



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. Locked Bag 40, Cloister Square, PERTH, WA 6850.
File Number	2012/0071641
Duration	14/12/2013 to 13/12/2026
Amendment Date	27/07/2021
Prescribed Premises	Category 05: Processing or beneficiation of metallic or non-metallic ore (As defined in Schedule 2)
Premises	Talison Lithium Mine, Maranup Ford Road, GREENBUSHES WA 6254. Legal description - Mining Tenements M01/3, M01/6, M01/7, M01/8, M01/9, M1/16, G01/1 and G01/02 (As defined in Schedule 1)

This licence is granted to the licence holder, subject to the following conditions, as amended on 27 July 2021, by:

Lauren Edmands
MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES

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

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Introduction

This Introduction is not part of the licence conditions.

DWER's industry licensing role

The Department of Water and Environmental Regulation (the department) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. The department's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

The department has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process the department regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. The department also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This licence is issued under Part V of the Act. Conditions contained within the licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the premises/licence holder the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

<http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated

stormwater into the environment other than in the circumstances set out in the Regulations.

- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your premises.

Ministerial conditions

If your premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and licence summary

Talison Lithium Australia Pty Ltd (licence holder) operates a lithium mine (a series of open cut and underground operations) and processing plants at Greenbushes, WA (premises). Lithium has been mined since 1983, however historical mining operations at the premises date back to tin mining in 1888 and tantalum mining in the 1940s.

Spodumene ore is mined and processed in one of three processing plants (the Technical Grade Processing Plant (TGP) and the two Chemical Grade Processing Plants (CGP1 and CGP2)) to recover lithium concentrate. Processing involves separation techniques analogous to those used in the mineral sands.

The premises underwent an expansion in 2012/2013, under works approval W4927/2011/1, to construct and operate CGP1 and associated infrastructure. Under licence amendment notice 2 (August 2017), the facility was further expanded to include an additional CGP (CGP2). The total approved premises processing capacity is currently 4,700,000 tonnes per year.

Tailings are generated from processing and currently discharged to Tailings Storage Facility 2 (TSF 2). TSF2 was commissioned in 2006 and the height of the embankments are currently at RL 1270 m. There is an existing Tailings Storage Facility 1 (TSF1) which is on care and maintenance.

Tantalum concentrates and tin metal are also recovered from the ore deposits at Greenbushes, through processing circuits within TGP, CGP1 and CGP2. Prior to 2010, a Primary Tantalum Processing Plant (PTPP) and a Secondary Tantalum Processing Plant (STPP) and related infrastructure were once part of the Talison operations. The PTPP is in

care and maintenance and hence no tailings are being generated. The STPP is now owned and operated by a separate company, Global Advanced Metals Greenbushes Pty Ltd, and is subject to a separate premises licence L8501/2010/2. This licence L4247/1991/13 has excised areas subject to licence L8501/2010/2 (refer to Figure 1: premises Map for further detail).

Tailings are also generated from the tantalum process and are discharged to the Talison Lithium's TSF 1 via a contractual arrangement between the two companies. Currently the Tantalum Primary Processing Plant is on care and maintenance and hence no tailings are being generated.

1 Amendment December 2020

1.1 Licence holder proposed amendment

On 4 November 2020 the licence holder submitted a licence amendment application to update registered business and mailing addresses.

The obligations of the licence holder have not changed in making this amendment and the department has not undertaken any additional risk assessment of the premises.

The CEO has:

- updated registered business and mailing addresses
- corrected clerical mistakes and unintentional errors.

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

Instrument log		
Instrument	Issued	Description
L4247/1991/11	14/12/2007	Licence re-issue
L4247/1991/12	14/12/2010	Licence re-issue
W4927/2011/1	28/07/2011	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.
L4247/1991/13	12/12/2013	Licence re-issue
L4247/1991/13	26/04/2016	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.
L4247/1991/13	15/07/2016	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 4.1.1 added to the licence with 7 improvement requirements to improve monitoring and management of contaminants discharged to ambient surface water.
L4247/1991/13	05/05/2017	Amendment Notice 1 Amendment to convert IR1 – IR7 requirements to conditions where appropriate, following receipt of licence holder

Instrument log		
Instrument	Issued	Description
		submissions. Amendments also made to existing conditions 1.3.7, 2.2.1, 5.2.1 and 5.2.3. Additional change made to condition 5.3.1 following comments made by the Department of Parks and Wildlife on the 23 December 2016 draft amendment notice. The department administrative change made to condition 5.1.2 following publication of new template for AACRs.
L4247/1991/13	30/08/2017	Amendment Notice 2 Amendment to authorise construction of an additional chemical grade lithium processing plant, including ROM pad and crusher.
L4247/1991/13	12/03/2018	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	29/04/2020	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.
L4247/1991/13	22/12/2021	Amendment to update registered business and mailing addresses
L4247/1991/13	27/07/2021	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.

Severance

It is the intent of these licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

Licence Conditions

1 General

1.1 Interpretation

1.1.1 In the licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this licence, unless the contrary intention appears:

‘AACR’ Annual Audit Compliance Report means a report in a format approved by the CEO as presented by the licence holder or as specified by the CEO from time to time and published on the department’s website.

‘Act’ means the *Environmental Protection Act 1986*;

‘AHD’ means the Australian height datum;

‘Annual Period’ means the inclusive period from 1 July until 30 June in the following year;

‘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 2031’ means the Australian Standard AS/NZS 2031 *Selection of containers and preservation of water samples for microbiological analysis*;

‘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*;

‘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;

‘CEMS’ means continuous emissions monitoring system;

‘CEO’ means Chief Executive Officer of the Department of Water and Environmental Regulation;

‘CEO’ for the purpose of correspondence means;

Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 10
JOONDALUP DC WA 6027
Telephone: (08) 6367 7000
Facsimile: (08) 6367 7001
Email: info@dwer.wa.gov.au

‘DWER’ means Department of Water and Environmental Regulation;

‘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;

‘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 Definition 1996” published by the Chief Executive Officer of the Department of Environment as amended from time to time;

‘Licence’ means this licence numbered L4247/1991/13 and issued under the Act;

‘Licence holder’ means the occupier of the premises, being the person to whom this licence has been granted, as identified on the front of this licence;

‘mbgl’ means metres below ground level;

‘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;

‘PM₁₀’ means particles with an aerodynamic diameter of less or equal to 10 µm;

‘Premises’ means the area defined in the premises map in Schedule 1 and listed as the Premises address on page 1 of the licence;

‘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

‘Schedule 1’ means Schedule 1 of this licence unless otherwise stated;

‘Schedule 2’ means Schedule 2 of this licence unless otherwise stated;

‘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; and

‘TSF’ means Tailings Storage Facility

‘µS/cm’ means microsiemens per centimeter

1.1.3 Any reference to an Australian or other standard in the licence means the relevant parts of the standard in force from time to time during the term of this licence

1.1.4 Any reference to a guideline or code of practice in the licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this licence

1.2 General Conditions

1.2.1 The licence holder shall immediately recover or remove and dispose of spills of process liquors including tailings and saline wastewaters which occur outside an engineered containment system.

1.3 Premises operation

1.3.1 The licence holder shall ensure that the materials listed in Table 1.3.1 are only discharged into containment cells and/or dams or ponds with the relevant infrastructure requirements and at the locations specified in Table 1.3.1

Table 1.3.1: Containment infrastructure		
Containment cell or dam number(s)	Material	Infrastructure requirements
TSF1	Emergency tailings deposition of up to a depth of 300mm for a period not exceeding 6 months	<ul style="list-style-type: none">• Embankment height at RL 1282m• Working decant system
TSF2	Tailings	<ul style="list-style-type: none">• Buttress• Two seepage collection trenches equipped with drainage pipes; pipelines (Figure 7)• One upstream drainage trench positioned 25 m and 35 m from the raise centreline along the southern and western walls

Table 1.3.1: Containment infrastructure

Containment cell or dam number(s)	Material	Infrastructure requirements
		<p>at RL 1270 m (blue line, Figure 7)</p> <ul style="list-style-type: none"> One upstream drainage trench positioned 25 m from the raise centreline along the southern, western and northern wall (red line, Figure 7) 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 1280m and associated infrastructure in accordance with following documents: Talison Lithium Australia- Tailings Storage Raise 2021 Licence Amendment Application and Supporting documentation
Clear Water Dam	Tailings decant, seepage, mine dewater, contaminated stormwater, process water (seepage return and decant), site runoff, overflows from Lithium Processing Plant siltation trap	<ul style="list-style-type: none"> Underdrainage system Seepage cut-off trenches Arsenic remediation unit to treat water within the mine circuit
Austins Dam	Process water from Clear Water Dam	None specified
Southampton Dam	Process water from Austins Dam	None specified
Cowan Brook Dam	Contaminated and clean stormwater; overflows from Austins Dam; emergency overflows from southern seepage recovery sump	None specified
Cornwall North Pit	Mine dewater, stormwater, process water	None specified
Cornwall Pit	Mine dewater, stormwater, process water	None specified
Vultans Pit	Mine dewater, stormwater	None specified

- 1.3.2 The licence holder shall operate TSF2 such that the freeboard allows for capacity for 1 in 100 year 72 hour rainfall event, additional 0.5m contingency and 0.1 m for wave run-up. At RL 1270 m the maximum operating pond level during the wet season should not exceed RL 1269.02 m
- 1.3.3 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 1.3.3.

Table 1.3.3 Management Plan		
Management Plan Reference	Parts	Date of Document
Surface Water Management Plan	Section 10.1	23 September 2015, Version 5.

- 1.3.4 Overflows from the TSF2 sump 02 and 03 (denoted as S2 and S3 in Figure 2) via the SRSS 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 (AEP) over a period of at least 3 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 or S3 to return seepage to the water circuit. The downstream Secondary Recovery Seepage Sump (SRSS) pump is not allowed to be bypassed.
- 1.3.5 The licence holder shall 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 1.3.5.

Table 1.3.5: Management of waste		
Waste type	Management strategy	Requirements
Inert Waste Type 1	Receipt, handling and disposal of waste by landfilling	<u>All waste types</u> <ul style="list-style-type: none"> No more than 200 tonnes per year of all waste types cumulatively shall be disposed of by landfilling. Disposal of waste by landfilling shall only take place within the waste rock dump area; Waste shall be placed in a defined trench or within an area defined by earthen bunds; and The active tipping area shall be restricted to a maximum linear length of 30 metres. 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.
Inert Waste Type 2		
Clean Fill		

Table 1.3.5: Management of waste		
Waste type	Management strategy	Requirements
Used Tyres ¹	Burial	<ul style="list-style-type: none"> Used tyres shall only be buried in the waste rock dump. Tyres shall be buried in batches separated from each other by at least 100mm of soil/waste rock and each consisting of not more than 1000 whole tyres.

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

- 1.3.6 The licence holder shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.3.6 and that sufficient stockpiles of cover are maintained on site at all times.

Table 1.3.6: Cover requirements ¹			
Waste Type	Material	Depth	Timescales
All waste	Inert and incombustible material	500mm	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*.

- 1.3.7 The licence holder shall implement security measures at the landfill area to prevent as far as is practical, unauthorised access to the site
- 1.3.8 The licence holder must install and undertake the Works for the infrastructure and equipment:
- (a) specified in Column 1; and
- (b) to the requirements specified in Column 2 of Table 1.3.7 below

Table 1.3.7: Infrastructure and equipment requirements	
Column 1	Column 2
Infrastructure/Equipment	Requirements (design and construction)
Conveyor to Fine Ore Stockpile TLA#2 Crusher and TLA#1 Crusher	Fitted with telescopic chute at the discharge
Fine Ore Stockpile TLA#2 Crusher and TLA#1 Crusher	Sprinklers installed
CG Processing Plant Reagents Area	Bunding to contain 110% of the largest vessel (tank) in the compound
Milling circuit	Bunding to contain 110% of the largest vessel (tank) in the compound; collection sump within bund
Heavy media separation circuit	

Table 1.3.7: Infrastructure and equipment requirements	
Column 1	Column 2
Infrastructure/Equipment	Requirements (design and construction)
Classification circuit	
Coarse and fine flotation circuits	
Wet high intensity magnet (WHIMs) and tantalum recovery circuit	
Process Water Tank, Raw Water Tank, Thickener	<ul style="list-style-type: none"> Bunding to contain 110% of the largest vessel (tank) in the compound; collection sump within bund All installed with level alarms. Level alarms linked to process control instrumentation to allow recording of overflows.
Product stockpiles	Located on bunded hardstand
New Tailings Line	Located within bunding with capacity to contain volume of the pipeline
Concentrate Storage Area Wedge Pit	<ul style="list-style-type: none"> Capacity of 170m³ Fitted with sump pump to return flow to Thickener
Plant Wide Wedge Pit	<ul style="list-style-type: none"> Capacity of 670m³ Fitted with overflow alarm linked to process control instrumentation to record duration of overflows. Fitted with sump pump to return flow to Thickener
CG Processing Plant area	Subsurface drainage system
RO Water Treatment Plant	Capacity of 1 000 000 m ³ /year
Clear Water Dam (CWD)	<ul style="list-style-type: none"> Seepage cut-off trench installed under west embankment Underdrainage system installed to collect seepage and recycle back to CWD Arsenic remediation unit installed

- 1.3.9 During construction of the works listed in Table 1.3.7, the licence holder must maintain the capacity of construction site drains so as to ensure that stormwater flows to either the Concentrate Storage Area Wedge Pit, Plant Wide Wedge Pit or interim catchment pits, with the exception of stormwater during extreme rainfall events
- 1.3.10 Following commissioning of the Works listed in Table 1.3.7, the licence holder must complete daily inspections of the following infrastructure:
- (a) integrity of the new tailings pipeline from the CG Plant 2 to TSF2;
 - (b) capacity of the wedge pits and south west detention pond as shown in Figure 5 of Schedule 1

The licence holder shall maintain a record of all inspections, with each record signed by the person responsible. Where deficiencies are identified they shall be remedied as soon as possible, but no later than one week after the inspection.

- 1.3.11 Following commissioning of the additional crushing circuit, the licence holder shall complete a noise assessment of the operation of the new circuit and existing crushers and assess compliance with the Regulation 17 exemption: Environmental Protection (Talison Lithium Australia Greenbushes Operations Noise Emissions) Approval 2015. The licence holder shall submit a report to the CEO within 60 days of completion, describing the methodology employed in the assessment, the noise assessment results, compliance with the Regulation 17 exemption and any recommendations for operation.
- 1.3.12 The licence holder must construct and/or install the infrastructure and equipment listed in Table 1.3.8, in accordance with:
- (a) the corresponding design and construction requirement;
 - (b) at the corresponding infrastructure location; and
 - (c) within the corresponding timeframe,
 - (d) as set out in Table 1.3.8.

Table 1.3.8: New Infrastructure and equipment requirements			
Infrastructure/Equipment	Requirements (design and construction)	Infrastructure location	Completion timeframe ¹
Arsenic Remediation Unit (ARU)	<p>As specified in Figure 6 in Schedule 1</p> <p>400 m³/hr Arsenic Removal Filtration Plant (Aquasol) or equivalent specifications</p> <p>Positioned on a concrete bunded compound</p> <p>Designed to receive water from C3 pit, Clear water Dam (CWD) and other sources if required</p> <p>Designed to have output directed and contained within the containment infrastructure listed in Table 1.3.1</p>	As shown in Figure 2 in Schedule 1	Before 20/06/2020

Note 1: The existing ARU unit located at the TSF2 decant (former Clear Water Pond) shall remain operational until the ARU set out in Table 1.3.8 has been commissioned and successfully operated.

- 1.3.13 The licence holder must within 60 calendar days of each item of infrastructure or equipment required by condition 1.3.12 being constructed and/or installed:
- (a) undertake an audit of their compliance with the requirements of condition 1.3.12; and
 - (b) prepare and submit to the CEO an audit report on that compliance.

2 Emissions

2.1 General

- 2.1.1 The licence holder shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this licence.

2.2 Point source emissions to surface water

- 2.2.1 The licence holder shall ensure that where waste is emitted to surface water from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this licence.

Table 2.2.1: Emission points to surface water	
Emission point reference on Map of emission points	Source
Carters Farm	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 Seepage from TSF1

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

3 Monitoring

3.1 General monitoring

- 3.1.1 The licence holder shall 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 or 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; and
 - (g) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

- 3.1.2 The licence holder shall ensure that:
- (a) quarterly monitoring is undertaken at least 45 days apart;
 - (b) six monthly monitoring is undertaken at least 5 months apart; and
 - (c) annual monitoring is undertaken at least 9 months apart.
- 3.1.3 The licence holder shall record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.
- 3.1.4 The licence holder shall ensure that all monitoring equipment used on the premises to comply with the conditions of this licence is calibrated in accordance with the manufacturer's specifications and the requirements of the licence.
- 3.1.5 The licence holder shall, 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.

3.2 Monitoring of point source emissions to surface water

- 3.2.1 The licence holder shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to surface water						
Monitoring point Reference (as per Figure 2)	Process description	Parameter ¹	Units	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	-	Each event ²	Spot sample	As per L3.1.1
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Cowan Brook Dam ³	Seepage flow from Cowan Brook Dam	Flowrate		m ³ /hr	Monthly	-
		pH	----	Monthly	Spot sample	As per L3.1.1
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Floyds North	Surface water discharge off premises	Flow		m ³	Each event	-
		pH	-	One event per quarter ²	Spot sample	As per L3.1.1
		EC	µS/cm			

Table 3.2.1: Monitoring of point source emissions to surface water						
Monitoring point Reference (as per Figure 2)	Process description	Parameter ¹	Units	Frequency	Averaging Period	Method
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Floyds South	Surface water discharge off premises	Flow	m ³	Each event	-	None specified
		pH	-	One event per quarter ²	Spot sample	As per L3.1.1
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Carters Farm	Surface water	pH	-	One	Spot	As per
	discharge off premises	EC	µS/cm	event per quarter ²	sample	L3.1.1
		Lithium	mg/L			
		Arsenic				
		Cadmium				
		Chromium				
		Copper				
		Manganese				
		Nickel				
		Uranium				
Cemetery	Surface water discharge off premises	pH	-	One event per quarter ²	Spot sample	As per L3.1.1
		EC	µS/cm			
		Lithium	mg/L			
		Arsenic				
		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 hours 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)

3.3 Process monitoring

3.3.1 The licence holder shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Process monitoring					
Monitoring point reference (as per Figure 2 in Schedule 1)	Process description	Parameter	Units	Frequency	Method
Austins Dam	Overflow from Austins Dam to Cowan Brook Dam	Flow	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
Arsenic remediation unit outlet stream ¹	Process water	Volume	m ³	Monthly	None specified
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 Austins Dam	Frequency and duration	Hrs	Number of events	Visual observation
Lithium CG Processing Plant 2 – Plant Wide Wedge Pit ²	Overflow from new wedge pit (siltation sump) to Austins Dam	Frequency and duration	Hrs	Number of events	Recorded events
Secondary seepage recovery sump	Overflow to Cowan Brook Dam	Flow	m ³	Total m ³ per event	None specified

Note 1: Monitoring of ARUs (at previous Clear Water Pond) to be included until the updated unit is operational

Note 2: Monitoring required to commence following commissioning of the Lithium CG Processing Plant 2.

3.4 Ambient environmental quality monitoring

- 3.4.1 The licence holder shall undertake the monitoring in Tables 3.4.1, 3.4.2 and 3.4.3 according to the specifications in those tables and record and investigate results that do not meet any limit or target specified.

Table 3.4.1: Monitoring of ambient air quality

Monitoring point reference and location	Parameter	Limit	Units ¹	Averaging period	Frequency	Method
Dust monitoring site	Particulates as PM ₁₀	90	µg/m ³	24 hours	Continuous from 1 November – 31 May	AS/NZS 3580.9.6

Note 1: All units are referenced to STP dry

Table 3.4.2: Monitoring of ambient surface water quality

Monitoring point reference and location	Parameter	Limit	Units	Averaging period	Frequency	Applicable Timeframe
Southampton Dam Austins Dam Cowan Brook Dam	pH	6 – 9	-	Spot sample	Quarterly	All
	Redox Potential (Eh)	-	mV			
	TDS	-	mg/L			
	Dissolved Oxygen	-				
	Chloride	-	mg/L			
	Nitrate					
	Magnesium					
	Sodium					
	Sulfate					
	Arsenic					
	Cadmium					
	Chromium					
	Cobalt					
	Copper					
	Iron					
	Lithium					
	Manganese					
	Nickel					
	Uranium					
	Thorium					
	Radium 226 Radium 228	-	Bq/L	Spot sample	Six monthly	All

Table 3.4.2: Monitoring of ambient surface water quality continued

Monitoring point reference and location	Parameter	Limit	Units	Averaging period	Frequency	Applicable Timeframe
Norilup (Dam)	pH	6 – 9	-	Spot sample	Quarterly	All
	Redox Potential (Eh)	-	mV			
	TDS	-	mg/L			
	Dissolved Oxygen	-				
	Lithium	5	mg/L	Spot sample	Quarterly	2017/2018 - 2019/2020 reporting periods
		3				2020/2021 2021/2022 reporting periods
		2				2022/2023 - 2025/2026 reporting period
	Arsenic	0.01	mg/L	Spot sample	Quarterly	All
	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	-				

Table 3.4.2: Monitoring of ambient surface water quality continued

Monitoring point reference and location	Parameter	Limit	Units	Averaging period	Frequency	Applicable Timeframe
Norilup (Dam)	Thorium	-	Mg/L	Spot sample	Quarterly	All
	Radium 226 Radium 228	-	Bq/L	Spot sample	Six monthly	All

Note 1: pH, redox potential and dissolved oxygen in-field non-NATA accredited analysis permitted.

Table 3.4.3: Monitoring of ambient groundwater quality

Monitoring points	Parameters	Units	Averaging period	Frequency
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Table 3.4.3: Monitoring of ambient groundwater quality continued

Monitoring points	Parameters	Units	Averaging period	Frequency
<u>Intermediate bores</u> MB17/01I MB17/02I MB17/03I MB17/04I MB17/06I	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Chloride	mg/L	Spot Sample	Quarterly
	Nitrate			
	Magnesium			
	Sodium			
	Sulfate			
	Arsenic			
	Cobalt			
	Copper			
	Iron			
	Lithium			
	Manganese			
	Nickel			
	Uranium Thorium			
	Radium 226	Bq/L		Six monthly
	Radium 228			

Table 3.4.3: Monitoring of ambient groundwater quality continued

Monitoring points	Parameters	Units	Averaging period	Frequency
<u>Deep bores¹</u> MB97-05D MB17/02D MB97/4 MB17/04D MB17/05D MB17/06D MB17/07D MB3 MB01/09 MB01/01	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Chloride	mg/L		
	Nitrate			
	Magnesium			
	Sodium			
	Sulfate			
	Arsenic			
	Cobalt			
	Copper			
	Iron			
	Lithium			
	Manganese			
Nickel				
Uranium				
Thorium				
Radium 226 Radium 228	Bq/L		Six monthly	
MB97/1 MB97/2 MB01/11	Standing water level	m(AHD) & mbgl	Spot sample	Quarterly
	pH	-		
	Total dissolved salts	mg/L		
	Sulfate			
	Sodium			
	Arsenic			
Lithium				

Note 1: Analysis of samples from bores MB97/1, MB97/2 and MB01/11 is exempt from the requirement listed in condition 3.1.1 (g)

- 3.4.2 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.
- 3.4.3 Each spring the licence holder shall complete an annual ecological assessment of 4 sites upstream (two of which are in Cowan Brook) and 6 sites downstream of the Norilup Dam. The annual assessment shall evaluate:
- Water quality at each sample site. 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. Analysed at a NATA registered laboratory;
 - 5 replicate sediment samples at each site. Analysis for total and soluble metals/ metalloid concentrations in sediments at a NATA registered laboratory
 - Macroinvertebrate diversity and abundance sampled over a 10 metre distance, using a sweep method where permitted;
 - Aquatic fauna diversity and abundance, sampled using 5 baited box traps per site; and
 - 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 shall notify the CEO within 7 days.
- 3.4.4 The licence holder shall undertake the monitoring in Table 3.4.4 according to the specifications in that table.

Table 3.4.4: Ambient surface water flows					
Monitoring point reference	Process description	Parameter	Units	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.

4 Information

4.1 Records

- 4.1.1 All information and records required by the licence shall:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the licence or any subsequent licence; and
 - (d) for those following records, be retained until the expiry of the licence and any subsequent licence:
 - (i) off-site environmental effects; or
 - (ii) matters which affect the condition of the land or waters
- 4.1.2 The licence holder must submit to the CEO an Annual Audit Compliance Report by 30 September in each year indicating the extent to which the licence holder has complied with the conditions in this licence for the Annual Period.
- 4.1.3 The licence holder shall implement a complaints management system that, as a minimum, records the number and details of complaints received concerning the environmental impact of the activities undertaken at the premises and any action taken in response to the complaint.

4.2 Reporting

- 4.2.1 The licence holder shall submit to the CEO an Annual Environmental Report by 30 September of each year. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	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 premises categories	
3.2.1 3.3.1	Summary of surface water flow trends for the reporting period	
3.4.3	Annual assessment that evaluates the information listed in condition 3.4.3	
Table 3.4.1 Table 3.4.2 Table 3.4.3	Monitoring of ambient air quality. Summary of surface water quality and groundwater quality trends for the reporting period	
4.1.2	Compliance	Annual Audit Compliance Report (AACR)
4.1.3	Complaints summary	None specified

- 4.2.2 The licence holder shall ensure that the Annual Environmental Report also contains:
- (a) any relevant process, production or operational data recorded under Condition 3.1.3; and
 - (b) an assessment of the information contained within the report against previous monitoring results and licence limits.
- 4.2.3 The licence holder shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements				
Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after 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
3.2.1 and 3.3.1	Surface water discharges and process monitoring	Quarterly	Within 30 days	None specified
Table 3.4.2	Ambient surface water quality	Quarterly	Within 30 days	None specified
Table 3.4.3	Ambient groundwater quality	Quarterly	Within 30 days	None specified
3.4.4	Norilup Dam downstream flows	Quarterly	Within 30 days	None specified

- 4.2.4 The licence holder shall submit a compliance document to the CEO, following construction of the TSF2 embankment works to RL 1265 m and prior to commissioning of the same. Further compliance documents shall be submitted to the CEO following each 5m lift and prior to commissioning, to a total height of RL 1280 m
- 4.2.5 The compliance document shall:
- (a) certify that the works were constructed in accordance with the conditions of the licence;
 - (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.
- 4.2.6 Within 60 days of the completion of the Works, the licence holder must provide to the CEO a compliance document from a qualified engineer confirming each item of infrastructure or component of infrastructure specified in Column 1 of Table 1.3.7 has been constructed to the requirements specified in Column 2.

- 4.2.7 The licence holder shall submit to the CEO a commissioning report for the RO water treatment plant, within 3 months of completion of commissioning. The report shall include:
- (a) a summary of the monitoring results as recorded by the commissioning plan;
 - (b) a list of any original monitoring reports submitted to the licence holder from third parties for the commissioning period;
 - (c) a summary of the performance of the water treatment plant in removing lithium, as compared to the design specification range set out in the licence amendment application; and
 - (d) where the specification has not been met, measure(s) to meet the design specification together with timescales for implementing the proposed measure(s).

4.3 Notification

- 4.3.1 The licence holder shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements			
Condition or table	Parameter	Notification requirement¹	Format or form²
1.3.3	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
1.3.7	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
2.1.1	Breach of any limit specified in the licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1
3.1.5	Calibration report	As soon as practicable.	None specified
3.4.3	Identification of any threatened fauna species as listed under the Wildlife Conservation Act 1950.	Within 7 days of identification.	None specified

Note 1: Notification requirements in the licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 3

Schedule 1: Maps and premises



Figure 1 The premises are shown in the map. The red line depicts the premises boundary, with the area in yellow excised from the premises boundary



Figure 2 The locations of the surface water storages, emission and monitoring points defined in Tables 2.2.1, 3.2.1, 3.3.1 and 3.4.2 are shown above

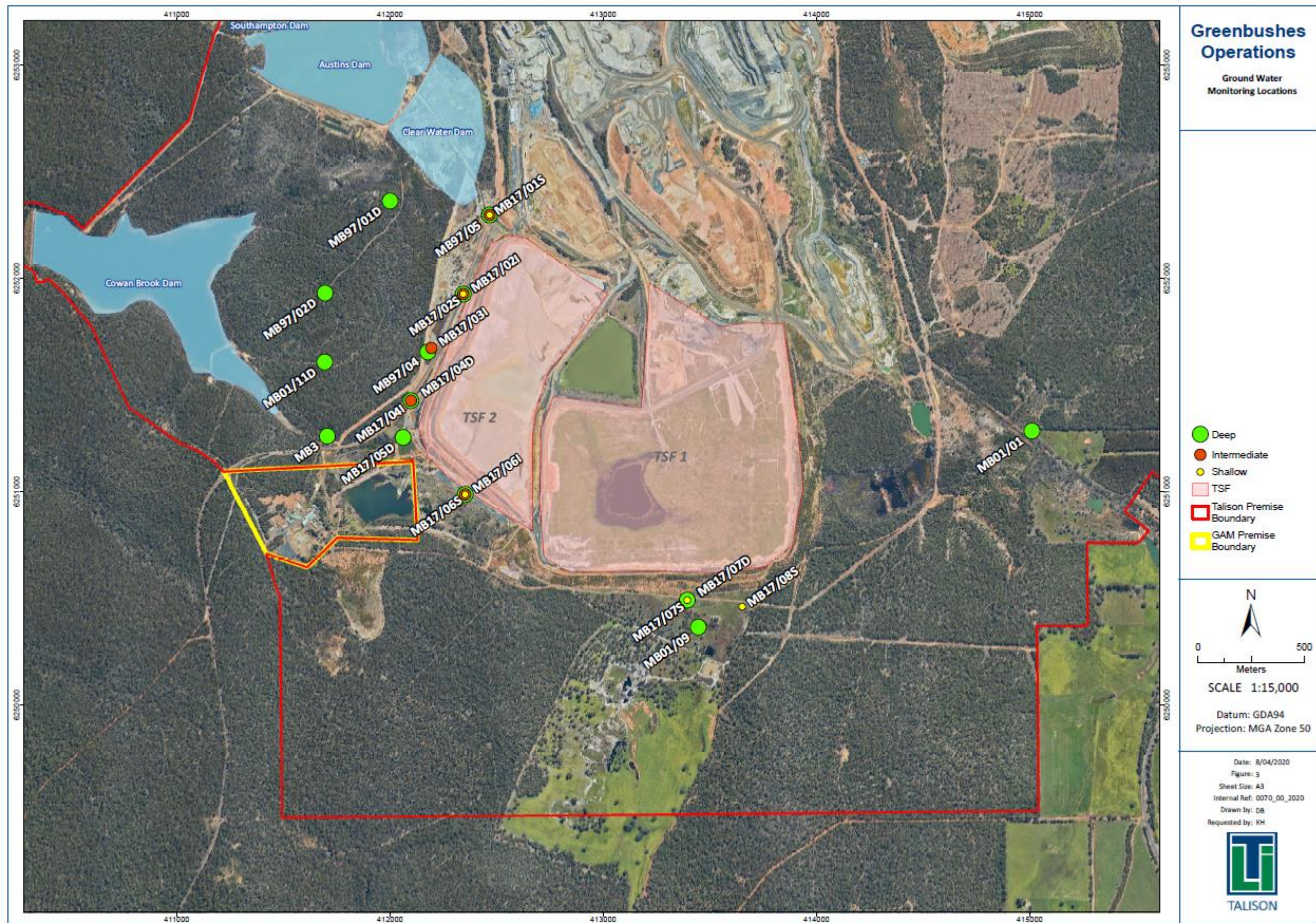


Figure 3 Groundwater monitoring



Figure 4 Map of ambient air and noise quality monitoring points.

Ambient air quality monitoring location. The location of the monitoring point defined in Table 3.4.1 is shown below. Also shown are the locations of the noise and blast monitors required by the approval under Regulation 17 of the *Environmental Protection (Noise) Regulations 1997*.

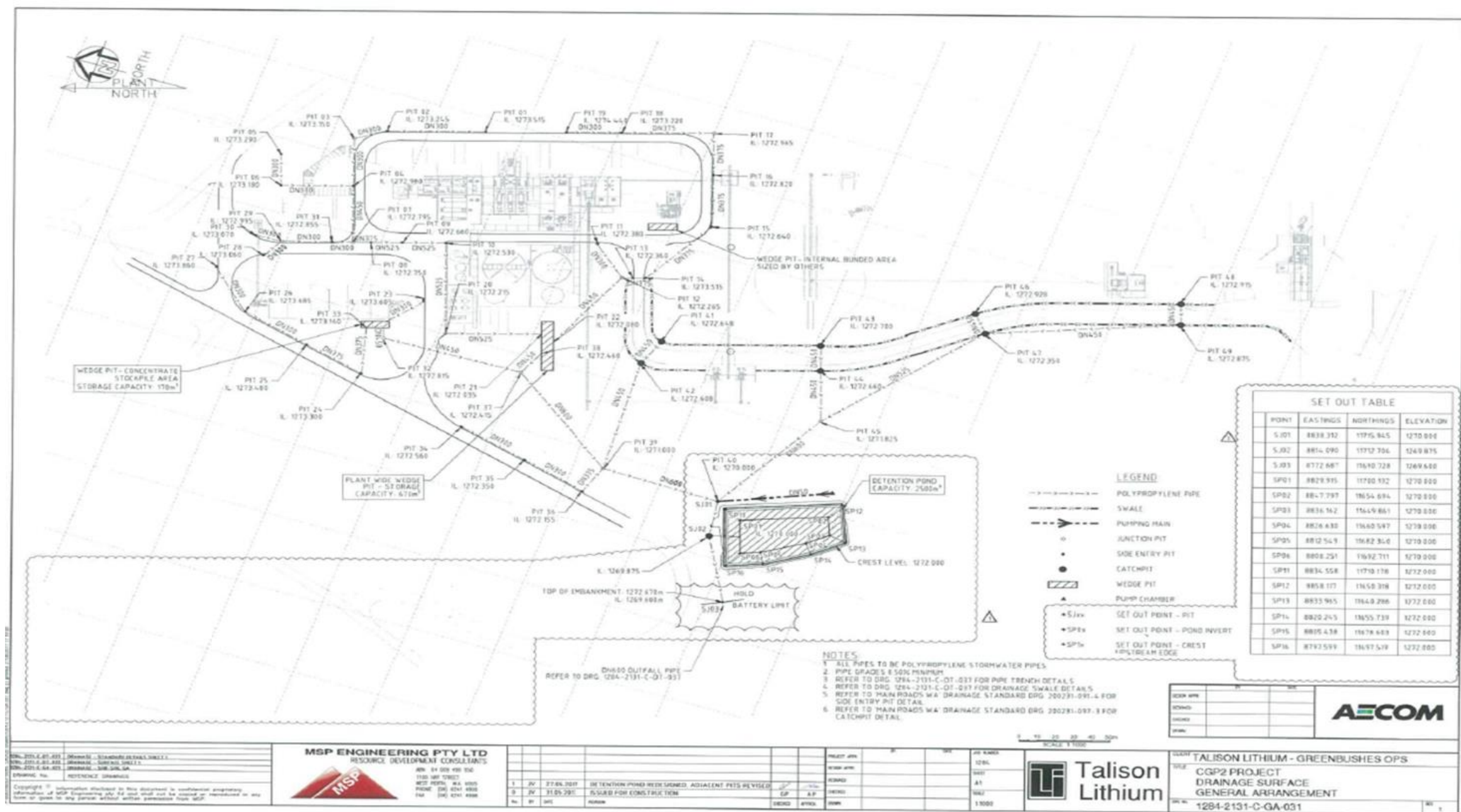
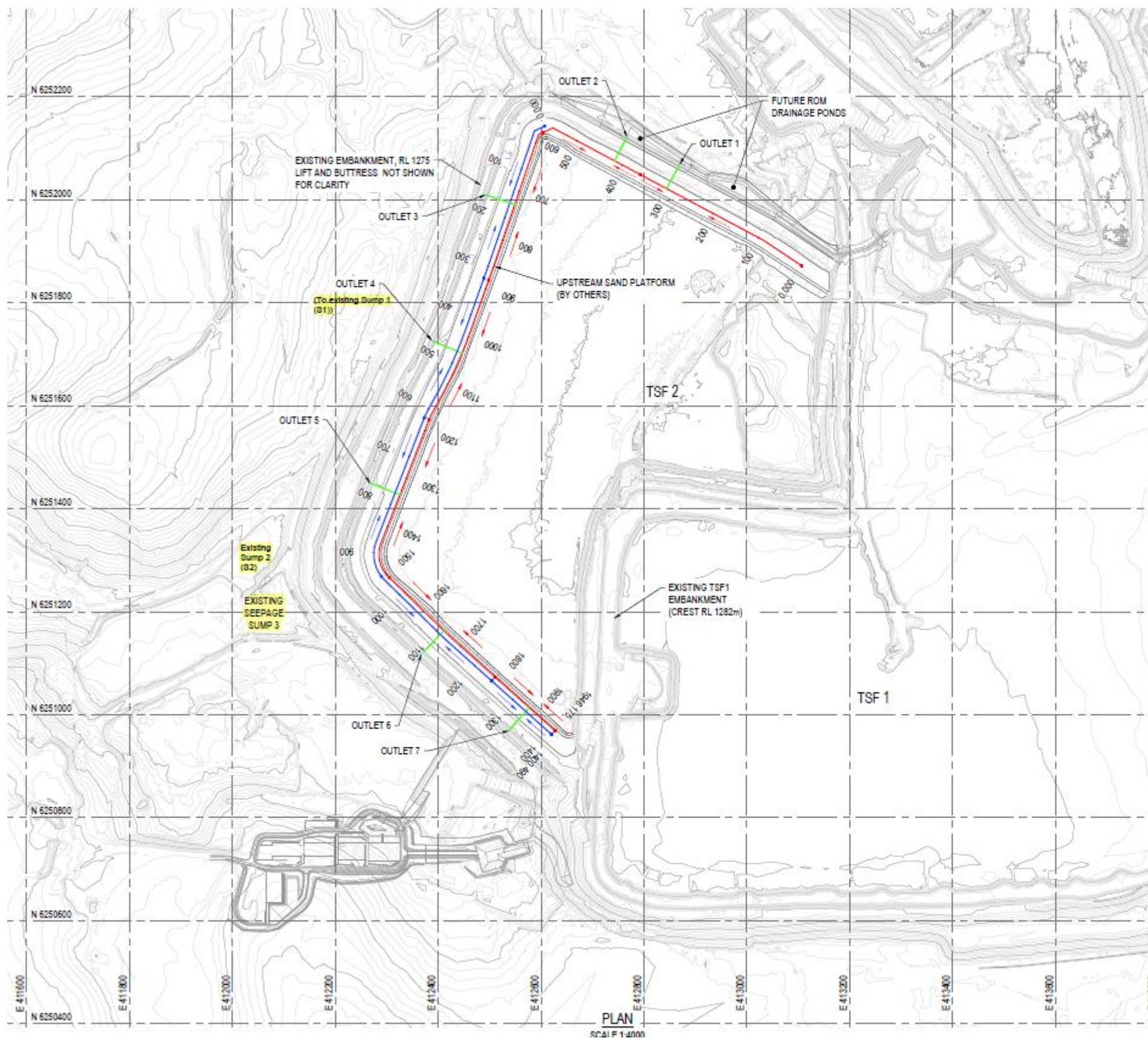


Figure 5 Surface stormwater drainage plan - Chemical Grade Processing Plant

Stormwater Drainage Plan – Chemical Grade Lithium Processing Plant 2.



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE (U.N.O).
2. FOR LONG SECTIONS REFER TO DRAWING 12518689-C028.
3. FOR TYPICAL DETAILS REFER TO DRAWING 12518689-C029.
4. FOR SET-OUT REFER TO PROVIDED UNDERDRAINAGE MODEL 12518689-3DM_UNDERDRAINAGE.
5. LEVELS TO BE CONFIRMED BEFORE CONSTRUCTION.
6. SEEPAGE FROM NORTHERN WALL OUTLETS TO EXIT TO ROM DRAINAGE PONDS.

LEGEND:

- DRAINCOIL TRENCH (OUTER)
- DRAINCOIL TRENCH (INNER)
- DN200mm UNDERDRAINAGE OUTLETS

BASE SURVEY SUPPLIED BY:
TALISON LITHIUM PTY LTD
RECEIVED ON: 25 MARCH 2020
CO-ORDINATE GRID: MGA94-50
LEVEL DATUM: MINE DATUM

Figure 48: Proposed (Intermediate) Underdrainage Layout

Figure 7 Additional trenches for TSF2 for embankment raise to 1280 mRL

Schedule 2: Prescribed premises category and boundary

The premises prescribed categories under schedule 1 of *Environmental Protection Regulation 1987*

Prescribed premises categories

Category number	Category Description	Category production or design capacity	Approved premises production or design capacity
5	Processing of ore	50 000 tonnes or more per year	4,700,000 tonnes beneficiated per annual period 5,000,000 tonnes of tailings deposited per annum

Premises boundary coordinates

Premises boundary as set out in Table 5 and Figure 7 below.

Table 5: Premises boundary coordinates (GDA94)

Point (Figure 7)	Lat °S	Lon °E
1	33.84324	116.06503
2	33.83950	116.07679
3	33.85325	116.08534
4	33.85777	116.08785
5	33.87758	116.08787
6	33.87882	116.08573
7	33.88012	116.08640
8	33.88355	116.08381
9	33.88359	116.08123
10	33.89143	116.08122
11	33.89141	116.04285
12	33.88042	116.04225
13	33.87974	116.04986
14	33.87643	116.04967
15	33.87675	116.04006

Point (Figure 7)	Lat °S	Lon °E
16	33.87410	116.03516
17	33.86876	33.86876
18	33.85219	116.01255
19	33.86591	116.03113
20	33.89888	116.07408
21	33.86192	116.03846
22	33.85577	116.04020
23	33.85443	33.85443
24	33.85484	116.04802
25	33.85403	116.05533
26	33.85152	116.06014
27	33.85068	116.06343
28	33.84812	116.06176

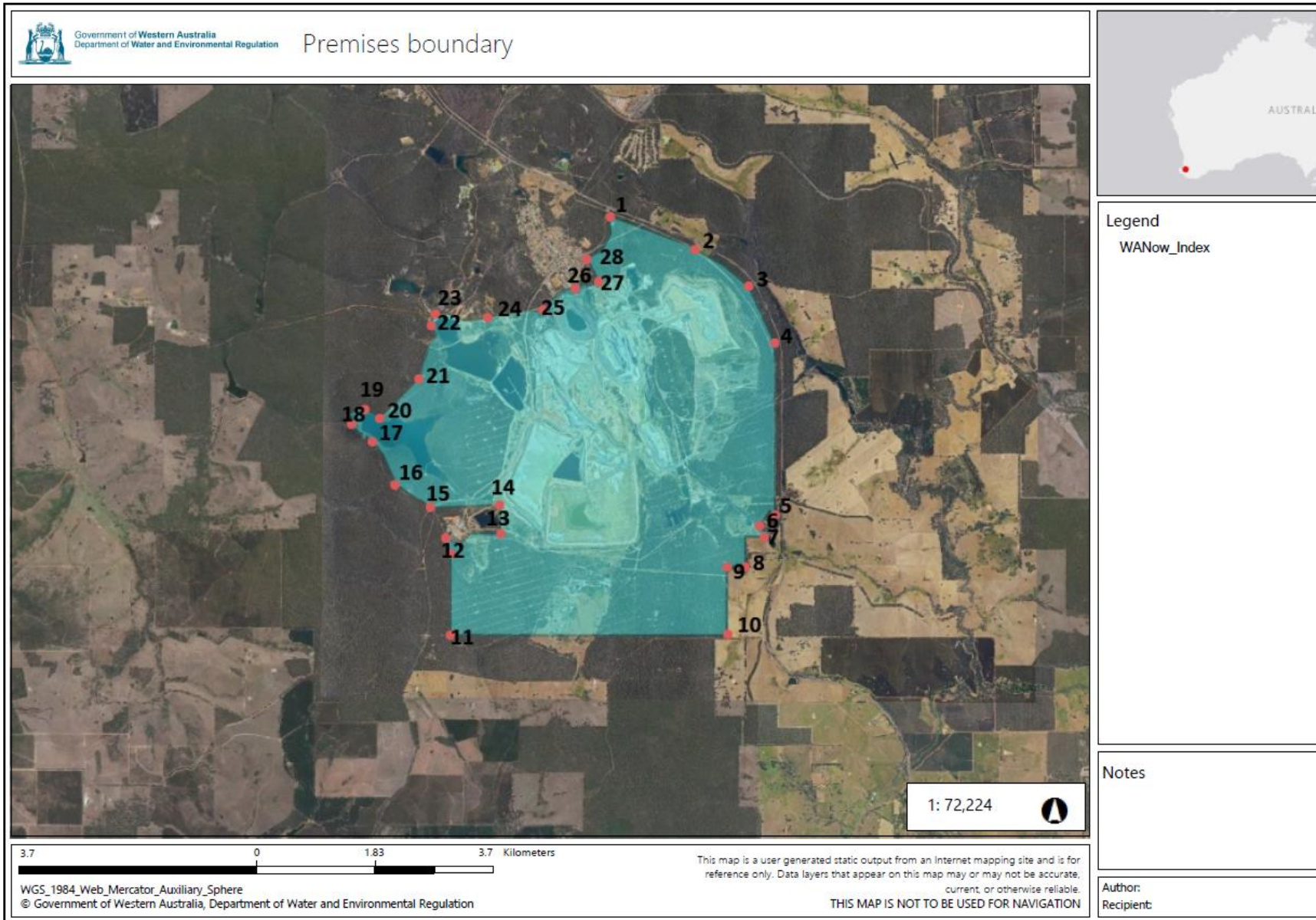


Figure 8 Premises boundary

Schedule 3: Reporting & notification forms



Government of **Western Australia**
Department of **Water and Environmental Regulation**

Licence:

Form: N1

Licence holder:

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	