Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6832/2023/1
Works approval 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	DER2023/000532
Duration	17/11/2023 to 16/11/2026
Date of issue	17/11/2023
Date of amendment	21/05/2024
Premises details	Talison Greenbushes Lithium Mine – Village Wastewater Treatment Plant 1130 Maranup Ford Road GREENBUSHES WA 6254 Mining tenements L70/232, L70/244, M01/3, M1/06 and M01/7 As defined by the premises maps attached to the issued works approval

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed design capacity**
Category 54: Sewage facility: premises – a) on which sewage is treated (excluding septic tanks); or b) from which treated sewage is discharged onto land or into waters. 100 m^3 or more per day.	187.5 m^3 per day

This works approval is granted to the works approval holder, subject to the attached conditions, on 21 May 2024, by:

Sonya Poor

Digitally signed by Sonya Poor
Date: 2024.05.21 11:21:41 +08'00'

SENIOR ENVIRONMENTAL OFFICER, INDUSTRY REGULATION

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

Works approval history

Date	Reference number	Summary of changes
17/11/2023	W6832/2023/1	Works approval granted.
21/05/2024	W6832/2023/1	Increase in the design capacity for Category 54 from 125 m^3/day to 187.5 m^3/day.

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.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location,

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Membrane Bio-Reactor (MBR) Wastewater Treatment Plant (WWTP)	The WWTP must be designed and installed to meet the following specifications: (a) Comprising the following equipment: i. Automated inlet screen and screenings collection/bagging system; ii. 3 x balance tanks (50 kL each); iii. Containerised anoxic-aerobic bio reactor tanks and associated diffused air aeration system; iv. 3 x submerged flat sheet membranes and membrane clearing system; v. Chlorine (sodium hypochlorite dosing) and UV disinfection systems; vi. Poly-aluminium chloride (PACL) dosing system; vii. Sludge storage tank (50 kL); viii. 2 x treated effluent storage tanks (50 kL each); ix. Treated effluent buffer storage tank (380kL); and x. Associated pipework, pumping systems, blowers, electrical, instrumentation and control systems. (b) Be able to receive and treat a sewage inflow of up to 125 m^3/day; (c) Able to treat sewage to the following output standards: i. Biochemical oxygen demand (BOD) <10 mg/L; ii. pH 6.5 – 8.5; iii. Total suspended solids (TSS) <10 mg/L; iv. Total nitrogen (TN) <15 mg/L;	As shown in Figure 1 and Figure 3 of Schedule 1

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		v. Total phosphorus (TP) <2 mg/L; vi. *E. coli* <1 cfu/100mL; vii. Residual free chlorine 0.2mg/L to 2.0mg/L; and viii. Turbidity <2 NTU. (d) Have a sealed connection point for pumping-out tank sludge for offsite disposal to a licensed waste facility; (e) Flow meters are required to be installed on the inlet and outlet side of the plant to record both inflows and outflows from the WWTP; (f) Incorporate an alarm system of audible and visual alarms, which will activate in the event of the WWTP operating outside the design parameters including: i. system faults; ii. high tank levels; and iii. tank overflows and leaks. (g) All above ground WWTP infrastructure to be located on compacted earth pad with a surrounding earthen bund to contain spills and contaminated stormwater; (h) All sewage conveyance, storage and treatment infrastructure must be designed and constructed to ensure that stormwater does not enter the sewage treatment system and sewage and treated wastewater storage infrastructure; and (i) All sewage storage and treatment tanks, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks and defects.	
2.	WWTP expansion (Containerised MBR module)	The WWTP must be designed and installed to meet the following specifications: (a) Comprising the following equipment: i. Automated inlet screen and screenings collection/bagging system; ii. Balance tank (50 kL); iii. Containerised anoxic-aerobic bio reactor tanks and associated diffused air aeration system; iv. Aerobic tank (50 m^3); v. MBR tank (27 m^3); vi. Sucrose dosing system; vii. PACL dosing system; viii. Membrane chemical cleaning system; and ix. Associated pipework, pumping systems, blowers, electrical, instrumentation and control systems. (b) Be able to receive and treat a sewage inflow of up to	As shown in Figure 2 and Figure 4 of Schedule 1

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		62.5 m^3/day. (c) Able to treat sewage to the following output standards: i. Biochemical oxygen demand (BOD) <10 mg/L; ii. pH 6.5 – 8.5; iii. Total suspended solids (TSS) <10 mg/L; iv. Total nitrogen (TN) <15 mg/L; v. Total phosphorus (TP) <2 mg/L; vi. *E. coli* <1 cfu/100mL; vii. Residual free chlorine 0.2mg/L to 2.0mg/L; and viii. Turbidity <2 NTU. (d) Incorporate an alarm system of audible and visual alarms, which will activate in the event of the WWTP operating outside the design parameters including: i. system faults; ii. high tank levels; and iii. tank overflows and leaks. (e) All above ground WWTP infrastructure to be located on compacted earth pad with a surrounding earthen bund to contain spills and contaminated stormwater; (f) All sewage conveyance, storage and treatment infrastructure must be designed and constructed to ensure that stormwater does not enter the sewage treatment system and sewage and treated wastewater storage infrastructure; and (g) All sewage storage and treatment tanks, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks and defects.	
3.	Effluent pipeline	The effluent pipeline to be: (a) Installed to convey treated effluent from the WWTP to TSF4; (b) Installed in a manner and location to minimise risks associated with collision/accidental damage; (c) Constructed of HDPE (or similar); (d) Be constructed free of leaks and defects; and (e) Have signage/tagging installed to identify the pipeline.	As shown in Figure 1 of Schedule 1

Compliance reporting

2. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

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

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification by a suitably qualified engineer that the infrastructure or equipment as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and

(c) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

4. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 1 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 2 of this works approval.

5. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 2 may only be carried out:

(a) in accordance with the corresponding commissioning requirements; and

(b) for the corresponding authorised commissioning duration.

Table 2: Environmental commissioning requirements

	Infrastructure	Commissioning requirements	Authorised commissioning duration
1.	WWTP / WWTP expansion and effluent pipeline	(a) All treated effluent is stored in the treated effluent holding tanks prior to discharge or disposal; (b) Treated effluent that does not meet design specifications listed in condition 1 is to be stored in the treated effluent buffer storage tank prior to: (i) removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; or (ii) re-circulation back through the WWTP. (c) Treated effluent that meets design specifications listed in condition 1 may be disposed of to the TSF4 decant pond only once TSF4 is approved to receive this discharge[1]; (d) Until approval is obtained for disposal of treated effluent to TSF4, treated effluent that meets design specifications listed in condition 1 must be removed offsite for disposal at premises authorised by the department to accept the waste; (e) Sludge is contained within a sealed sludge tank prior to removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; (f) Inspections are conducted daily to verify WWTP operation and function, and to ensure that containment infrastructure is maintained and operational; (g) Inspections are conducted daily on the effluent pipeline (when in use) to confirm integrity of pipes and no leaks are present and; (h) In the event of a leak/spill from the WWTP or effluent pipeline, the source will be isolated, and any contaminated soil remediated or disposed of to an appropriately licensed facility.	For a period not exceeding 90 calendar days in aggregate from the date the Environmental Compliance Report was submitted to the CEO.

Note 1: Treated effluent disposal into TSF4 Cell 1 and Cell 2 is only authorised under this works approval following separate approval for TSF4 to receive this discharge.

6. During environmental commissioning and time limited operations, the works approval holder must ensure that the emission(s) specified in Table 3, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 3: Authorised discharge points during environmental commissioning and time limited operations

	Emission	Discharge point	Discharge point location
1.	Treated wastewater	a) At the outlet of the WWTP, for removal offsite via a licenced waste contractor; or b) TSF4 decant pond (upon finalisation of all relevant approvals for TSF4 to receive this discharge[1])	As shown in Figure 1[1] and Figure 3 of Schedule 1

Note 1: Figure 1 includes the indicative disposal location into TSF4 Cell 1 and Cell 2. Treated effluent disposal into TSF4 Cell 1 and Cell 2 is only authorised under this works approval following separate approval for TSF4 to receive this discharge.

Monitoring during environmental commissioning

7. The works approval holder must monitor treated effluent during environmental commissioning in accordance with Table 4 and record the results of monitoring.

Table 4: Monitoring during environmental commissioning and time limited operations.

Discharge point	Parameter	Frequency	Averaging Period	Unit	Method
WWTP outlet prior to discharge, as depicted in Figure 3 of Schedule 1	*E. coli*	Weekly during environmental commissioning; and Monthly during time limited operations	Spot sample	cfu/100ml	Sample collection and preservation as per AS/NZS 5667.1. Analysis as per AS/NZS 5667.10 and conducted by a laboratory with NATA accreditation.
	Thermotolerant coliforms				
	BOD			mg/L	
	Total Suspended Solids				
	Total Nitrogen				
	Total Phosphorous				
	Total Dissolved Solids				
	pH[1]	Continuous	N/A	pH Units	
	Residual chlorine[1]	Continuous		mg/L	
	Turbidity	Continuous		NTU	
	Cumulative volumetric flow	Continuous	Daily	m^3/day	

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

Environmental commissioning report

8. The works approval holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 1.

9. The works approval holder must ensure the Environmental Commissioning Report required by condition 8 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including date(s) for commencement of environmental commissioning, timeframes and amount of wastewater processed and discharged or removed from the premises for disposal;

(b) a summary of monitoring results recorded during environmental conditioning in accordance with condition 7;

(c) copies of laboratory reports for effluent monitoring results recorded in accordance with condition 7;

(d) a summary of the environmental performance of each item of infrastructure or equipment as installed, which at minimum includes a comparison of the effluent monitoring results against design specifications listed in condition 1;

(e) a review of the works approval holder's performance and compliance against the conditions of this works approval; and

(f) where the specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Time limited operations phase

Commencement and duration

10. The works approval holder may only commence time limited operations for the infrastructure identified in condition 1 where the Environmental Commissioning Report for that infrastructure as required by condition 8 has been submitted by the works approval holder.

11. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 1:

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 10 for that item of infrastructure; or

(b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986*, if one is granted before the end of the period specified in condition 11(a).

Time limited operations requirements and emission limits

12. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 5.

Table 5: Infrastructure and equipment requirements during time limited operations

Site infrastructure and equipment	Operational requirement	Infrastructure location
WWTP / WWTP expansion	(a) All treated effluent is stored in the treated effluent holding tanks prior to discharge or disposal; (b) Treated effluent that does not meet design specifications listed in condition 1 is to be stored in the treated effluent buffer storage tank prior to: (i) removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; or (ii) re-circulation back through the WWTP; (c) Treated effluent that meets design specifications listed in condition 1 may be disposed of to the TSF4 decant pond only once TSF4 is approved to receive this discharge[1]; (d) Until approval is obtained for disposal of treated effluent to TSF4, treated effluent that meets design specifications listed in condition 1 is to be removed offsite for disposal at premises authorised by the department to accept the waste; (e) Sludge is contained within a sealed sludge tank prior to monthly removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; (f) The sludge tanks are to be inspected daily to ensure there is suitable capacity for storage; (g) Inspections are conducted daily to verify WWTP operation and function, and to ensure that containment infrastructure is maintained and operational; (h) Inspections are conducted daily on the effluent pipeline (when in use) to confirm integrity of pipes and no leaks are present and; (i) In the event of a leak/spill, the source will be isolated, and any contaminated soil remediated or disposed of to an appropriately licensed facility.	As shown in Figure 1 and Figure 2 of Schedule 1

Note 1: Treated effluent disposal into TSF4 Cell 1 and Cell 2 is only authorised under this works approval following separate approval for TSF4 to receive this discharge.

Monitoring during time limited operations

13. The works approval holder must monitor treated effluent during time limited operations in accordance with Table 4 and record the results of monitoring.

14. During time limited operations, the works approval holder must ensure that the emissions from the discharge point listed in Table 6 do not exceed the corresponding limit(s) when monitored in accordance with condition 13.

Table 6: Emission and discharge limits during time limited operations.

	Emission	Discharge point	Limit
1.	Treated wastewater	a) At the outlet of the WWTP , for removal offsite via a licenced waste contractor; or b) TSF4 decant pond (once all relevant approvals have been obtained for TSF4 to receive this discharge[1])	187.5 m^3 per day

Note 1: Treated effluent disposal into TSF4 Cell 1 and Cell 2 is only authorised under this works approval following separate approval for TSF4 to receive this discharge.

Compliance reporting

15. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 30 calendar days before the expiration date of the works approval, whichever is the sooner.

16. The works approval holder must ensure the report required by condition 15 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of wastewater processed and removed from the premises for disposal;

(b) a summary of monitoring results obtained during time limited operations under condition 13.

(c) copies of laboratory reports for effluent monitoring results recorded in accordance with condition 13;

(d) a summary of the environmental performance of all infrastructure as constructed or installed (as applicable), which at minimum includes a comparison of the effluent monitoring results against design specifications listed in condition 1;

(e) review of performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; and

(f) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

17. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

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

(b) the time and date of the complaint;

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

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

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

(a) the works conducted in accordance with condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 12;

(c) monitoring programmes undertaken in accordance with condition(s) 7 and 13; and

(d) complaints received under condition 17.

19. The books specified under condition 18 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 7 have the meanings defined.

Table 7: Definitions

Term	Definition
AS/NZS 5667.1-1998	means Australian Standard/New Zealand Standard 5667.1-1998 *Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.*
AS/NZS 5667.10-1998	means Australian Standard/New Zealand Standard 5667.1-1998 *Water quality – Sampling – Guidance on sampling of waste waters.*
BOD	biochemical oxygen demand.
books	has the same meaning given to that term under the EP Act.
CEO	means 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
cfu	colony forming units.
Controlled Waste Carrier	means a carrier licensed under the Environmental Protection (Controlled Waste) Regulations 2004.
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.
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.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).

Term	Definition
HDPE	High Density Polyethylene.
m^3	cubic metres.
MBR	Membrane Bio-Reactor.
mg/L	milligrams per litre.
MWC	mine water circuit.
NATA	National Association of Testing Authorities.
NATA accreditation	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.
NTU	nephelometric turbidity units.
PACL	poly-aluminium chloride.
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map Figure 1 in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
suitably qualified engineer	means a person who: a) holds a Bachelor's degree recognised by Engineers Australia; and b) has a minimum of five years of experience working in a supervisory role in civil, structural, environmental or wastewater engineering; and c) is employed by an independent third party external to the Works Approval Holder's business; or is otherwise approved in writing by the CEO to act in this capacity.
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
TN	total nitrogen.
TP	total phosphorus.
TSS	total suspended solids.
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this

Term	Definition
	works approval has been granted, as specified at the front of this works approval.
WWTP	wastewater treatment plant.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

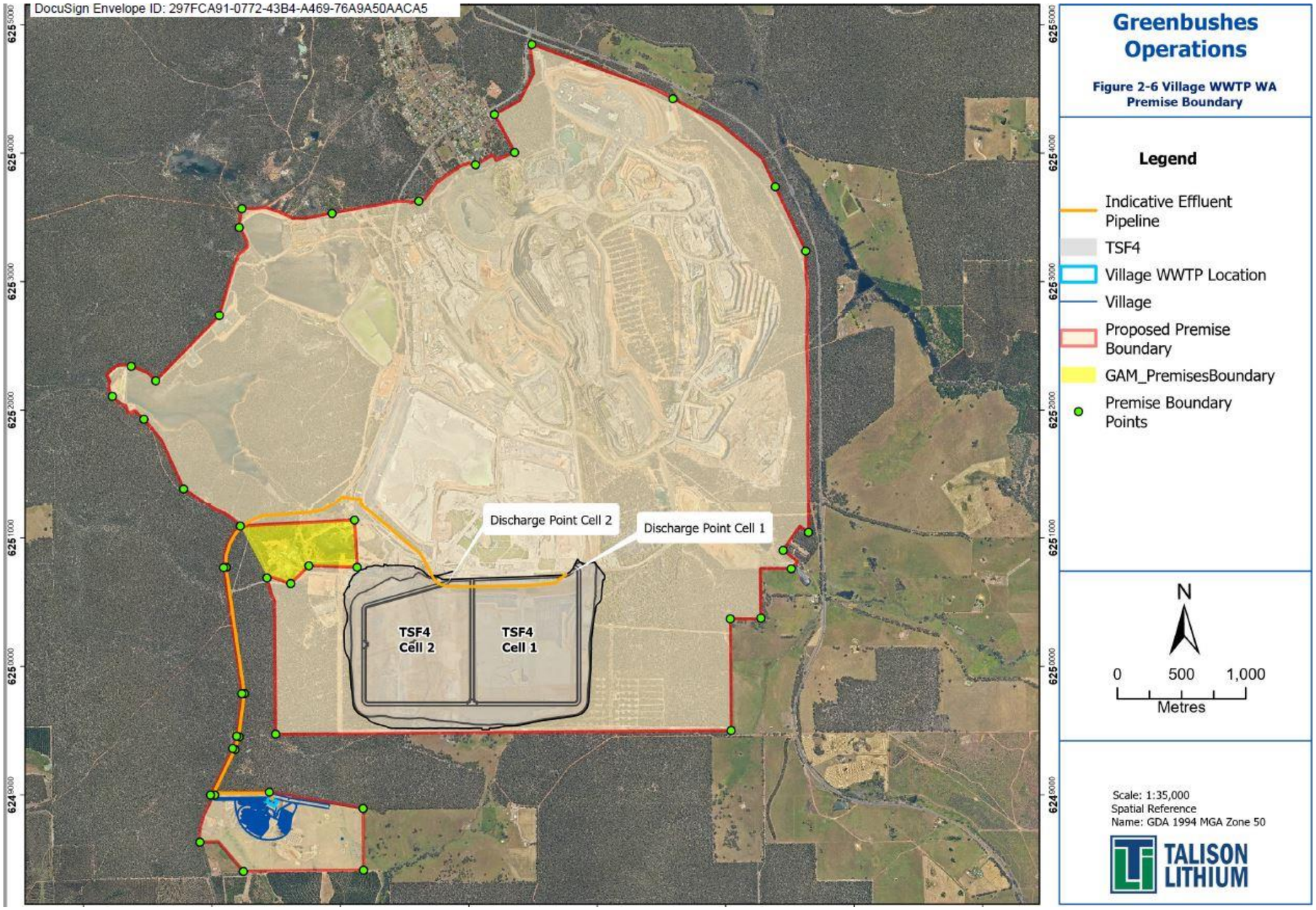

Figure 1: Map of the boundary of the prescribed premises (red line), the indicative effluent pipeline, and indicative discharge points to TSF4.

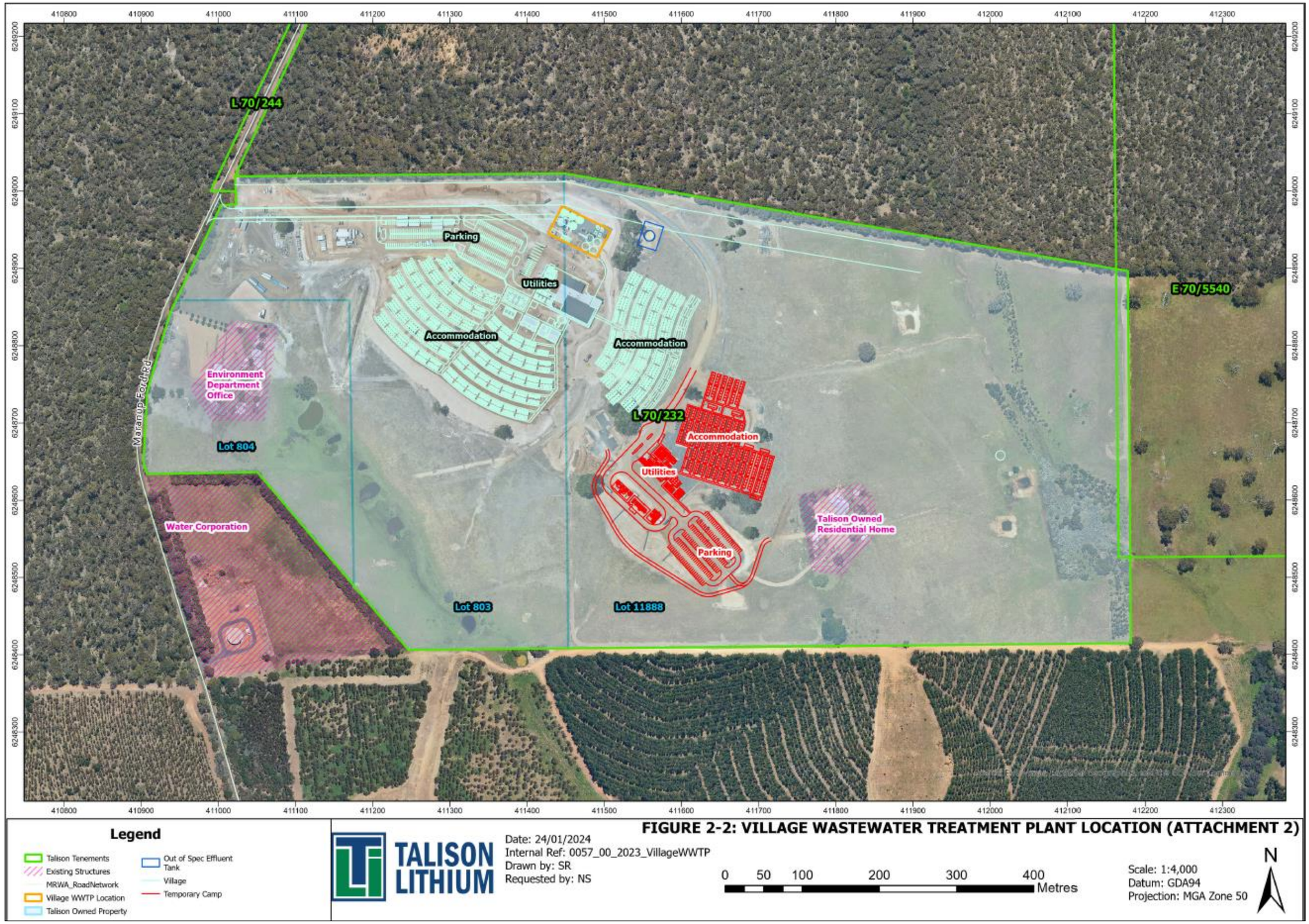

Figure 2: Map of the location of the WWTP

SAMPLE NUMBER	LOCATION
1	MIXED LIQUOR
2	PERMEATE
3	RAS
4	EFFLUENT REUSE
5	EFFLUENT RECIRC

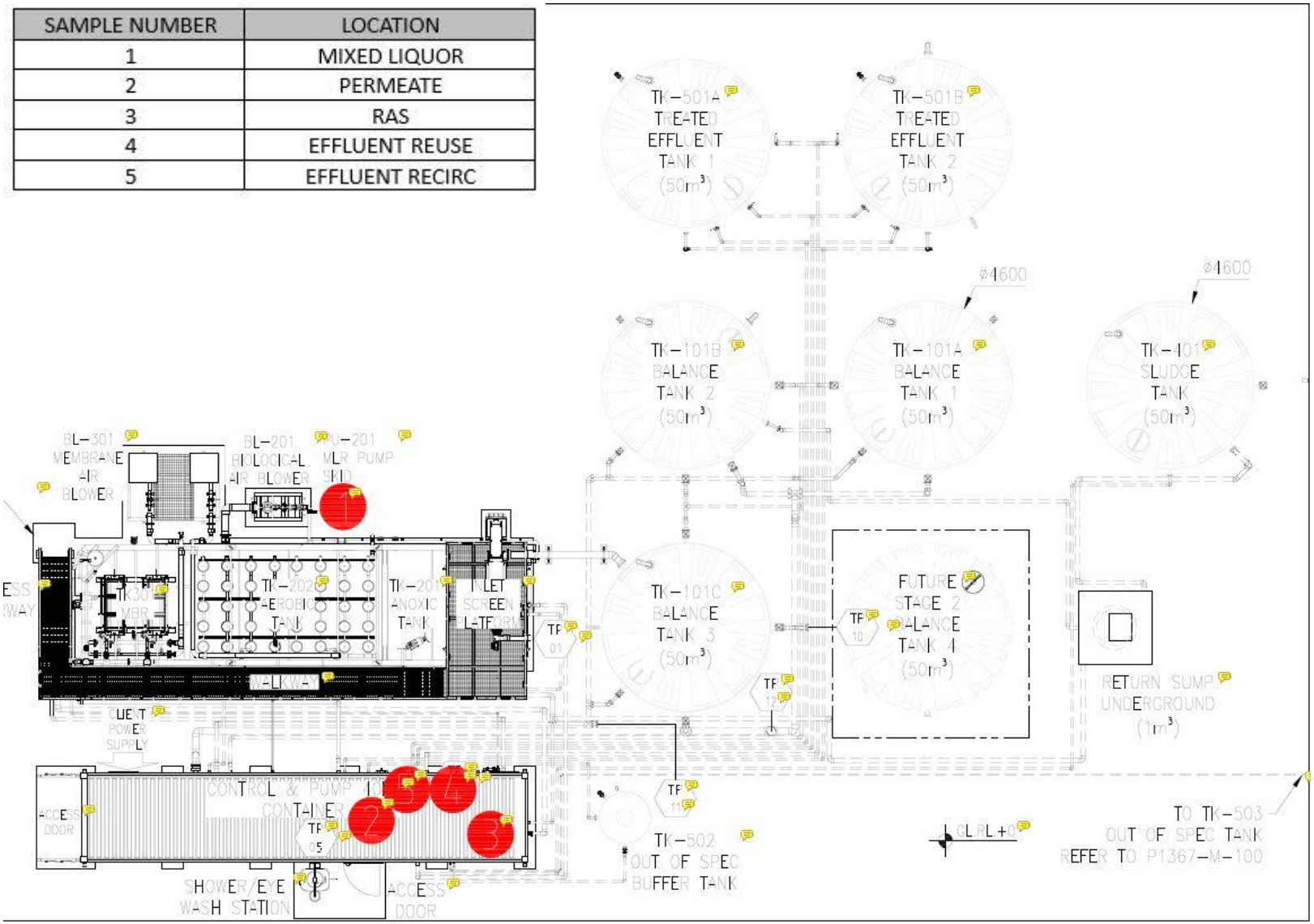

Figure 3: Layout of the WWTP, including sampling locations

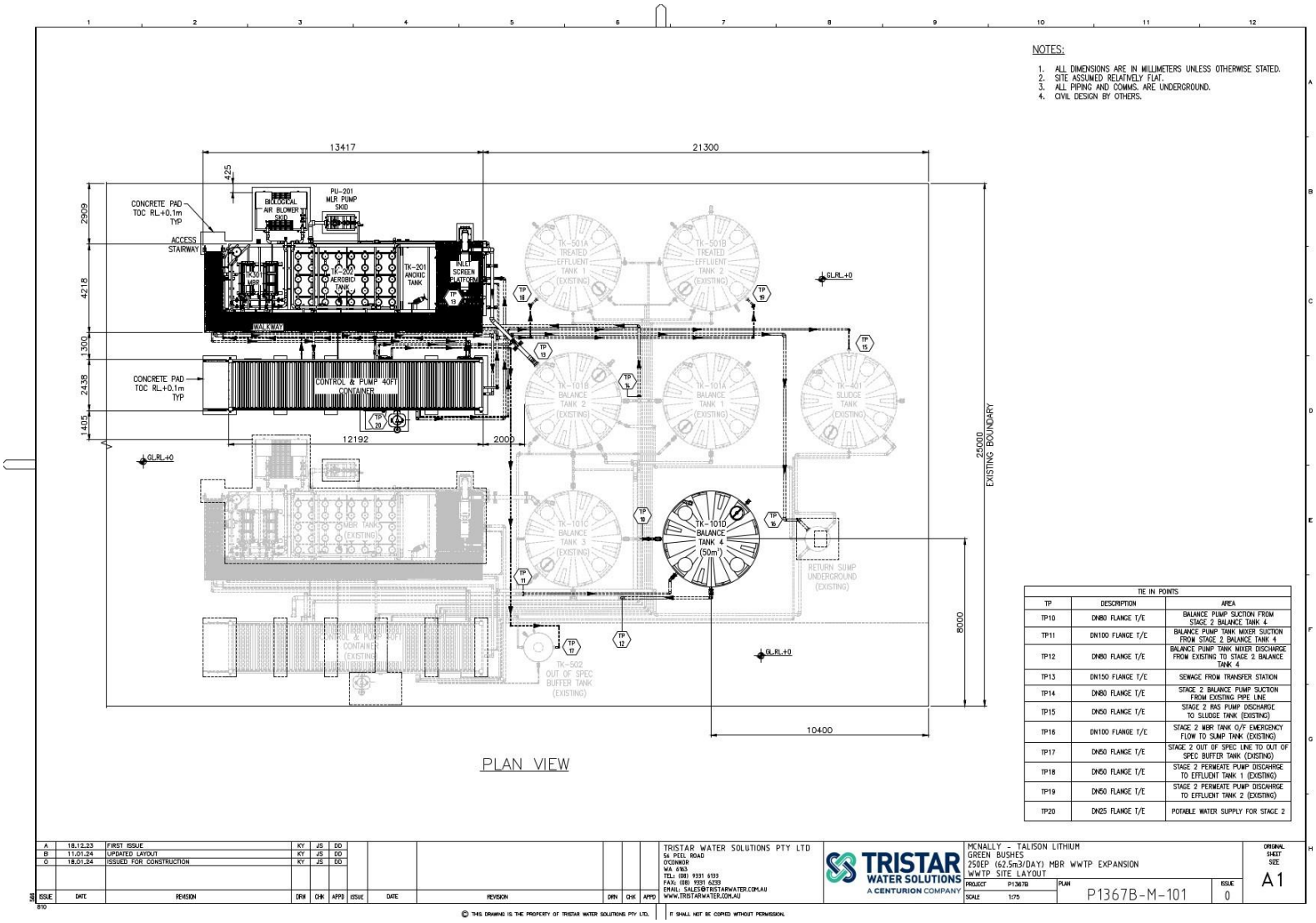

Figure 4: WWTP expansion (black colour lines in design are the WWTP expansion)

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 8.

Table 8: Premises boundary coordinates (GDA2020)

	Easting	Northing	Zone
1.	413491.6	6254845.8	50
2.	414589.8	6254424.0	50
3.	415387.0	6253739.3	50
4.	415623.6	6253239.3	50
5.	415645.0	6251043.5	50
6.	415447.7	6250904.2	50
7.	415511.3	6250760.7	50
8.	415275.2	6250377.7	50
9.	415036.7	6250371.7	50
10.	415043.1	6249502.0	50
11.	411495.5	6249472.3	50
12.	411429.1	6250689.5	50
13.	412131.3	6250772.5	50
14.	412110.7	6251139.1	50
15.	411221.4	6251092.5	50
16.	410779.8	6251389.1	50
17.	410470.4	6251931.5	50
18.	410225.1	6252109.5	50
19.	410372.2	6252343.0	50
20.	410563.1	6252230.5	50
21.	411058.6	6252738.2	50
22.	411213.3	6253421.8	50
23.	411233.9	6253569.0	50
24.	411936.3	6253531.8	50
25.	412611.3	6253627.5	50
26.	413053.4	6253910.2	50
27.	413357.5	6254005.1	50
28.	413200.0	6254301.2	50
29.	411212.8	6249453.6	50
30.	411180.7	6249355.4	50
31.	411022.5	6249000.0	50
32.	410989.9	6249000.0	50
33.	411161.9	6249362.8	50

	Easting	Northing	Zone
34.	411193.1	6249458.0	50
35.	411253.5	6249789.3	50
36.	411233.2	6249789.0	50
37.	411111.4	6250771.2	50
38.	411091.4	6250770.0	50
39.	411447.5	6249023.0	50
40.	412177.3	6248896.4	50
41.	412181.1	6248415.7	50
42.	411246.2	6248406.3	50
43.	410907.3	6248633.8	50
44.	411755.3	6250783.8	50
45.	411613.7	6250645.7	50