/NZS 3580.9.6
	Particle size distribution (down to a fraction of ≤10µm and ≤4µm) and aspect ratio	% per sieve size (mm)	Spot sample	One off sampling event, collected in December 2023	AS 4863.1-2000
	Airborne asbestos fibre count	Fibres/mL		One sample per month, for a period of 12 months, commencing 1 December 2023.	NOHSC:3003
	Respirable crystalline silica	Size weighted respirable fraction (%w/w) down to a fraction of ≤4 µm.			X-Ray Diffraction (XRD) alpha-quartz (NIOSH7500)

Note 1: All units are referenced to STP dry.

- 29.** The licence holder must monitor and record the ambient meteorological conditions at the premises in accordance with the requirements specified in Table 14 and record the results of all such monitoring.

Table 14: 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	-			

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

- (a) at the monitoring located listed in Table 15;
- (b) for the corresponding parameter;
- (c) exceed the corresponding trigger value for management action and/or limit value;

when monitored in accordance with conditions 28 and 29.

Table 15: Ambient air quality and meteorological trigger and limit values

Monitoring point reference, as shown in Figure 5 of Schedule 1	Parameter	Trigger value	Limit
NEPM concentration limits			
Continuous AS PM ₁₀ Monitor South	PM ₁₀ (24-hour average)	N/A	50 µg/m ³
Continuous AS PM ₁₀ Monitor North			
Trigger values for management response actions in Table 20			
Osiris (North)	PM10 (15-minute rolling average – refer to Figure 13 for correct methodology)	100 µg/m ³	N/A
Osiris (Southeast)			
Meteorological Station (Premises)	Wind speed (hourly average)	Less than 2.2 m/s or greater than 7.0 m/s	N/A

Ambient water quality monitoring

31. The licence holder must undertake the monitoring in Table 16 and Table 17 according to the specifications in those tables and record and investigate results that do not meet any limit or target specified.

Table 16: 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				
	Arsenic				
	Cadmium				
	Chromium, Cr (VI)				
	Copper				
	Manganese				
	Nickel				
	Uranium				
	Chloride	-			
	Nitrate				
	Magnesium				
	Sodium				
	Sulfate				
	Cobalt				
	Iron				
	Thorium				
Radium 226	-	Bq/L	Six monthly		
Radium 228	-				

Table 17: 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			

Monitoring point reference, as shown in Figure 3 of Schedule 1	Parameter	Unit	Averaging period	Frequency		
	Cobalt					
	Copper					
	Iron					
	Lithium					
	Manganese					
	Nickel					
	Uranium					
	Thorium					
	Radium 226					
	Radium 228	Bq/L		Six monthly		
Deep bores⁴: MB97-05 MB17/02D MB97/04 MB17/04D MB17/05 MB17/06D MB3 MB01/01 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				
	Radium 228					
	MB97/01 ¹ MB97/02 ¹ MB01/11 ¹	Standing water level		m(AHD) & mbgl		
pH		-				
Total dissolved salts		mg/L				
Sulfate						
Sodium						
Arsenic						
Lithium						

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.

32. 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.
33. Each spring, the licence holder must complete an annual ecological assessment of four sites upstream (two of which are in Cowan Brook) and six sites downstream of the Norilup Dam. The annual assessment must evaluate:
- water quality at each site, including an analysis of arsenic, calcium cadmium, cobalt, copper, iron, lead, lithium, magnesium, manganese, nickel, phosphate, potassium, sulfate, sodium, thorium, uranium and zinc (soluble and total metal concentrations) in each sample from a NATA registered laboratory;
 - five replicate sediment samples at each site, including an analysis of total and soluble metal/metalloid concentrations in sediments at a NATA-registered laboratory;
 - macroinvertebrate diversity and abundance sampled over a 10 m distance using a sweep method, where permitted;

- (d) aquatic fauna diversity and abundance, sampled using five baited box traps per site; and
 - (e) from 2017, bioaccumulation of contaminants including, arsenic, calcium, cadmium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, nickel, potassium, sodium and zinc, as a minimum, analysed in the whole body of sampled fish/crayfish. Samples to include major organs in addition to flesh. Where any threatened aquatic fauna (as defined by the *Wildlife Conservation Act 1950*) are identified during the course of sampling, the licence holder must notify the CEO within seven days.
- 34.** The licence holder must undertake the monitoring in Table 18 according to the specifications in that table.

Table 18: 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.

- 35.** The licence holder must submit to the CEO, with the Annual Environmental Report required by condition 42, an Annual Ecological Assessment demonstrating their compliance with condition 33 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.

Specified actions

- 36.** The licence holder must, by 31 August 2023, collect samples at the premises in accordance with the requirements specified in Table 19 and record the results of all such monitoring.

Table 19: Sampling of product and tailings

Parameter	Unit	Monitoring location(s)	Frequency	Averaging period	Method
Respirable crystalline silica	Size weighted respirable fraction (%w/w) down to fraction of $\leq 10 \mu\text{m}$	Sample 1: Chemical Grade Plant 2 (CGP2) final product stockpile	One off sampling event	Spot sample	X-Ray Powder Diffraction or Fourier Transform-Infrared Spectroscopy (powder obtained from bulk analysis / sedimentation)
Particle size distribution (down to a fraction of $\leq 10 \mu\text{m}$ and $\leq 4 \mu\text{m}$)	% per sieve size (mm)	Sample 2: CGP2 crushed ore stockpile Sample 3: TSF1 tailings (from 0.5 m to 1.0 m depth)			AS 4863.1-2000
Particle aspect ratio	-				-

- 37.** The licence holder must, in the event of a parameter reaching the corresponding trigger value specified in Table 15, undertake the management actions that correspond with the relevant parameter and corresponding monitoring locations within the corresponding timeframes as specified in Table 20.

Table 20: Management actions required in the event of trigger value exceedance

Monitoring point reference, as shown in Figure 5 of Schedule 1	Parameter	Management action	Timeframe
Osiris (North)	PM ₁₀	<ul style="list-style-type: none"> Investigation of the dust source and actions corresponding to findings; If dust source is identified, implement immediate dust abatement measures, which may include (but are not limited to) ceasing/changing dust-causing activities; Application of dust suppression methods to dust source; and Cease activities, if dust cannot be 	Management actions to commence immediately upon the licence holder being notified of exceedance and be continued for the duration of the trigger event.
Osiris (Southeast)			

Monitoring point reference, as shown in Figure 5 of Schedule 1	Parameter	Management action	Timeframe
		adequately controlled.	
Meteorological Station (Premises)	Wind speed	<ul style="list-style-type: none"> Precautionary dust suppression methods. 	Management actions to commence immediately upon the licence holder being notified of exceedance and be continued for the duration of the trigger event.
Meteorological Station (Greenbushes)			

Records and reporting

- 38.** 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:
- the name and contact details of the complainant (if provided);
 - the time and date of the complaint;
 - the complete details of the complaint and any other concerns or other issues raised; and
 - the complete details and dates of any action taken by the licence holder to investigate or response to any complaint.
- 39.** The licence holder must:
- undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
 - 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.
- 40.** The licence holder must maintain accurate and auditable books, including the following records, information, reports, and data required by this licence:
- the calculation of fees payable in respect of this licence;
 - the works conducted in accordance with condition 9 of this licence;
 - any maintenance of infrastructure that is performed in the course of complying with condition 1 to 8 and 12 of this licence;
 - monitoring programmes undertaken in accordance with conditions-25 to 29, 31, 33, 34 and 35 of this licence; and
 - complaints received under condition 38 of this licence.
- 41.** The books specified under condition 40 must:
- be legible;
 - if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;
 - be retained by the licence holder for the duration of the licence; and
 - be available to be produced to an inspector or the CEO as required.

- 42.** 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 21 in the format or form specified in that table.

Table 21: 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 8	Corrective actions taken for infrastructure/equipment not performing as per inspection requirements.	
Condition 25 (Table 9) Condition 26 (Table 10, Table 11) Condition 27 (Table 12)	Summary of surface water flow trends and mine water circuit water balance (including seepage) for the reporting period.	
Condition 35	Annual assessment that evaluates the information listed in condition 33.	As specified in condition 35
Condition 28 (Table 13) Condition 29 (Table 14) Condition 30 (Table 15) Condition 37 (Table 20) Condition 45 (Table 23)	Monitoring of ambient air quality (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 26 (Table 10, Table 11) Condition 31 (Table 16, Table 17)	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 provided as per condition 43.
Condition 38	Complaints summary	None specified
Condition 39	Compliance	Annual Audit Compliance Report (AACR)

- 43.** The licence holder must ensure that the Annual Environmental Report also contains:
- any relevant process, production or operational data recorded under condition 22; and
 - an assessment of the information contained within the report against previous monitoring results and licence limits.
- 44.** The licence holder must submit the information in Table 22 to the CEO according to the specifications in that table.

Table 22: 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 31 (Table 16)	Ambient surface water quality	Quarterly	Within 30 days	None specified
Condition 31 (Table 17)	Ambient groundwater quality	Quarterly	Within 30 days	None specified
Condition 25 (Table 9) Condition 26 (Table 10, Table 11)	Surface water discharges and process monitoring	Quarterly	Within 30 days	None specified
Condition 34 (Table 18)	Norilup Dam downstream flows	Quarterly	Within 30 days	None specified

45. Where an exceedance of the PM₁₀ trigger value for management action has been identified per condition 30, the licence holder must provide a report on the following information in relation to any exceedances identified in that condition, including:

- the nature, volume and characteristics of the emissions or ambient concentrations exceedance;
- the time and date when the exceedance occurred;
- whether any environmental impact occurred as a result of the exceedance, and if so, what that impact was and where the impact occurred;
- the details of the management action(s) taken pursuant with condition 37 in response to the exceedance;
- the details of the results and effectiveness of the management action(s) taken;
- 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
- the corresponding data as set out in Table 23.

Table 23: Data to include in the Exceedance Report

Condition or table	Dust criteria exceeded	Format or form	Reporting period	Report submission date
Condition 28	Osiris real-time PM ₁₀ monitoring (trigger value)	Tabulated details on dust criteria exceedances with corresponding meteorological conditions recorded at the time of exceedance.	Quarterly	Within 7 days, after the end of the reporting period where exceedance(s) occurred.
Condition 29	Meteorological monitoring (wind speed)			

46. The licence holder must submit a compliance document to the CEO, following construction of the TSF2 embankment works to RL 1,265 m and prior to commissioning of the same. Further compliance documents must be submitted to the

CEO following each 5m lift and prior to commissioning, to a total height of RL 1,280 m.

- 47.** The compliance document required by condition 46 must :
- (a) certify that the works were constructed in accordance with the conditions of the licence; and
 - (b) be signed by a person authorised to represent the licence holder and contain the printed name and position of that person within the company.
- 48.** The licence holder must ensure that the parameters listed in Table 24 are notified to the CEO, in accordance with the notification requirements of the table.

Table 24: Notification requirements

Condition or table	Parameter	Notification requirement ¹	Format or form ²
Condition 3	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 4	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.	N1
Condition 26 Condition 30 Condition 31	Breach of any limit specified in Table 11, Table 15 and Table 16.	Part B: As soon as practicable.	N1
Condition 24	Calibration report	As soon as practicable.	None specified
Condition 33	Identification of any threatened fauna species as listed under the <i>Wildlife Conservation Act 1950</i>	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 5.

Definitions

In this licence, the terms in Table 25 have the meanings defined.

Table 25: Definitions

Term	Definition
ACN	Australian Company Number
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 <i>Selection of containers and preservation of water samples for microbiological analysis</i> .
AS 1726:2017	means the Australian Standard AS 1726:2017 <i>Geotechnical site investigations</i> .
AS 3580.1.1	means the Australian Standard AS 3580.1.1 <i>Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment</i> .
AS 3580.9.6	means the Australian Standard AS 3580.9.6 <i>Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – PM10 high volume sampler with size - selective inlet – Gravimetric method</i> .
AS/NZS 3580.9.8	means AS 3580.9.8: <i>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</i>
AS/NZS 3580.14	means AS/NZS 3580.14:2014 <i>Methods for sampling and analysis of ambient air Meteorological monitoring for ambient air quality monitoring applications</i>
AS 4863.1-2000	means AS 4863.1-2000 <i>Particle size analysis - Laser diffraction methods - General Principles</i>
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples</i> .
AS/NZS 5667.4	means the Australian Standard AS/NZS 5667.4 <i>Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made</i> .
AS/NZS 5667.6	means the Australian Standard AS/NZS 5667.6 <i>Water Quality – Sampling – Guidance on sampling of rivers and streams</i> .

Term	Definition
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 <i>Water Quality – Sampling – Guidance on sampling of waste waters</i> .
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 <i>Water Quality – Sampling – Guidance on sampling of groundwaters</i> .
AS/NZS 5667.12	means the Australian Standard AS/NZS 5667.12 <i>Water Quality – Sampling – Guidance on sampling of bottom sediments</i> .
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 <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
Department / DWER	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (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	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (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 <i>Guideline for the assessment and management of contaminated sites</i> , as updated from time to time.
Inert Waste Type	has the meaning defined in Landfill Definitions.

Term	Definition
1	
Inert Waste Type 2	has the meaning defined in Landfill Definitions.
Landfill Definitions	means the document titled “ <i>Landfill Waste Classification and Waste</i> ”.
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
mbgl	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 “ <i>National Environment Protection (Assessment of Site Contamination) Measure</i> , 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.

Term	Definition
Storer et al., 2022	means Storer T, O'Neill K, Christie, E, Galvin L & van Looij E 2022, <i>The South West Index of River Condition, Module 2 – method summary: collection and analysis of aquatic biota</i> , 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 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 (<i>Leading Practice Handbook: Tailings Management</i> , Australian Government, 2016).
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

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)



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

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)

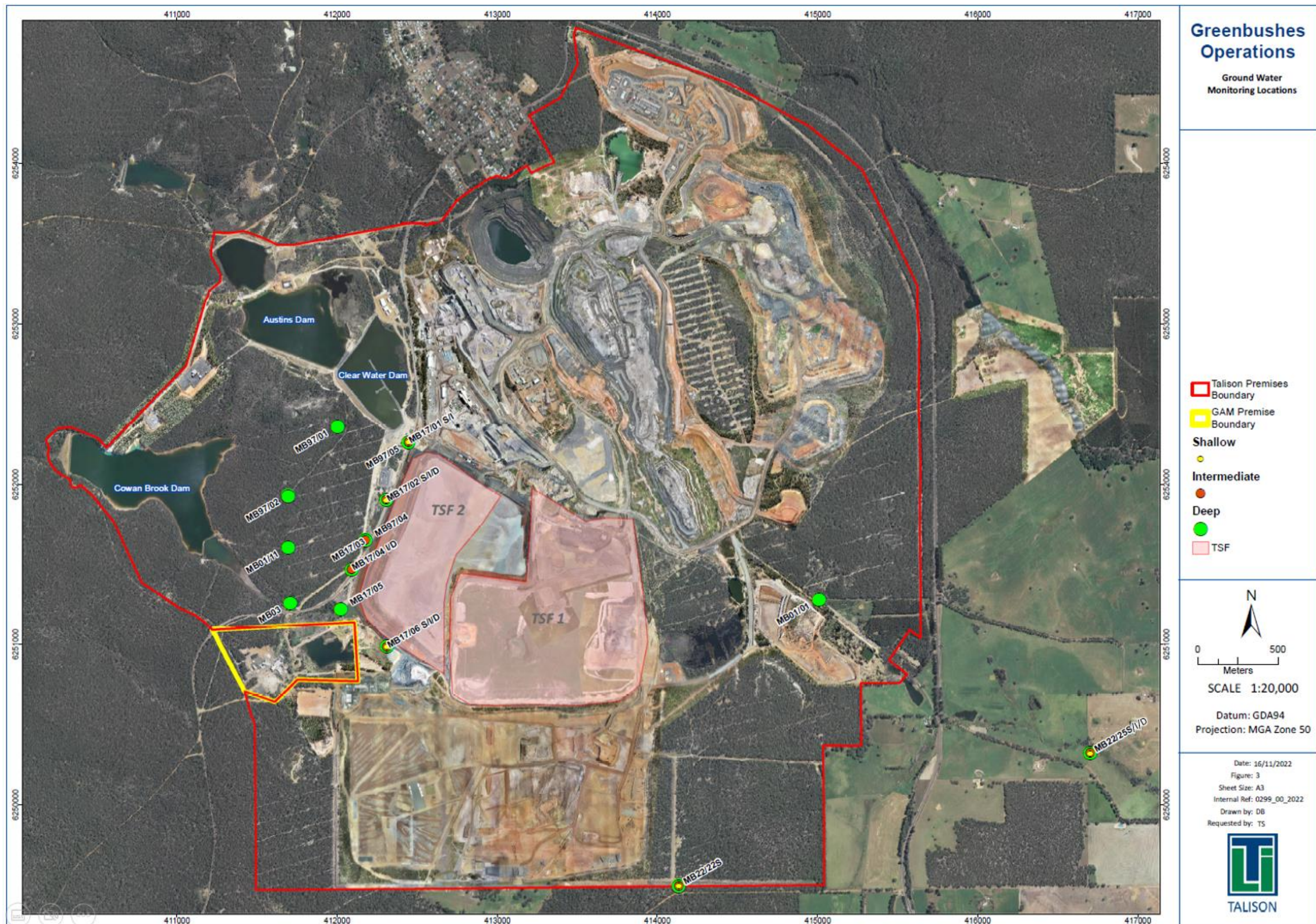


Figure 3: Groundwater monitoring locations

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)



Figure 4: Noise quality monitoring locations

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)



Figure 5: Ambient air quality monitoring locations



Figure 6: Location of CGP2 key water containment infrastructure

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)

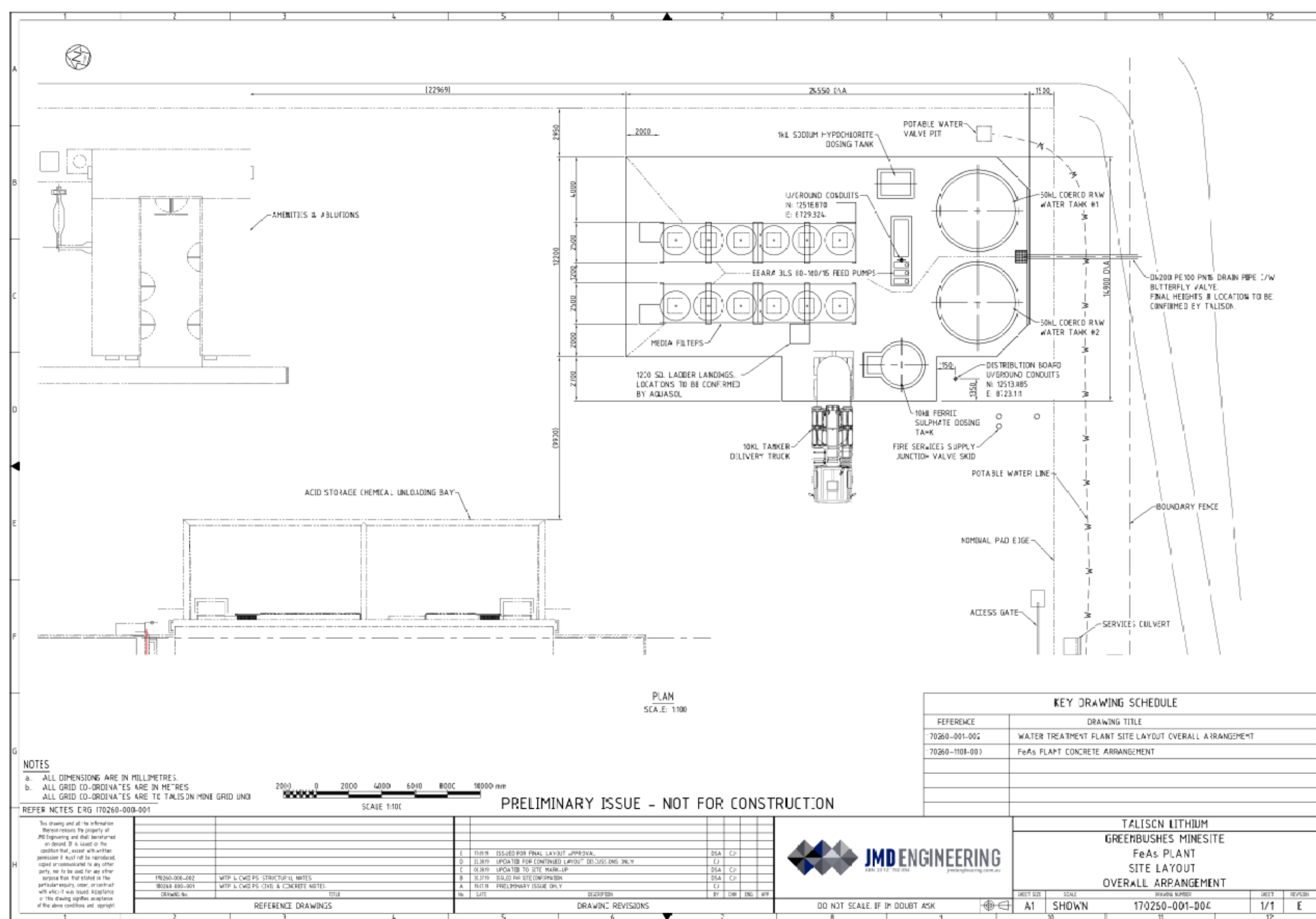


Figure 7: Overview of Arsenic Remediation Unit layout

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)

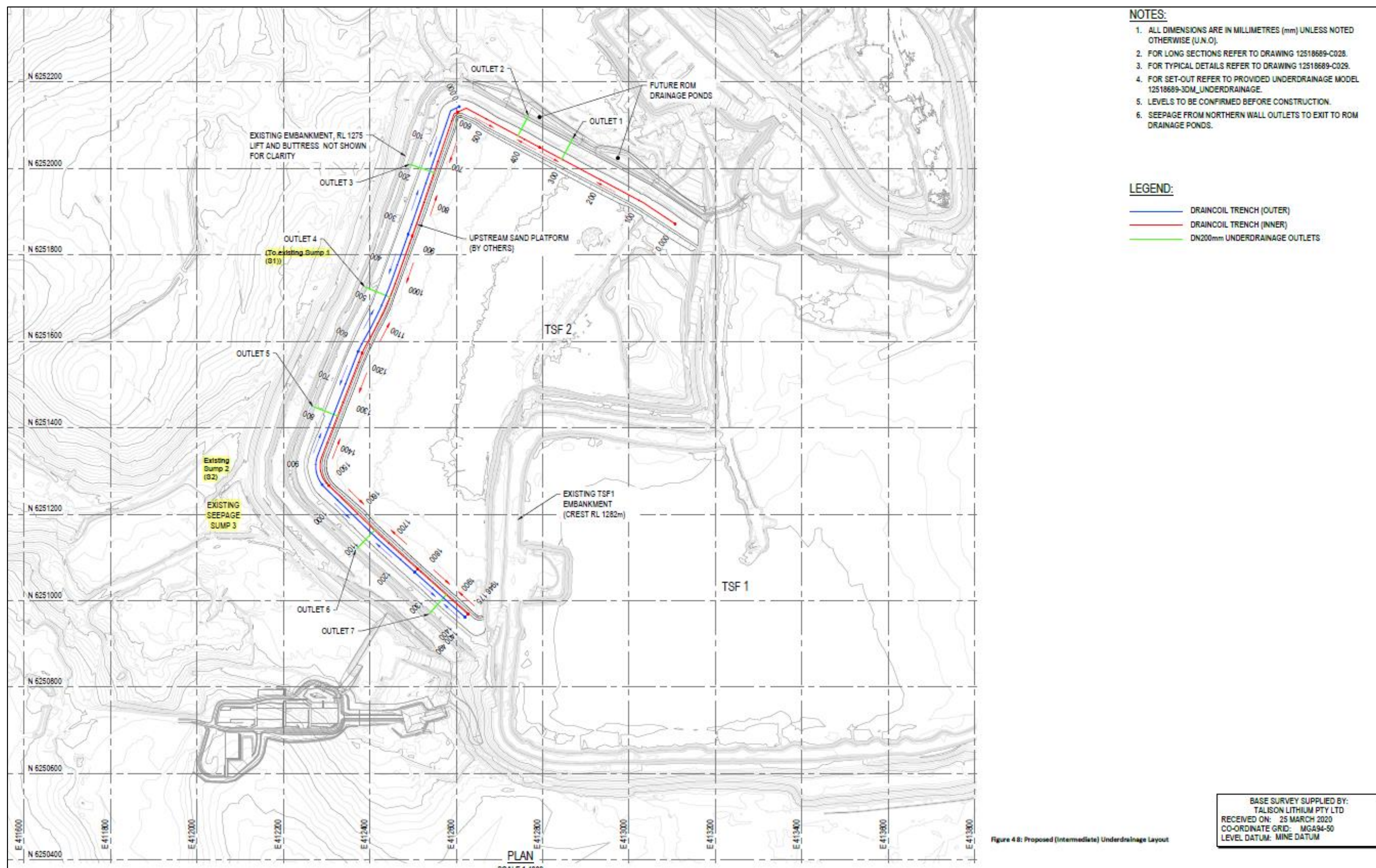


Figure 8: Aitional trenches for TSF2 for embankment raise to RL 1,280 m

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)



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

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)



Figure 10: Tailings Retreatment Plant infrastructure

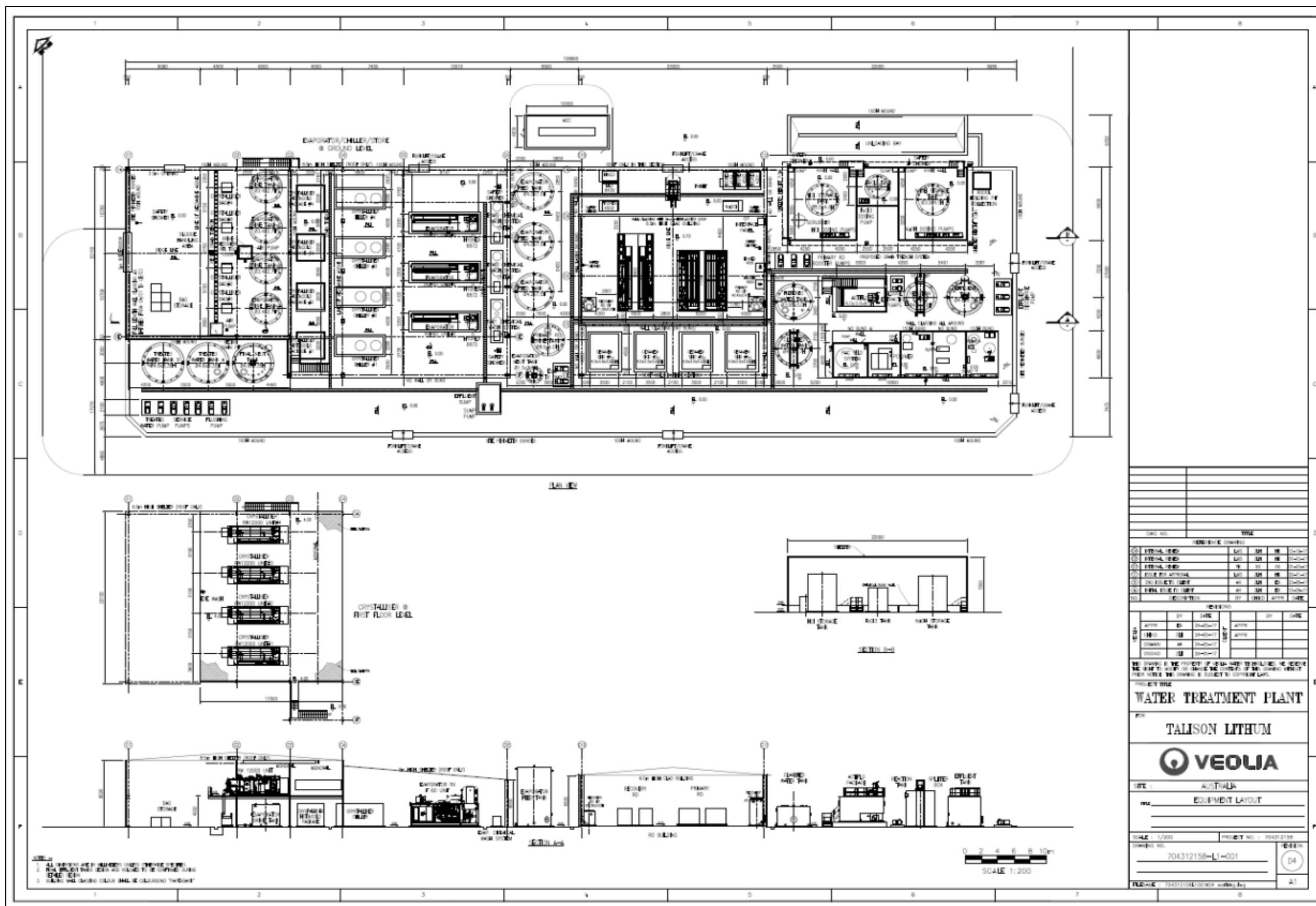


Figure 11: Water Treatment Plant layout

L4247/1991/13 (date of latest amendment: 03/10/2023)

IR-T06 Licence template (v8.0) (September 2022)

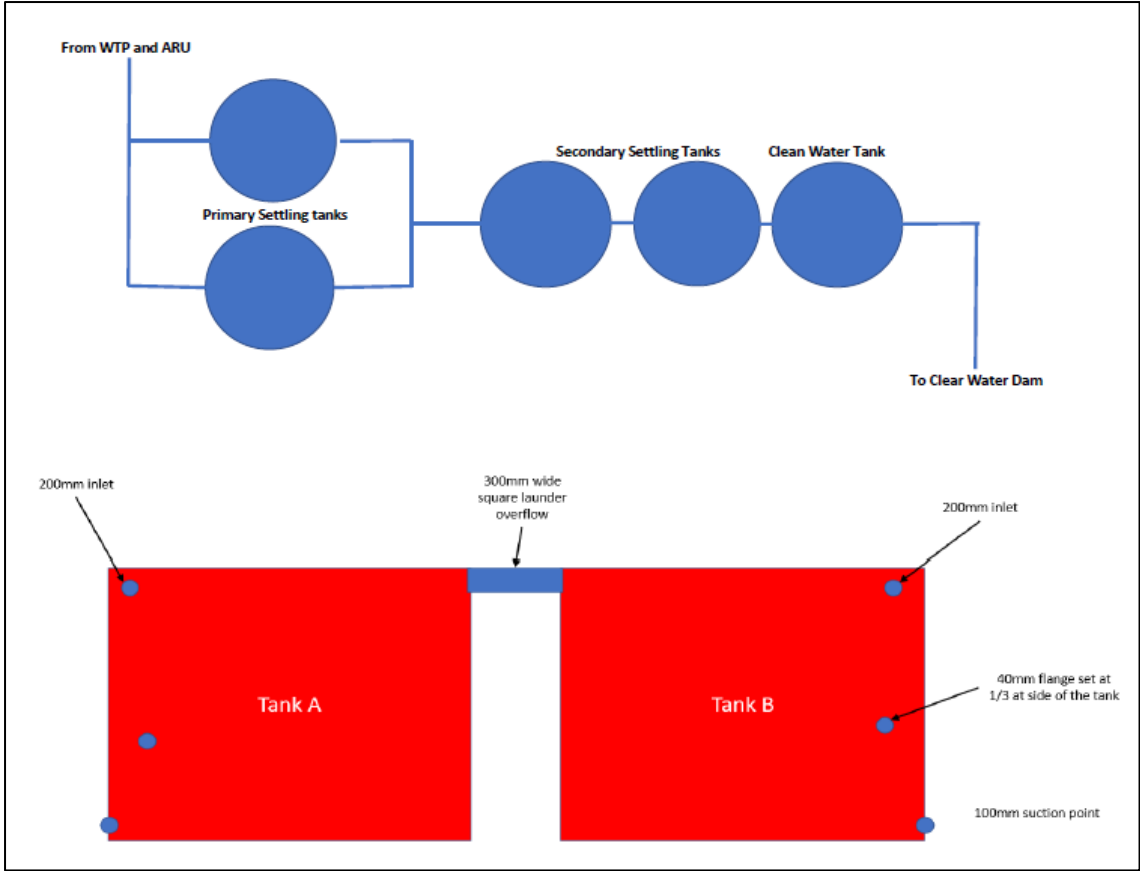


Figure 12: Water Treatment Facility settlement tank process chart

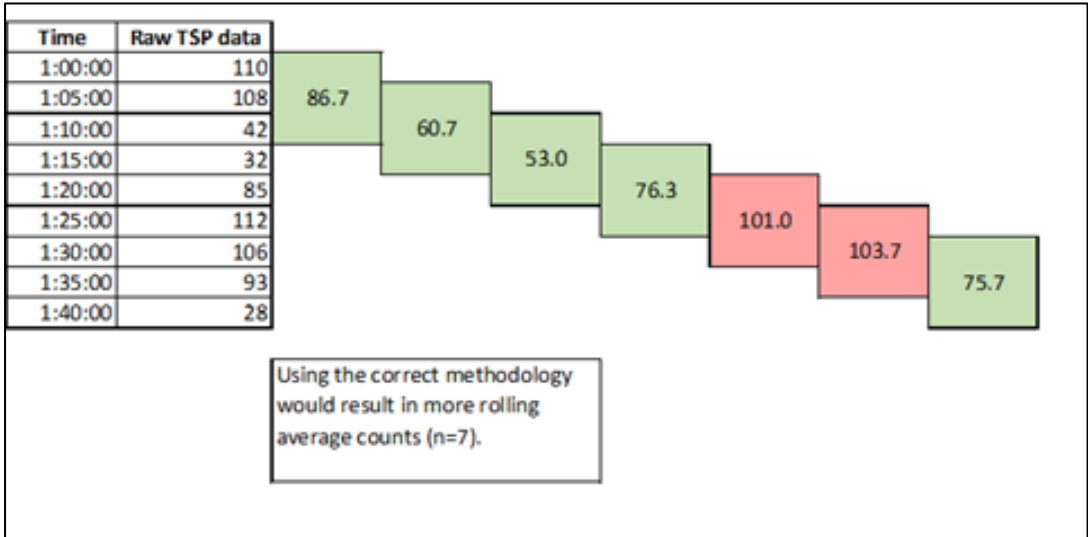


Figure 13: Correct methodology to calculate 15-minute rolling averages for dust monitoring



Figure 14: Authorised installation areas (red circles) for the co-located Australian Standard PM₁₀ monitoring station, Australian Standard PM₁₀ high volume sampler and meteorological monitoring station

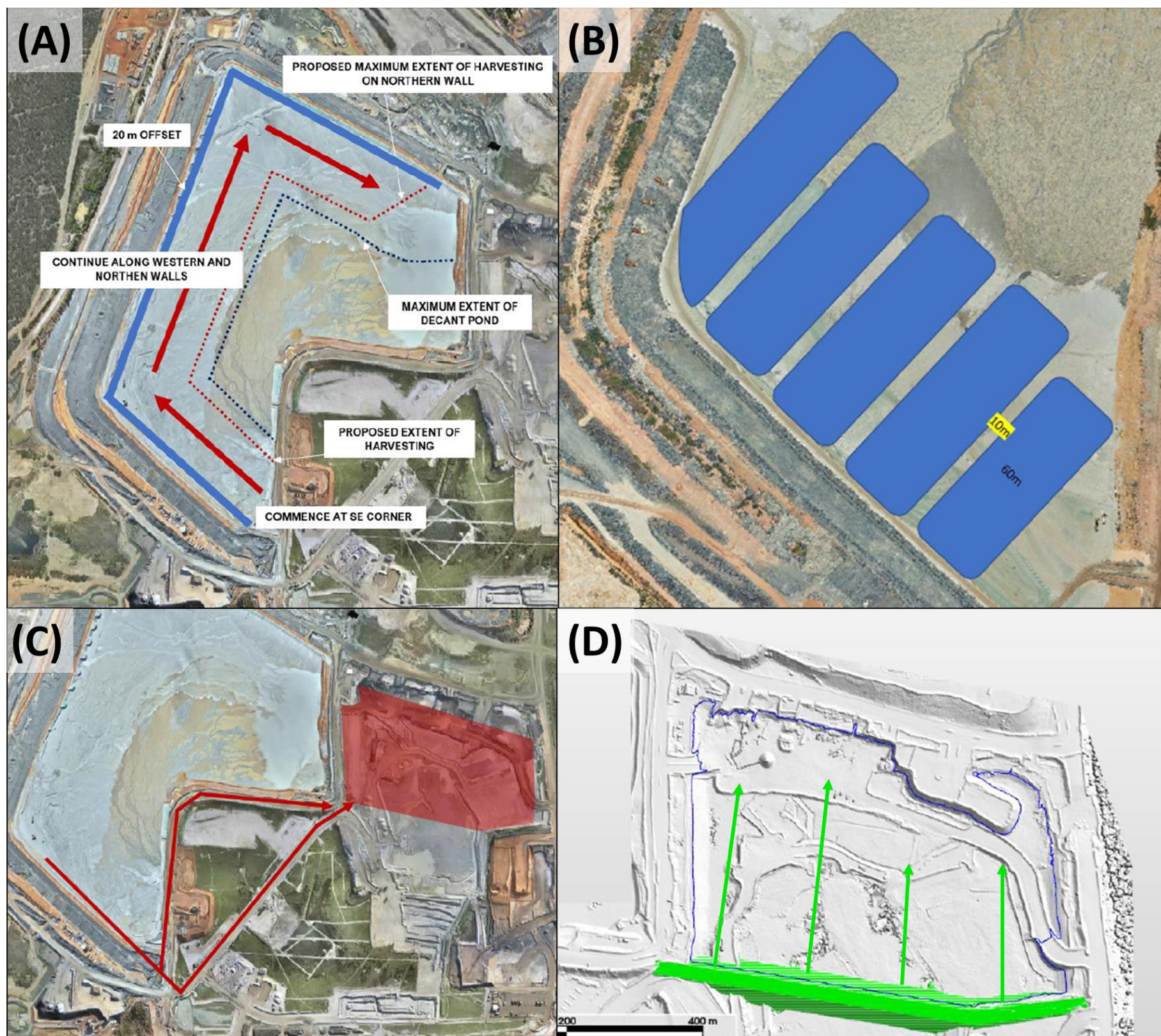


Figure 15: (A) Excavation sequence at TFS2, including separation distance from decant pond, (B) Conceptual layout of excavation strips, (C) Authorised area for tailings deposition at TFS1 (red shade), (D) Layout of causeway at TFS1 (green) and extent to tailings deposition (blue)

Schedule 2: Minimum revised annual ecological assessment requirements

S1: The revised annual ecological assessment program must include, at a minimum:

- (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 26.

Table 26: Minimum annual ecological assessments requirements

Monitoring location	Minimum parameters	Unit	Minimum frequency	Required method and detail		
Locations providing adequate spatial coverage to allow assessment of risk to Blackwood River and other surface water bodies to the east, west and south of premises ⁴ .	<u>Water quality</u>	pH unit	Commencing Spring 2023: Annually in spring (in the months of September, October or November)	<ul style="list-style-type: none">Two replicate samples collected at each site;Total and filtered (not soluble) concentrations measured, analysed at a NATA-accredited laboratory;QA samples must be collected, including field duplicates and blanks;As per methods AS/NZS 5667.1 and AS/NZS 5667.6.		
	<ul style="list-style-type: none">pH¹					
	<ul style="list-style-type: none">Temperature	°C				
	<ul style="list-style-type: none">Electrical conductivity	µS/cm				
	<ul style="list-style-type: none">Turbidity	NTU				
	<ul style="list-style-type: none">ArsenicCadmiumCalciumChromiumCobaltCopperIronLeadLithiumMagnesiumManganeseNickelPhosphatePotassiumSodiumSulfateThoriumTinUraniumZincOrganic carbonDissolved oxygenTotal dissolved solids	mg/L				
	<u>Sediment sample</u>				mg/kg	<ul style="list-style-type: none">Each sample is a composite of the top 2-3cm of three to five cores taken within a 1 m² quadrat (corners and middle of quadrat);
	<ul style="list-style-type: none">Arsenic					
	<ul style="list-style-type: none">Cadmium					
	<ul style="list-style-type: none">Calcium					
<ul style="list-style-type: none">Chromium						

L4247/1991/13 (date of latest amendment: 03/10/2023)

Monitoring location	Minimum parameters	Unit	Minimum frequency	Required method and detail
	<ul style="list-style-type: none"> • Cobalt • Copper • Iron • Lead • Lithium • Magnesium • Manganese • Nickel • Phosphate • Potassium • Sodium • Sulfate • Thorium • Tin • Uranium • Zinc • Organic carbon • Particle size • Moisture 			<ul style="list-style-type: none"> • Five replicate samples collected at each site; • Replicate samples are taken 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; • Total and bioavailable concentrations analysed at a NATA-accredited laboratory; • QA samples must be collected, including field duplicates and blanks; • As per methods AS/NZS 5667.1 and AS/NZS 5667.12².
	<ul style="list-style-type: none"> • Particle size 	%		
	<ul style="list-style-type: none"> • Moisture 	%		
	<u>Macroinvertebrate diversity and abundance</u> Taxa (highest resolution possible) and abundance recorded	-		<ul style="list-style-type: none"> • One sample collected over a 10-metre distance, using AUSRIVAS method (Storer <i>et al.</i> 2022). Sweep method and use of box sub-sampler, where permitted; • Macroinvertebrate data should be provided with taxonomy and trait information (at least functional feeding groups and any sensitivity grades/ information used for analysis).
	<u>Fish and crayfish</u> Species, abundance and size of all individuals (total length [TL] for fish and orbital carapace length [OCL] for crayfish) recorded.	-		<ul style="list-style-type: none"> • Sampled using five baited box traps per site. Follow general practices outlined in Storer <i>et al.</i> (2022), particularly risks to non-target species (e.g., rakali, turtles)³;

Monitoring location	Minimum parameters	Unit	Minimum frequency	Required method and detail
				<ul style="list-style-type: none"> If threatened aquatic fauna (as defined by the <i>Wildlife Conservation Act 1950</i>) are identified during sampling, the licence holder must notify the CEO within seven days.
	<u>Bioaccumulation of contaminants</u> <ul style="list-style-type: none"> Arsenic Cadmium Calcium Chromium Cobalt Copper Iron Lead Lithium Magnesium Manganese Nickel Phosphate Potassium Sodium Sulfate Thorium Tin Uranium Zinc Organic carbon 	mg/kg		<ul style="list-style-type: none"> Five samples per site for both fish and crayfish; Total concentrations measured for whole body of sampled fish/ crayfish (i.e., major organs in addition to flesh); Testing to be conducted by a NATA-accredited laboratory for heavy metals/ elements in fish. <u>Sample preparation</u> <ul style="list-style-type: none"> Fresh samples delivered on ice (double bagged) within two days; Frozen samples (frozen within 48 hours of collection) can be stored below -10 °C for one year maximum for mercury and two years maximum for other metals.

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

Note 2: Can be used in conjunction with guidance from https://people.csiro.au/-/media/People-Finder/S/S/Stuart-Simpson/2005-handbook_sediment_quality_assessment.pdf.

Note 3: This is a subset of the standard trapping effort (5x small traps), as previous reports indicated other techniques could not be employed due to shallow depth and high level of wood etc. If sites further downstream (i.e., near confluence with Blackwood River) allow the use of fyke nets and larger traps, the department expects these methods to be used to provide a greater understanding of biodiversity within the receiving environments.

Note 4: See Table 22 and Figure 19 of Amendment Report (DWER 2022) for example of sampling location coverage.

Schedule 3: Premises boundary coordinates

The premises boundary coordinates are set out in Table 27.

Table 27: Premises boundary coordinates (GDA2020)

Point	Easting	Northing	Zone	Longitude	Latitude
0	413492.6	6254847.3	50	116.0650	-33.8431
1	414590.8	6254425.5	50	116.0768	-33.8470
2	415388.0	6253740.8	50	116.0853	-33.8532
3	415624.6	6253240.8	50	116.0879	-33.8578
4	415646.0	6251045.0	50	116.0879	-33.8776
5	415448.7	6250905.7	50	116.0857	-33.8788
6	415512.3	6250762.2	50	116.0864	-33.8801
7	415276.2	6250379.2	50	116.0838	-33.8836
8	415037.7	6250373.2	50	116.0812	-33.8836
9	415044.1	6249503.5	50	116.0812	-33.8914
10	411496.5	6249473.8	50	116.0429	-33.8914
11	411430.1	6250691.0	50	116.0423	-33.8804
12	412132.3	6250774.0	50	116.0499	-33.8797
13	412111.7	6251140.6	50	116.0497	-33.8764
14	411222.4	6251094.0	50	116.0401	-33.8768
15	410780.8	6251390.6	50	116.0353	-33.8741
16	410471.4	6251933.0	50	116.0320	-33.8691
17	410226.1	6252111.0	50	116.0294	-33.8675
18	410373.2	6252344.5	50	116.0310	-33.8654
19	410564.1	6252232.0	50	116.0330	-33.8665
20	411059.6	6252739.7	50	116.0385	-33.8619
21	411214.3	6253423.3	50	116.0402	-33.8558
22	411234.9	6253570.5	50	116.0404	-33.8544
23	411937.3	6253533.3	50	116.0480	-33.8548
24	412612.3	6253629.0	50	116.0553	-33.8540
25	413054.4	6253911.7	50	116.0601	-33.8515
26	413358.5	6254006.6	50	116.0634	-33.8507
27	413201.0	6254302.7	50	116.0618	-33.8480

Schedule 4: Dust composition sampling – metals analysis

Metals to be monitored in accordance with condition 28 (Table 13):

Metals:

- | | |
|--------------|---------------------|
| • Aluminium | • Manganese |
| • Antimony | • Mercury on filter |
| • Arsenic | • Molybdenum |
| • Barium | • Nickel |
| • Beryllium | • Niobium |
| • Bismuth | • Potassium* |
| • Boron | • Selenium |
| • Cadmium | • Silver |
| • Calcium* | • Sodium* |
| • Caesium | • Strontium |
| • Chromium | • Thallium |
| • Cobalt | • Thorium |
| • Copper | • Tin |
| • Gallium | • Titanium |
| • Iron | • Uranium |
| • Lead | • Vanadium |
| • Lithium | • Zinc |
| • Magnesium* | • Zirconium |

* Parameter to be analysed via AS/NZS 3580.9.6. All other parameters to be analysed via AN042/AN318.

Schedule 5: 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	