Government of Western Australia
Department of Water and Environmental Regulation

Amended Works Approval

Works approval number	W5977/2016/1
Works approval holder	Tianqi Lithium Kwinana Pty Ltd
ACN	612 085 364
Registered business address	578 Murray Street West Perth WA 6005
DWER file number	DER2016/001280
Duration	26/09/2016 to 21/12/2022
Date of issue	02/09/2020
Premises details	Lithium Hydroxide Processing Plant 61 Donaldson Road Kwinana Beach WA 6167 Legal description - Lot 201 on Deposited Plan 407762 Certificate of Title Volume 2914 Folio 662 As depicted in the Premises map and defined by the coordinates in Schedule 1.

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 31: Chemical manufacturing	*48,000 tpa (LHM)*
Category 44: Metal smelting or refining	*48,000 tpa (LHM)*

This amended works approval is granted to the works approval holder, subject to the attached conditions, on 02/09/2020, by:

Chris Malley
Digitally signed by Chris Malley
Date: 2020.09.02 13:14:15 +08'00'

A/Manager, Process Industries
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
21/09/2016	W5977/2016/1	New works approval for works associated with the first process train and ancillary infrastructure (stage 1) Licence granted
25/10/2017	W5977/2016/1	Amendment Notice 1, to enable construction of Stage 2 and to increase lithium hydroxide capacity to 48,000 tonnes per year.
21/12/2018	WL5977/2016/1	Amendment 2 to enable staged commissioning of Stages 1 and 2 of the Tianqi LHPP to authorise emission and discharges from the LHPP through commissioning for a period of 12 months.
current	W5977/2016/1	Amendment 3 to enable changes to two stack heights to reflect design changes and to extend the commissioning period for Stage 1 by 12 months to allow for completion of stack validation sampling requirement.

Interpretation

In this works approval:

(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 works approval:

  (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 works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Definitions

In this works approval, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AS4323.1	means Australian Standard 4323.1 *Stationary source emissions – Selection of sampling positions*
CEMS	Continuous emissions monitoring system
CEMS Code	means the current version of the *Guideline: Continuous Emission Monitoring System (CEMS) Code for Stationary Source Air Emissions*, Department of Environment Regulation, Government of Western Australia
CEO	Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
CO	Carbon monoxide
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
Department Request	means a request for Books or other sources of information to be produced, made by an Inspector or the CEO to the Works Approval Holder in writing and sent to the Works Approval's address for notifications, as described at the front of this Works Approval, in relation to: (a) compliance with the EP Act or this Works Approval; (b) the Books or other sources of information maintained in accordance with this Works Approval; or (c) the Books or other sources of information relating to Emissions from the Premises.
DWER	Department of Water and Environmental Regulation
EP Act	means the *Environmental Protection Act 1986* (WA).
EP Regulations	means the *Environmental Protection Regulations 1987* (WA).
LHPP	Lithium Hydroxide Processing Plant
LMH	Lithium Hydroxide Monohydrate
mabgl	means metres above ground level
NATA	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
NOx	Oxides of nitrogen
Operating	means the acceptance of spodumene feed material and reagents (limestone, quicklime, sulfuric acid and caustic) to the Premises and the subsequent introduction of spodumene feed material to a processing train for the production of lithium hydroxide monohydrate product.
PM	Particulate matter
PM_{10}	Particulate matter 10 micrometres or less in diameter
Processing train	means a pyrometallurgical processing unit followed by a hydrometallurgical processing unit with each respective unit consisting of the general components set out in Table 2
SO_2	Sulfur dioxide
SO_3	Sulfur trioxide
STP dry	means standard temperature and pressure (0^{o}Celsius and 101.325 kilopascals respectively) dry
TAS	Tianqi Aluminosilicate
TSP	Total suspended particulates
USEPA	United States (of America) Environmental Protection Agency
USEPA Method 2	means *USEPA Method 2 Determination of Stack Gas Velocity and Volumetric Flow Rate(Type S Pitot Tube)*

Term	Definition
USEPA Method 5	means *USEPA Method 5 Determination of Particulate Matter Emissions from Stationary Sources*
USEPA Method 7E	means *USEPA Method 7E Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)*
USEPA Method 8	means *USEPA Method 8 Determination of Sulfuric Acid and Sulfur Dioxide Emissions from Stationary Sources*
USEPA Method 201A	means *USEPA Method 201A Determination of PM_{10} and $PM_{2.5}$ Emissions from Stationary Sources (constant sampling rate procedure)*
Works	refers to the Works described in Schedule 2, at the locations shown in Schedule 1 of this Works Approval to be carried out at the Premises, subject to the conditions.

Works approval conditions - Works

Premises

1. The Works Approval Holder must carry out the Works within the Premises in accordance with the requirements set out in Schedule 2.

Location of works

2. The Works Approval Holder must locate the Works generally in accordance with the Schedule 1: Maps.

Infrastructure and equipment (design and construction)

3. Subject to condition 5, at least 10 business days prior to the commencement of the Works, The Works Approval Holder must provide to the CEO engineering or building certification from a suitable qualified professional confirming that the detailed construction drawings and plans for the Works include each item of infrastructure or component of infrastructure specified in column 1 with the requirements specified in column 2, as set out in Table 2.

4. Subject to condition 5, and prior to Operating the Works (or portion thereof), the Works Approval Holder must provide to the CEO a report from an Engineer that:

(a) lists and describes the completed Works (or portion thereof) and any associated items of infrastructure and equipment listed in Table 2;

(b) identifies any discharge points listed in Table 6 to be operated;

(c) confirms the Works (or portion thereof) have been constructed with no material defects; and

(d) confirms the items of infrastructure and equipment specified in Table 2 associated with the Works (or portion thereof) have been constructed to the corresponding requirements specified in Table 2.

5. The Works Approval Holder must not depart from the requirements specified in Column 2 of Table 2 except:

(a) where such departure does not increase risks to public health, public amenity or the environment; and

(b) all other conditions in this Works Approval are still satisfied.

6. Where a departure from the requirements specified in Column 2 of Table 2 occurs and is of a type allowed by condition 5, the Works Approval Holder must provide to the CEO a description of, and explanation for, the departure along with the certification required by condition 3 and 4.

Table 2: Infrastructure and equipment requirements (design and construction) table

Column 1	**Column 2**
Infrastructure / equipment	**Requirements (design and construction)**
Spodumene Delivery, and Spodumene Stockpile	- Enclosed and equipped with rapid opening and closing automatic doors to allow the unloading and stockpiling of spodumene concentrate and limestone in a sealed environment.
Limestone Delivery	- Delivery in tankers with fully encapsulated off-loading by pneumatic transfer.

Column 1	Column 2
Infrastructure / equipment	**Requirements (design and construction)**
TAS Storage, TAS Pelletising Plant, and Filters	- Enclosed and equipped with rapid opening and closing automatic doors to allow the stockpiling, pelletising, and loading of aluminosilicate and neutralisation agent (gypsum/limestone mixture) in a sealed environment.
Pyro Operations and Hydro Operations	- Stacks with a minimum stack height as follows: • Calciner fan stack: 40 m • Acid roast kiln stack: 50 m • Acid roast scrubber stack: 19.2 m • Spodumene mill stack: 25 m • Steam generator stack: 12 m • Sodium sulphate stack: 10.4 m • Calciner refeed feed end stack: 37 m • Calciner refeed discharge end stack: 33 m - All stacks must be fitted with sampling ports that are compliant with the requirements of AS4323.1 and the CEMS Code to allow periodic emissions monitoring and installation of CEMS. - A calciner baghouse filter capable of: • minimising particulate matter emissions from the calciner to less than 50 mg/m^3 (STP dry) during normal operating conditions; and • detection and isolation of broken bags, without requiring a baghouse bypass situation to exchange or replace the broken bags. - Spodumene mill baghouse filter capable of: • minimising particulate matter emissions from the spodumene mill to less than 50 mg/m^3 (STP (dry) during normal operating conditions. - An acid roast off-gas scrubber train as follows: • Venturi scrubber; • Entrainment separator; • Wet electrostatic precipitator; • Pressurised emergency water quench vessel; • Duty and standby pumps for all duties; and • capable of minimising sulphur acid emissions to less than 20 ppm during normal operating conditions .
Lithium Hydroxide Bagging Building	- Automated packaging equipment and storage located within an enclosed room inside the warehouse. - Enclosed and equipped with rapid opening and closing automatic doors to allow the bagging and handling of lithium hydroxide in a sealed environment.
Sodium Sulphate Storage Warehouse	- Enclosed and equipped with rapid opening and closing automatic doors to allow the storage and handling of sodium sulphate in a sealed environment.
Conveyors	- All conveyors are to be enclosed
Stationary Equipment	- All compressors must have a purpose built enclosures for noise attenuation. - All stationary items of equipment exceeding a manufacturer specified sound pressure level of 85 dBA at 1 m must be located within a building or otherwise within a noise attenuating enclosure.
Stormwater System	Designed in accordance with the Schedule 1: Stormwater Plan including: - Stormwater from the Delivery Area, Stage 1 & 2 Pyro Operations Areas, and the TAS Loading Area will be directed to two Water Quality Management Systems which include Wedge Pits, Storage Tanks and overflow pipes. - Wedge Pits must: • be concrete lined and designed to capture suspended solids by sedimentation; • have a treatment chamber designed for storage requirements based on a 1 in 1 year ARI storm of 1 hour duration ; and • allow machinery access for removal of accumulated solids.

Column 1	Column 2
Infrastructure / equipment	**Requirements (design and construction)**
	- Storage Tanks ('SW Tanks') for the storage of treated water from Wedge Pits 1 and 2 respectively must be sized to store a 1 in 2 year ARI storm of 72-hour duration, taking process drawdown into account.
Chemical Storage	- Acid and caustic storage areas must be provided with a sealed bunded capacity of 110% volume capacity of the maximum stored volume.
Wastewater	- Wastewater storage tanks are to be fitted with water level sensors, temperature probes and sealed emergency overflow sumps.

Fugitive dust management

7. The Works Approval Holder must undertake the minimum requirements in Table 3 for the purposes of managing fugitive dust emissions from the Premises.

Table 3: Fugitive dust management conditions

Description	Operation details
Water carts	(a) Operate when visible dust is generated from external ground surface areas on the Premises. (b) Operate proactively subject to weather forecasting over a 24 hour period. (c) Operate when visible dust is reported by site personnel.
Dust suppressants	(a) Apply proactively. (b) Re-apply proactively subject to visual inspection and weather forecasting over a 24 hour period.
Vehicles	(a) Defined haul routes for vehicles to traverse unsealed surfaces or unformed roads. (b) Vehicle speeds less than 25 km/hr on areas of unconsolidated or unsealed road.
Cessation of activities	(a) Cease an activity causing visible dust lift-off during high wind conditions where dust management requirements have not prevented visible dust lift.

Clearing of native vegetation

8. The Works Approval Holder must not clear more than 1.17 hectares of native vegetation within the area cross-hatched yellow in Schedule 1: Clearing of Native Vegetation Plan 7198/1.

Emissions

9. The Works Approval Holder must not cause any Emissions from the Works authorised through this Works Approval except for specified Emissions and general Emissions described in Column 1 of Table 4, subject to the exclusions, limitations or requirements specified in Column 2, of Table 4.

Table 4: Authorised emissions table

Column 1	Column 2
Emission type	**Exclusions/Limitations/Requirements**
Specified Emissions	
Discharges to air	• Subject to compliance with conditions 4, 12, 13, 14, 15, 16 and 17. • Discharges to air from any individual processing train must not exceed a period of 24 months for Stage 1 (time limited operations) and 12 months for stage 2 (time limited operations) from the date the first report (for an individual processing train) was provided to the CEO as required by condition 4.
General Emissions (excluding Specified Emissions)	
Emissions which arise from: • undertaking the Works set out in Schedule 2; and • the primary activities set out in Schedule 3.	Emissions excluded from General Emissions are: • Unreasonable Emissions; or • Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or • Discharges of Waste in circumstances likely to cause Pollution; or • Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or • Emissions or Discharges which do not comply with an Approved Policy; or • Emissions or Discharges which do not comply with prescribed standard; or • Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or • Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the Environmental P*rotection (Unauthorised Discharges) Regulations 2004*.

Noise emissions

10. The Works Approval Holder must retain the services of a person qualified and experienced in the area of environmental noise assessment and who by their qualifications and experience is eligible to hold membership of the Australian Acoustical Society or the Australian Associated of Acoustical Consultants to compile and provide to the Works Approval Holder a report detailing a proposed noise monitoring program that:

(a) investigates the nature and extent of noise emissions from the Premises for a two processing train operational scenario to assess:

(i) noise emissions from the Premises in accordance with the methodology required in the *Environmental Protection (Noise) Regulations 1997*, against the relevant assigned levels in those Regulations; and

(ii) against design criteria and predicted noise emissions from the Premises in the '*Tianqi Lithium Australia Pty Ltd, WA and DA Approvals – Stage 2, Noise and Vibration Assessment*, GHD, August 2017' noise assessment.

11. The Works Approval Holder must provide a report to the CEO prepared pursuant to condition 10 by 31 July 2019

Conditions - Operations

Infrastructure and equipment (operation)

12. The Works Approval Holder must ensure that the infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained in good working order and operated in accordance with the corresponding operational requirements set out in Table 5.

Table 5: Infrastructure and equipment (operation) controls table

Infrastructure / equipment	Requirements (operation)	Site plan reference
All calciners	Bag filter system	
All spodumene mills	Bag filter system	
All acid roast kilns	A system for scrubbing acid vapour process off-gas from the acid roast kiln comprising: • Venturi scrubber; • Entrainment separator; • Wet electrostatic precipitators; and • Pressurised emergency water quench vessel	
Spodumene building and TAS building	Rapid opening and closing automatic doors remain closed except for the entry and exit of vehicles and machinery	

Infrastructure / equipment	Requirements (operation)	Site plan reference
Spodumene ore concentrate, acid roasted solids, reagents (limestone and quicklime) and loose by-products	Must be stored within dedicated buildings, warehouses, silos, tanks or vessels. Loads must be covered when transported by truck within the Premises.	
Stormwater system	Stormwater runoff from delivery areas (spodumene and limestone), processing trains and the TAS loading area is directed to concrete lined wedge pits.	

Discharges to air

13. The Works Approval Holder must ensure that the emissions in Table 6 are discharged:

(a) only from the specified discharge point;

(b) only at the corresponding discharge point height; and

(c) only at the corresponding discharge point location;

set out in Table 6.

Table 6: Authorised discharge points to air

Emissions	Discharge point	Discharge point height (magl)	Discharge point location on Schedule 1: Discharges to air location map
Pyrometallurgical units			
PM, NOx, SO_2, CO	Calciner fan stacks	40	Processing train 1: 1200-SK-001 Processing train 2: 2200-SK-001
PM	Calciner refeed feed end stacks	37	Processing train 1: 1210-BH-001 Processing train 2: 2210-BH-001
	Calciner refeed discharge end stacks	24.4	Processing train 1: 1210-BH-002 Processing train 2: 2210-BH-002
	Spodumene mill stacks	25	Processing train 1: 1230-SK-001 Processing train 2: 2230-SK-001
NOx, SO_2, CO	Acid roast kiln stacks	50	Processing train 1: 1310-SK-001 Processing train 2: 2310-SK-001
PM, SO_2, SO_3	Acid roast scrubber stacks	19.2	Processing train 1:1340-SK-001 Processing train 2: 2340-SK-001
Hydrometallurgical units			
PM, NOx, SO_2, CO	Sodium sulfate heater stacks	30.5	Processing train 1: 1710-VL-017 Processing train 2: 2710-VL-017
Steam boilers			
NOx, SO_2, CO	Steam generator stacks	12	Processing train 1: 4140-SK-001 Processing train 2:4140-SK-002 and 4140-SK-003

Emission limits

14. The Works Approval Holder must ensure that emissions from the discharge point listed in Table 8 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 15.

Table 7: Emission limits

Discharge point and location on Schedule 1: Map of discharge point locations	Emission	Limit
Calciner fan stacks Sodium sulfate heater stacks	NOx	350 mg/m^3
	TSP	50 mg/m^3
Acid roast scrubber stacks	SO_3	100 mg/m^3
	TSP	50 mg/m^3
Calciner refeed end stacks	TSP	50 mg/m^3
Calciner refeed discharge end stacks		
Spodumene mill stacks		

Monitoring of discharges to air

15. The Works Approval Holder must monitor emissions:

(a) from the discharge point;

(b) at the corresponding monitoring location;

(c) for the corresponding parameter;

(d) at the corresponding frequency;

(e) for the corresponding averaging period;

(f) in the corresponding unit; and

(g) using the corresponding method;

set out in Table 8.

Table 8: Monitoring of discharges to air

Discharge point and location on Schedule 1: Discharges to air location map	Parameter	Frequency	Averaging period	Unit[1,2]	Method[3,4]
Pyrometallurgical units					
Calciner fan stacks (1200-SK-001 and 2200-SK-001)	TSP	Two separate sample events separated by at least one week within the first three months of emissions through the discharge point	60 minutes	mg/m^3 g/s	USEPA Method 5
	PM_{10}				USEPA Method 201A
	NOx (as NO_2)				USEPA Method 7E
	Flow rate			m^3/s	USEPA Method 2

Discharge point and location on Schedule 1: Discharges to air location map	Parameter	Frequency	Averaging period	Unit[1,2]	Method[3,4]
Calciner refeed feed end stacks (1210-BH-001 and 2210-BH-001) Calciner refeed discharge end stacks (1210-BH-002 and 2210-BH-002) Spodumene mill stacks (1230-SK-001 and 2230-SK-001)	TSP			mg/m^3 g/s	USEPA Method 5
	PM_{10}				USEPA Method 201A
	Flow rate			m^3/s	USEPA Method 2
Acid roast scrubber stacks (1340-SK-001 and 2340-SK-001)	TSP			mg/m^3 g/s	USEPA Method 5
	PM_{10}				USEPA Method 201A
	SO_2				USEPA Method 8
	SO_3				
	Flow rate			m^3/s	USEPA Method 2
Hydrometallurgical units					
Sodium sulfate heater stacks Heater stacks (1710-VL-017 and 2710-VL-017)	TSP	Two separate sample events separated by at least one week within the first three months of emissions through the discharge point	60 minutes	mg/m^3 g/s	USEPA Method 5
	PM_{10}				USEPA Method 201A
	NOx (as NO_2)				USEPA Method 7E
	Flow rate			m^3/s	USEPA Method 2

Note 1: All units are referenced to STP dry.
Note 2: Concentrations of NOx for the calciner fan stacks and Sodium sulfate heater stacks to be corrected to STP at 3% oxygen on a dry basis
Note 3: Duplicate sample runs conducted consecutively on the same sampling day
Note 4: Where any USEPA method refers to USEPA Method 1 for the sampling plane, this must be read as referral to AS 4323.1

16. The Works Approval Holder must ensure that sampling required by condition 15 is undertaken at sampling locations in accordance with the current version of AS 4323.1

17. The Works Approval Holder must ensure that all non-continuous sampling and analysis undertaken required by condition 15 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis

Records and reporting

Emissions reporting

18. The Works Approval Holder must submit to the CEO emissions reports for the conditions listed in Table 9, which provides information in accordance with the corresponding requirements and by the specified due dates set out in Table 9.

Table 9: Emissions report requirements

Condition	Requirement	Due date
15 Monitoring of discharges to air	An emissions report for each processing train with tabulated monitoring data results for each monitoring location showing concentrations and emission rates of all parameters. Copies of original monitoring, laboratory and analysis reports submitted to the Works Approval Holder from third parties.	Within 30 days of receiving third party analysis reports for all sample events for each processing train.

Record keeping

19. The Works Approval Holder must maintain accurate books including information, reports and data in relation to the Works and the books must:

(a) be legible;

(b) if amended, be amended in such a ways that the original and subsequent amendments remain legible or are capable of retrieval;

(c) be retained for six years after the expiry of this Works Approval; and

(d) be available to be produced to an Inspector or the CEO.

20. The Works Approval Holder must comply with a Department Request within 7 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

Non-compliance notification

21. The Works Approval Holder must, within seven days of becoming aware of any non-compliance with an emission limit specified in condition 6 of the Works Approval, notify the CEO in writing of that non-compliance and include in that notification the following information:

(a) which emission limit was not complied with;

(b) the time and date when the non-compliance occurred;

(c) if any environmental impact occurred as a result of the non-compliance and if so what that impact is and where the impact occurred;

(d) the details and result of any investigation undertaken into the cause of the non-compliance;

(e) what action has been taken and the date on which it was taken to prevent the non-compliance occurring again; and

(f) what action will be taken and the date by which it will be taken to prevent the non-compliance occurring again.

Complaints management

22. The Works Approval Holder must record the following information in relation to complaints received relating to emissions from the Premises:

(a) the name and contact details of the complainants (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

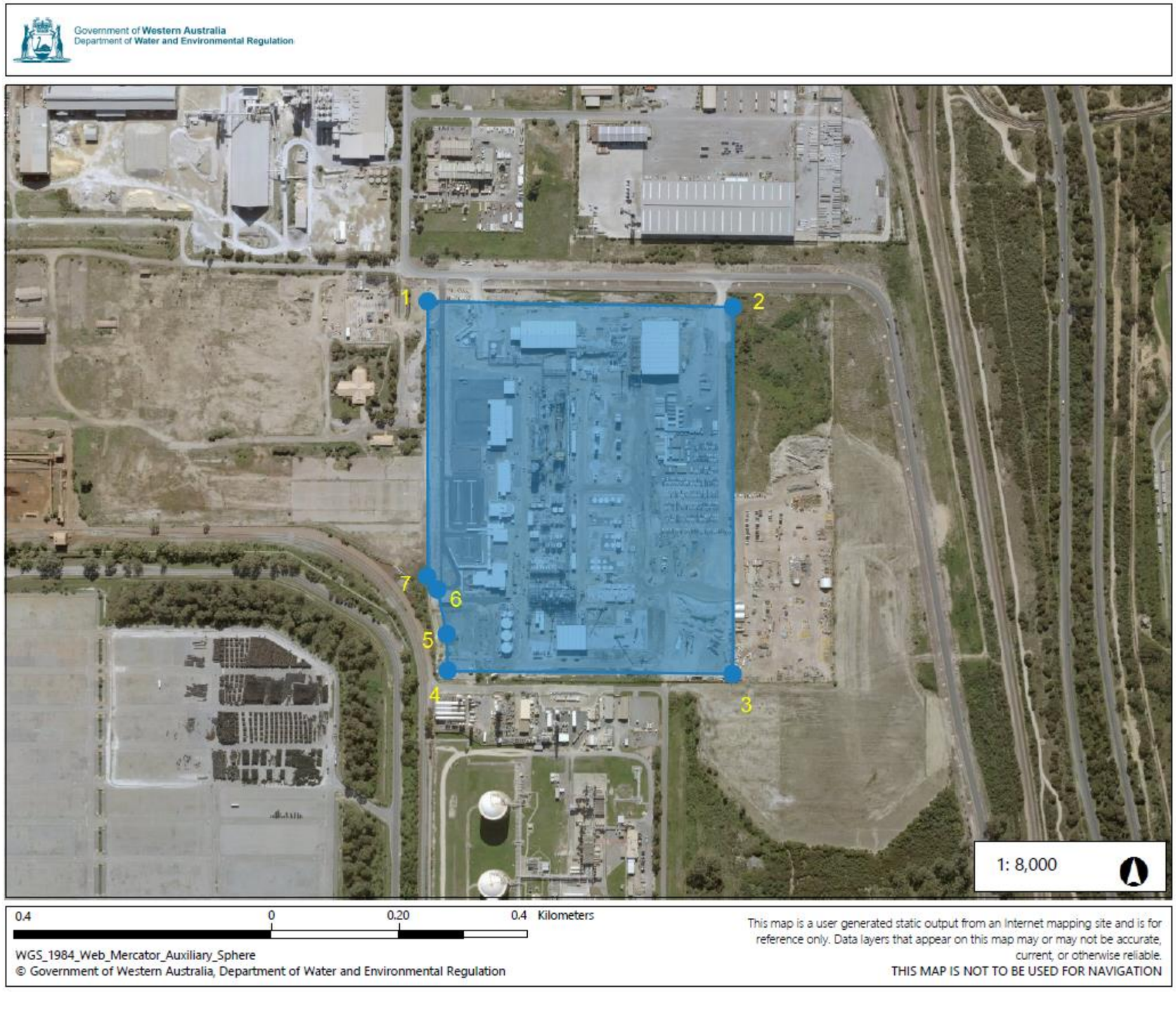
(d) the complete details and dates of any action taken by the Works Approval Holder to investigate or respond to any complaint.

END OF CONDITIONS

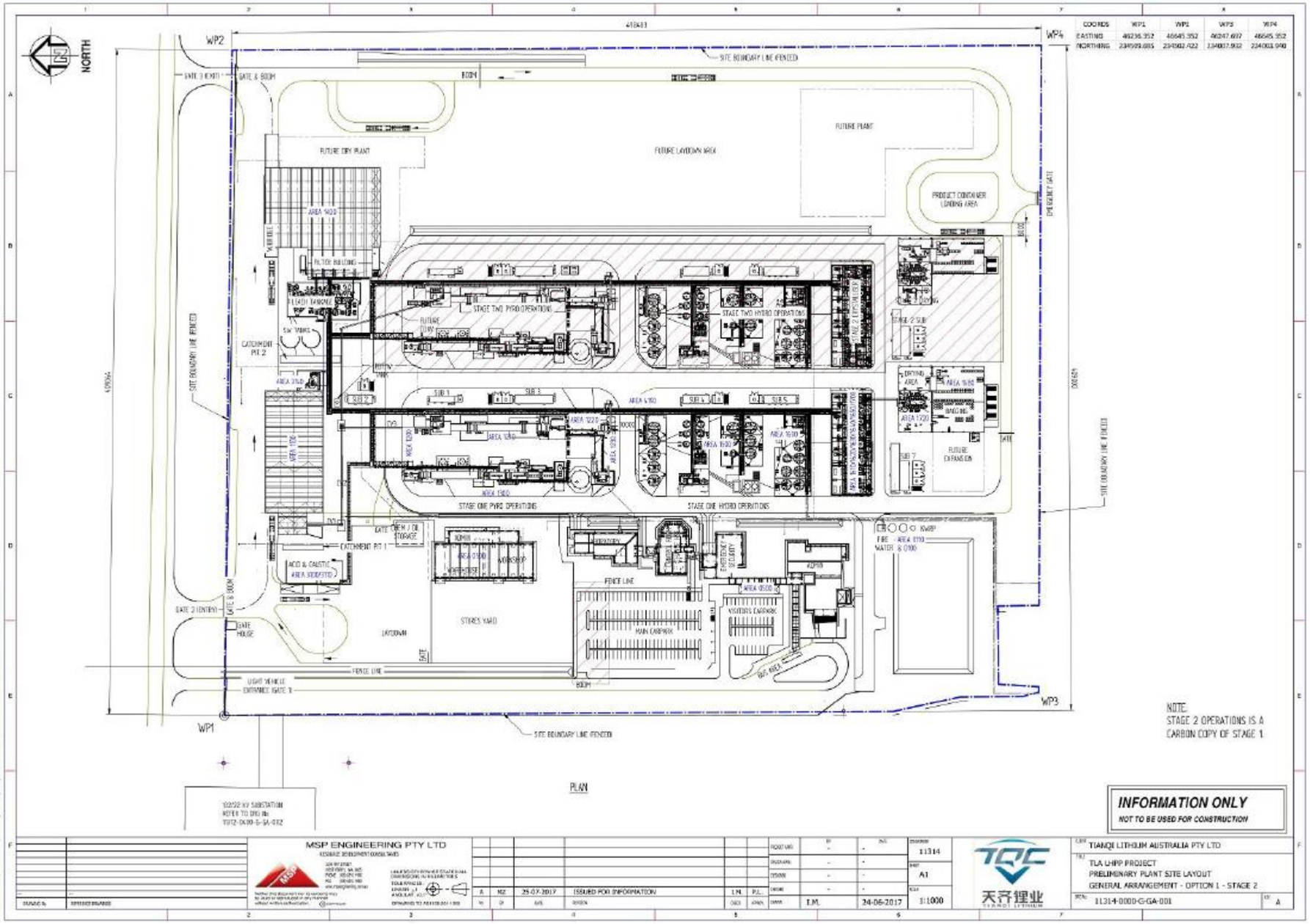
Schedule 1: Maps

Premises map

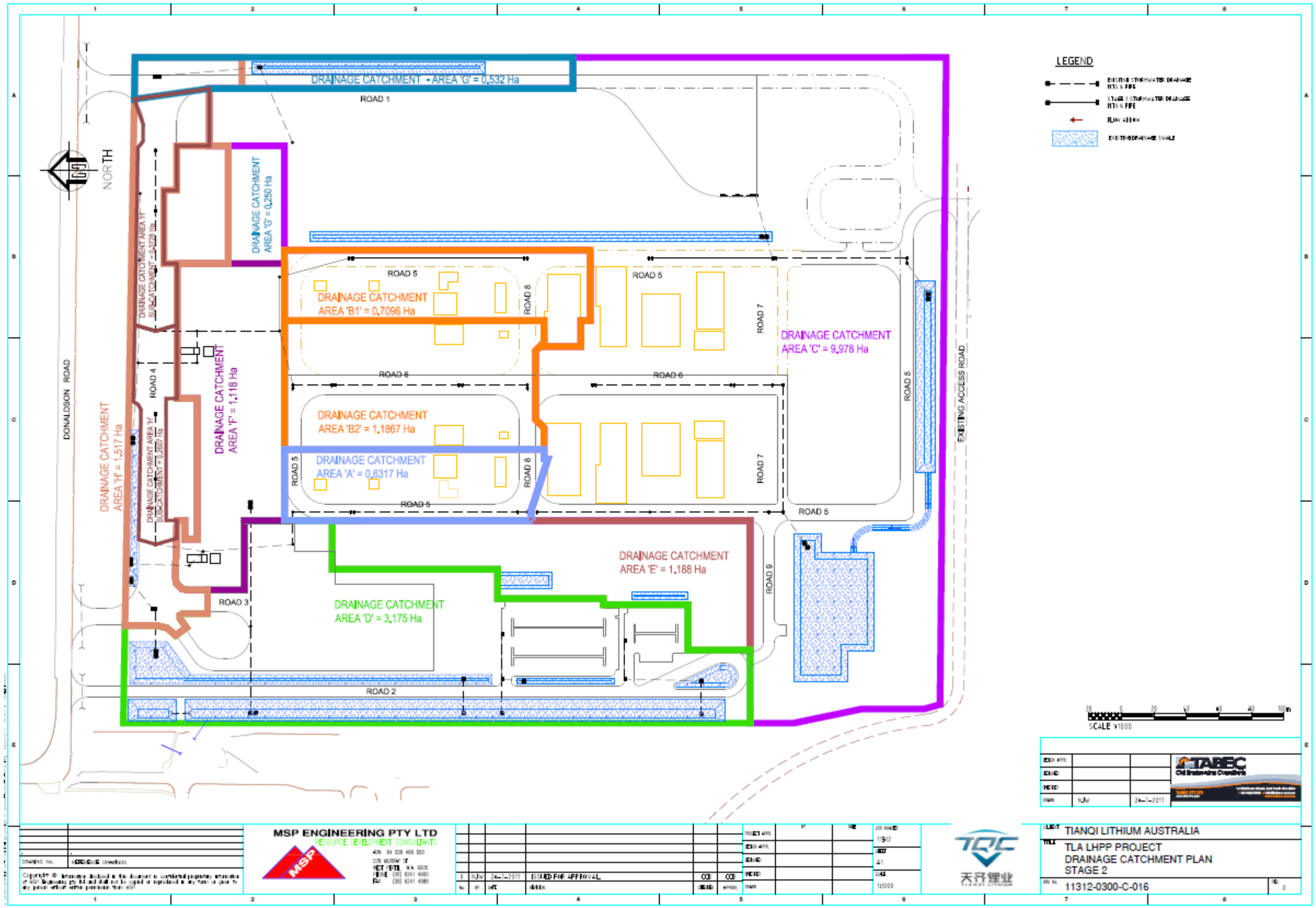
The Premises are shown in the map below and the boundary defined by the coordinates in Table 10.



General layout map

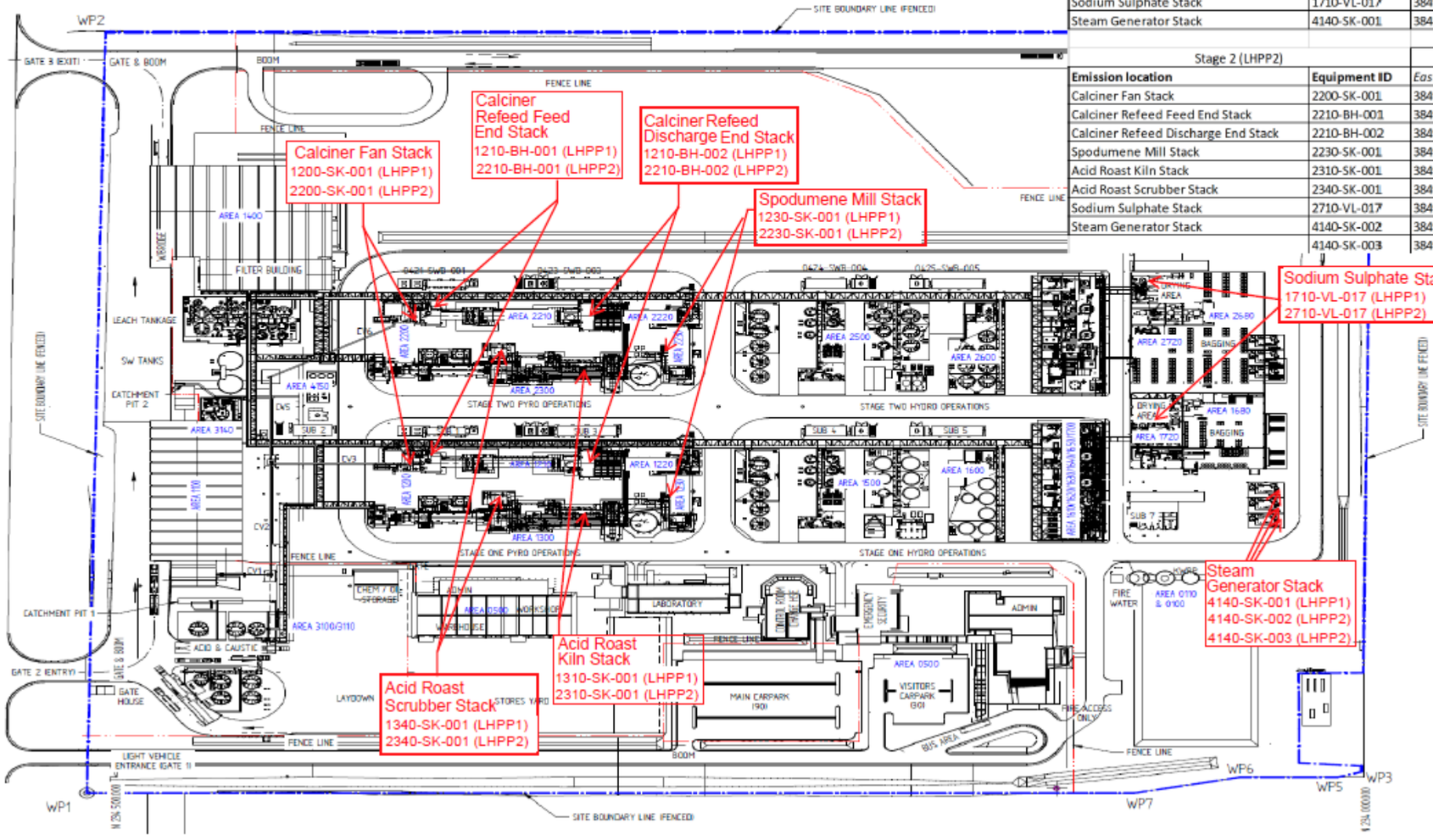


Stormwater plan



Discharges to air location map

Figure 7.1 – Site Layout



Stage 1 (LHPP1)		Coordinates (m)	
Emission location	**Equipment ID**	*East*	*North*
Calciner Fan Stack	1200-SK-001	384897	6435153
Calciner Refeed Feed End Stack	1210-BH-001	384896	6435141
Calciner Refeed Discharge End Stack	1210-BH-002	384894	6435084
Spodumene Mill Stack	1230-SK-001	384882	6435050
Acid Roast Kiln Stack	1310-SK-001	384878	6435094
Acid Roast Scrubber Stack	1340-SK-001	384880	6435108
Sodium Sulphate Stack	1710-VL-017	384905	6434863
Steam Generator Stack	4140-SK-001	384898	6434935

Stage 2 (LHPP2)		Coordinates	
Emission location	**Equipment ID**	*East*	*North*
Calciner Fan Stack	2200-SK-001	384976	6435154
Calciner Refeed Feed End Stack	2210-BH-001	384976	6435142
Calciner Refeed Discharge End Stack	2210-BH-002	384974	6435085
Spodumene Mill Stack	2230-SK-001	384961	6435051
Acid Roast Kiln Stack	2310-SK-001	384957	6435095
Acid Roast Scrubber Stack	2340-SK-001	384959	6435109
Sodium Sulphate Stack	2710-VL-017	384989	6434864
Steam Generator Stack	4140-SK-002	384977	6434936
	4140-SK-003	384977	6434936

Premises boundary

The Premises boundary depicted on the Premises Map in Schedule 1 is defined by the Geocentric Datum of Australia (GDA) 1994 coordinates in Table 10.

Table 10: Premises boundary coordinates

Transect reference on Premises map	Easting	Northing
1	384721.2842	6435277.175
2	385130.2429	6435274.417
3	385135.6196	6434786.154
4	384754.0864	6434785.628
5	384751.4137	6434835.796
6	384738.4185	6434894.414
7	384725.3112	6434911.484

Schedule 2: Works

At the time of assessment, Emissions and Discharges from the Works listed in Table 11 were considered in the determination of the risk and related conditions for the Works Approval.

Table 11: Authorised Works

Item	Works	Specifications/Drawings
1	Weighbridge	Schedule 1 Maps: General layout map
2	Truck wash	Schedule 1 Maps: General layout map
3	Limestone Delivery, Spodumene Delivery and Spodumene Stockpile Building	Schedule 1 Maps: General layout map
4	TAS Storage, TAS Pelletising Plant and Filters Building	Schedule 1 Maps: General layout map
5	Leach Tanks	Schedule 1 Maps: General layout map
6	Stage One Pyro and Stage One Hydro	Schedule 1 Maps: General layout map
7	Conveyor system	Schedule 1 Maps: General layout map
8	Na_2SO_4 and LiOH Product Bagging Building	Schedule 1 Maps: General layout map
9	Na_2SO_4 Storage Warehouse	Schedule 1 Maps: General layout map
10	Product Container Loading Area	Schedule 1 Maps: General layout map
11	Acid & Caustic and Chemical/Oil Storage Areas	Schedule 1 Maps: General layout map
12	Contingency wastewater storage tanks	Schedule 1 Maps: General layout map
13	Stormwater System	Schedule 1 Maps: Stormwater plan
14	Stage Two Pyro and Stage Two Hydro Operations	Schedule 1 Maps: General layout map

Site layout

The infrastructure and equipment are set out on the Premises in accordance with the site layout specified on the General layout map in Schedule 1.

Schedule 3: Primary Activities

At the time of assessment, emissions and discharges from the following Primary Activities were considered in the determination of the risk and related conditions for the Premises

Primary activities are listed in Table 12.

Table 12: Primary Activities

Primary Activity	Premises production or design capacity
Category 31: Chemical manufacturing	48,000 tonnes per year (lithium hydroxide monohydrate) 88,500 tonnes per year (sodium sulfate)
Category 44: Metal smelting or refining	200,000 tonnes per year (spodumene or concentrate)

Infrastructure and equipment

The Primary Activity infrastructure and equipment situated on the Premises is listed in Table 13.

Table 13: Infrastructure and equipment

Infrastructure and equipment	Plan reference
Limestone delivery, spodumene delivery and spodumene stockpile building	Schedule 1 Maps: • General layout map; and • Stormwater plan
Two pyrometallurgical processing train units each including calcining, calcine crushing and acid roasting kiln (with vapour treatment and recovery) systems	
Two hydrometallurgical processing train units each including leaching, purification, TAS tailings filtration, gypsum/limestone filtration, crystallisation and drying systems	
TAS storage, pelletising and filter building	
Gypsum/TAS loading area	
Leach tanks	
Product (lithium hydroxide and sodium sulfate) bagging area	
Sodium sulfate storage warehouse	
Product container handling and loading areas	
Acid/caustic and chemical/oil storage areas	
Stormwater system for stormwater runoff from the materials delivery area, processing trains and TAS loading area including wedge pits, storage tanks and overflow pipes.	
Reverse osmosis water treatment systems including a plant, permeate (treated wastewater) storage tanks and brine (concentrated wastewater) storage tanks	
Gas-fired steam generators	
Cooling towers	