Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6555/2021/1
Works approval holder	Pilbara Iron Pty Ltd
ACN	107 216 535
Registered business address	Level 18, Central Park 152-158 St George Terrace PERTH WA 6000
DWER file number	DER2021/000245
Duration	05/06/2022 to 06/6/2027
Date of issue	05/06/2022
Premises details	Ti Tree Rail Camp Wastewater Treatment Plant WEST PILBARA Legal description - Miscellaneous Licence L47/47 As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, ***Environmental Protection Regulations 1987***)	**Assessed design capacity**
Category 85: Sewage facility	97 cubic metres per day
Assessed activities directly related to the above categories	
Construction of the emergency overflow pond and the sludge drying area.	

This works approval is granted to the works approval holder, subject to the attached conditions, on 06 June 2022, by:

Steve Checker
Digitally signed by Steve Checker
Date: 2022.06.05 12:02:52 +08'00'

STEPHEN CHECKER
MANAGER WASTE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
03/06/2022	W6555/2021/1	This works approval

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
Prescribed Activity Category 85		
Modified Ludzack-Ettinger (MLE) Wastewater treatment plant (WWTP) (or equivalent)	(a) Constructed as per the specifications in Figure 2 of Schedule 1; (b) Comprising the following: • Raked Screen • Balance Tank • Anoxic Tank • Aeration Tank • Clarifier • Treated effluent tank • Spray field irrigation (c) Stormwater to be prevented from entering the sewage treatment system and storage infrastructure; (d) WWTP to be located on a compacted earthen pad within an earthen bund connected to an overflow pond with a minimum capacity of one day hydraulic loading. (e) All sewage storage and treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks and defects; (f) WWTP must be able to treat no more than 97 m^3 of sewage waste per day; (g) WWTP designed to treat sewage to the	As specified in Figure 1 and 2 of Schedule 1.

Infrastructure	Design and construction / installation requirements	Infrastructure location
	following discharge criteria : • pH 6.5 – 8.5 • BOD < 10 mg/L • TSS < 10 mg/L • TN < 13 mg/L • TP < 1.5 mg/L • E. coli <10 cfu/100mL • Residual chlorine < 2mg/L (h) Final treated effluent irrigation storage tank must be capable of storing all wastewater not able to be discharged to the spray irrigation field: (i) A volumetric flow meter must be installed on discharge outlet pipe to monitor volumes discharged to irrigation spray field; (j) Alarm system installed to notify the operator of: (i) Pump faults; (ii) High tank levels; and (iii) Tank overflows. (k) Storage of hydrocarbons will be managed in accordance Australian Standard AS1940 – Storage and handling of flammable and combustible liquids; and (l) Construction and time limited operations must adhere to the following WQPNs • WQPN 6: Vegetation buffers to sensitive water resources; • WQPN 10: Contaminant spills – emergency response; • WQPN 84: Rehabilitation of disturbed land in PDWSA's; • WQPN 22: Irrigation with nutrient rich irrigation; • WQPN 56: Tanks for fuel and chemical storage near sensitive water resources; and • WQPN 65: Toxic and hazardous substances	

Infrastructure	Design and construction / installation requirements	Infrastructure location
Irrigation spray field	(a) Area of spray field must be at least 5.5 ha and adequately bunded to ensure no interaction with surface water; (b) Sprinklers must be positioned to ensure even distribution of wastewater; (c) pipelines must be impermeable and free of leaks; and (d) Fence with visible safety signage installed to deter access.	As specified in Figure 1 and 3 of Schedule 1.
Associated activities		
Emergency overflow pond	Must be constructed: (a) On a flat area not subject to flooding or surface water infiltration; (b) to be free of leaks and defects and lined with in-situ soils/strata with a permeability of $1x10^{-9}$ m/s or less (or equivalent); and (c) With a minimum storage capacity of one day hydraulic loading including capacity to store a 24-hour duration, 1 in 20-year ARI critical rainfall event without overflow.	Not specified.
Sludge drying area	Must be constructed: (a) On a flat area not subject to flooding or surface water infiltration; (d) Incorporating an impervious base with adequate size external and internal bund walls, free of leaks and defects, constructed to a permeability of 1×10^{-9} m/s or less (or equivalent);	Not specified.

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(b), must include as a minimum the following:

(a) certification by a qualified, competent Civil or Structural Engineer that the items of infrastructure or component(s) thereof, 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.

Time limited operations phase

Commencement and duration

4. The works approval holder may only commence time limited operations including environmental commissioning for an item of infrastructure identified in condition 1 where the Environmental Compliance Report as required by condition 2(b) has been submitted by the works approval holder for that item of infrastructure.

5. The works approval holder may conduct time limited operations including environmental commissioning for an item of infrastructure specified in condition 6 (as applicable):

(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* and only where this occurs prior to the time period specified in sub provision (a).

Time limited operations including commissioning requirements and emission limits

6. 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 2: Infrastructure and equipment requirements during time limited operations

Site infrastructure and equipment	Operational requirement	Infrastructure location
Prescribed Activity Category 85		
WWTP	(a) WWTP designed to treat sewage to the following discharge criteria: i. BOD - <10 mg/L ii. TSS - <10 mg/L iii. TN - <13 mg/L iv. TP - <1.5 mg/L v. pH - 6.8-8.5 vi. *E.coli* - <10 coliform forming units per 100 mL (cfu/100mL) (b) Flow meters must be maintained	As specified in Figure 1 of Schedule 1.

Site infrastructure and equipment	Operational requirement	Infrastructure location
	on the WWTP inlet and outlet to the irrigation spray field; (c) Treated effluent will not be disposed of unless the measured parameters comply with the expected wastewater quality as required above and shown in Table 1; (d) Spills of wastewater or chemicals outside of a vessel / container must be cleaned up immediately; (e) Storage of hydrocarbons will be managed in accordance Australian Standard AS1940 – Storage and handling of flammable and combustible liquids; and (f) Must adhere to the following WQPNs • WQPN 6: Vegetation buffers to sensitive water resources; • WQPN 10: Contaminant spills – emergency response; • WQPN 84: Rehabilitation of disturbed land in PDWSA's; • WQPN 22: Irrigation with nutrient rich irrigation; • WQPN 56: Tanks for fuel and chemical storage near sensitive water resources; and • WQPN 65: Toxic and hazardous substances	
Irrigation spray field	(a) Sprinkler system designed with the equivalent of 40 full sprinklers spraying over a 30m diameter (b) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation spray field; (c) Disposal of treated effluent shall not commence until sampling confirms that the measured parameters comply with the expected wastewater quality as required above and shown in	As specified in Figure 1 of Schedule 1.

Site infrastructure and equipment	Operational requirement	Infrastructure location
	Table 1; and (d) No treated effluent is permitted to enter any watercourse shown in Figure 1, Schedule 1. (e) Must ensure that nutrient loading from irrigation does not exceed 1.261 kg/day for Total Nitrogen and 0.1455 kg/day for Total Phosphorous averaged over the course of a month.	
Associated activities		
Emergency overflow pond for unplanned discharges	(a) A 300mm freeboard level is always maintained within the overflow pond.	Not specified.
Sludge drying bed	(a) Ensure one geobag is in operation at any time; (b) Any water that seeps from the geobag is returned back to the anoxic tank for reprocessing; and (c) Sludge must be dried and contained within the geobag for several months prior to removal by a licensed waste carried for disposal to an appropriately authorised facility.	Not specified.

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

Table 3: Authorised discharge points

Emission	Discharge point	Discharge point location
Treated effluent	Sprinklers within the irrigation spray field.	As specified in Figure 1 of Schedule 1.

Monitoring during time limited operations

8. The works approval holder must monitor emissions during time limited operations in accordance with Table 7.

Table 4: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit
Irrigation spray filed	WWTP outlet	E. coli	Fortnightly	Spot sample	cfu/100mL
		Total coliforms			
		BOD_5			mg/L
		TSS			
		Total N			
		Total P			
		Cumulative flow volume	Continuous	N/A	m^3
		pH[1]	Daily or continuous online		pH units
		Residual chlorine [1]			mg/L

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

9. For the monitoring activity required by condition 8, the works approval holder must:

(a) record the results;

(b) handle and preserve all water samples collected during the monitoring of the WWTP in accordance with AS/NZS 5667.1:1998; and

(c) have analysis conducted by a laboratory with current National Association of Testing Authorities (NATA) accreditation for the parameters specified

10. 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.

11. The works approval holder must ensure the report required by condition 10 includes the following:

(a) a summary of the time limited operations, including commissioning activities undertaken, timeframes and amount of waste and effluent processed;

(b) a summary of emission and discharge monitoring results obtained under condition 8;

(c) a summary of the environmental performance of all infrastructure as constructed or installed;

(d) a review of performance and compliance against the conditions of the works approval; and

(e) 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

12. 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.

13. 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) monitoring programmes undertaken in accordance with condition 8; and

(c) complaints received under condition 12.

14. The books specified under condition 13 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 5 have the meanings defined.

Table 5: Definitions

Term	Definition
ARI	Means the average or expected value of the periods between exceedances of a given rainfall total accumulated over a given duration.
AS/NZS5667.1:1998	means the 'Australian Standard AS/NZS 5667.1-1998 Water Quality - Sampling - Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples', as amended from time to time.
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
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.
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 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).
premises	the premises to which this works approval applies, as specified at the front of this works approval and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.

Term	Definition
prescribed premises	has the same meaning given to that term under the EP Act.
Qualified, Competent Civil or Structural 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 or structural 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.
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.
WQPN	The Department of Water publishes water quality protection notes (WQPNs) to present considered views on water issues, catchment land use and best environmental management practice. They offer solutions to manage contamination risks to water resources. WQPNs are neither policy documents nor regulatory instruments.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Premises Maps

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

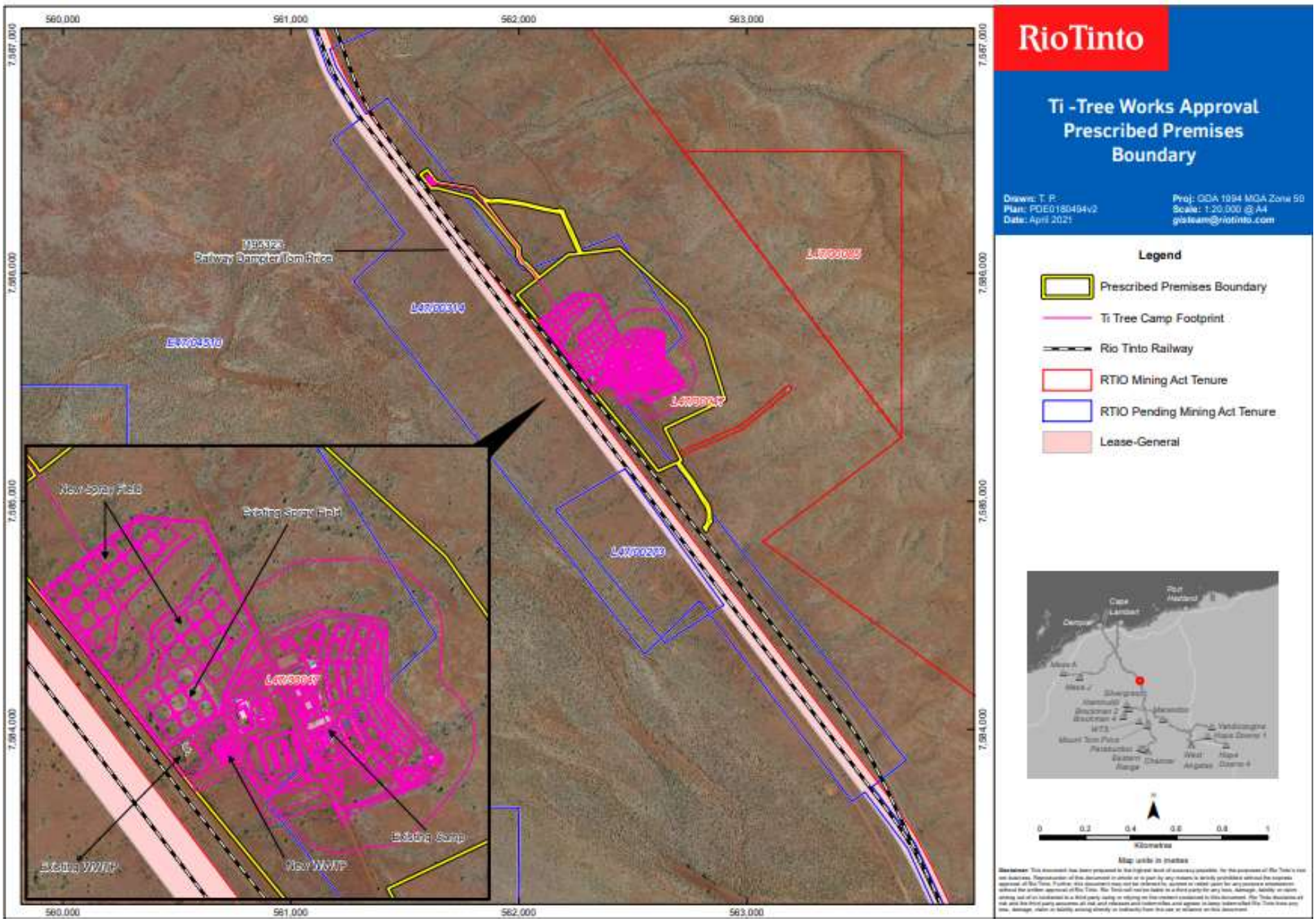
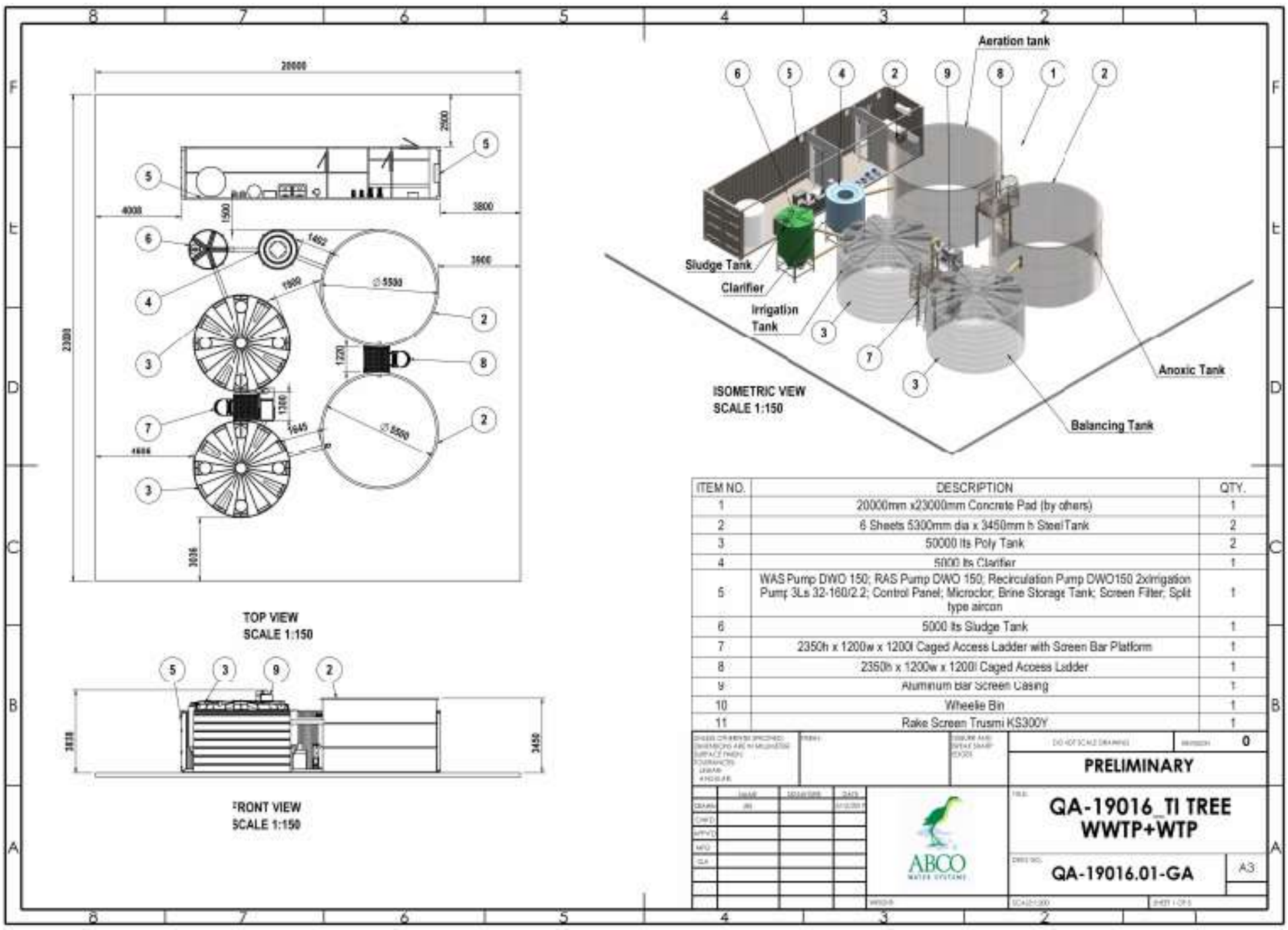


Figure 1: Boundary and overview of the prescribed premises (yellow line)

Figure provided by the Applicant



ITEM NO.	DESCRIPTION	QTY.
1	20000mm x23000mm Concrete Pad (by others)	1
2	6 Sheets 5300mm dia x 3450mm h SteelTank	2
3	50000 lts Poly Tank	2
4	5000 lts Clarifier	1
5	WAS Pump DWO 150; RAS Pump DWO 150; Recirculation Pump DWO150 2xIrrigation Pump 3Ls 32-160/2.2; Control Panel; Microclor; Brine Storage Tank; Screen Filter; Split type aircon	1
6	5000 lts Sludge Tank	1
7	2350h x 1200w x 1200l Caged Access Ladder with Screen Bar Platform	1
8	2350h x 1200w x 1200l Caged Access Ladder	1
9	Aluminum Bar Screen Casing	1
10	Wheelie Bin	1
11	Rake Screen Trusmi KS300Y	1

Figure 2: Wastewater treatment plant schematics

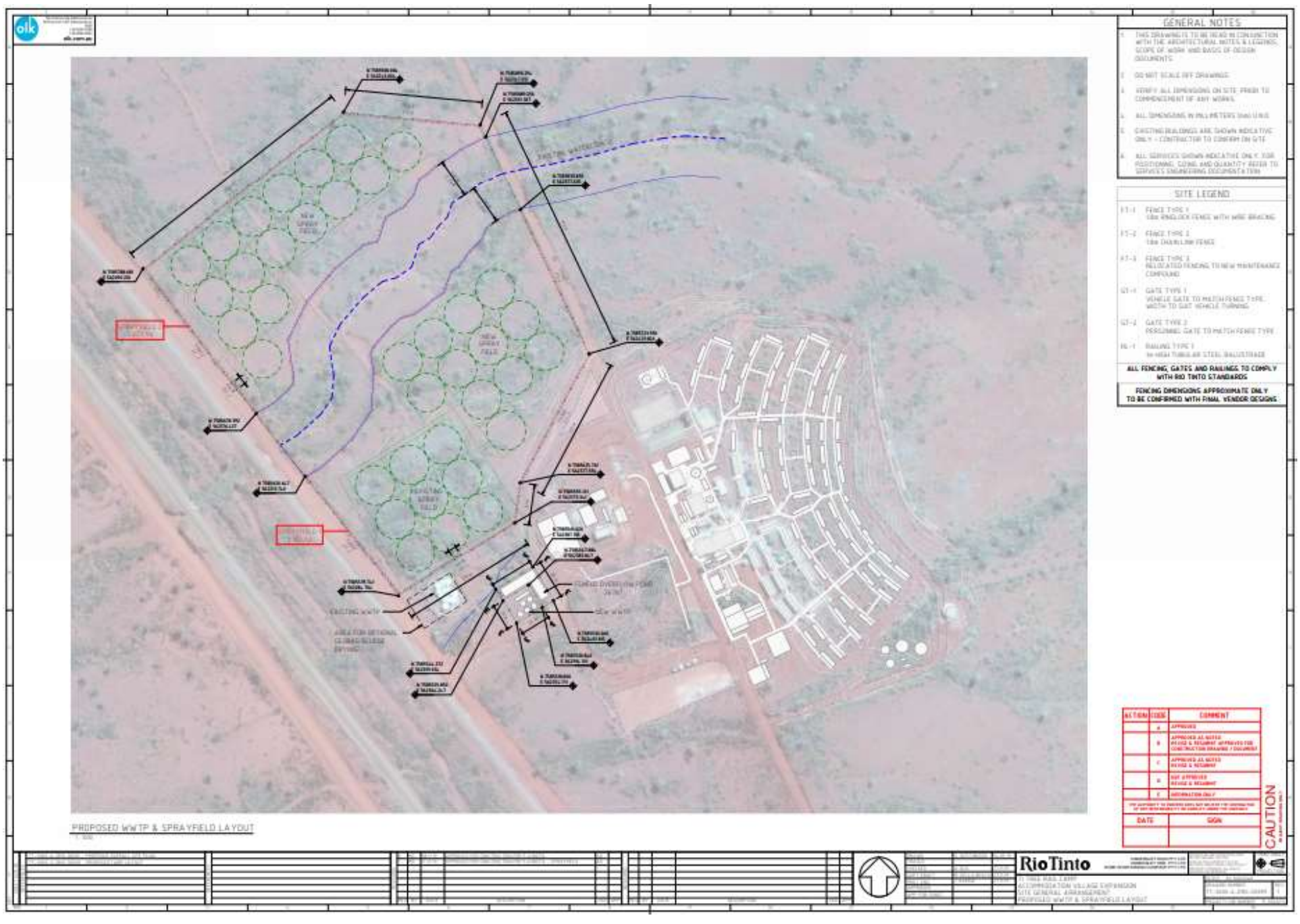


Figure 3: Existing and proposed spray field

Schedule 2: Premises boundary

The premises boundary is defined by the coordinates in Table 6.

Table 6: Premises boundary coordinates

Easting	Northing
717148.0262	7505934.18
714549.0598	7500559.594
712352.1607	7501564.589
709868.2485	7502700.778
707188.6212	7503926.459
704709.335	7505060.568
702434.1087	7506167.532
702520.6405	7506346.926
702360.3166	7506424.33
703257.7366	7508285.121
704220.1008	7510279.445
704840.7078	7511565.764
706743.7415	7510695.121
707331.7609	7511974.37
711876.9197	7509986.895
712302.6032	7510905.808
715972.8944	7508918.662
716161.213	7508793.288
716429.8956	7508564.644
716532.9274	7508485.101
715673.4301	7506608.923
717148.0262	7505934.18