Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6902/2024/1
Works approval holder	Pilgangoora Operations Pty Ltd
ACN	616 560 395
Registered business address	Level 2, 146 Colin Street WEST PERTH WA 6005
DWER file number	DER2023/000562
Duration	17/09/2024 to 16/09/2029
Date of issue	17 September 2024
Premises details	Tambrah Accommodation Camp Legal description - Part of Miscellaneous Licence L45/409 As defined by the coordinates in Schedule 2

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.	240 m^3/day of treated effluent, plus 140 m^3/day of RO reject

This works approval is granted to the works approval holder, subject to the attached conditions, on 17 September 2024, by:

Digitally signed by Tanya Johnston
Date: 2024.09.17 15:19:45 +08'00'

Tanya Johnston
A/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
17/09/2024	W6902/2024/1	Works approval granted.

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; and

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1	Wastewater treatment plant (WWTP) - Sequencing Batch Reactor plant	The wastewater treatment system must be designed and constructed as to meet the following specifications: (a) Be able to receive and treat a wastewater inflow of up to 240 m^3/day. (b) Must be installed on concrete hardstand. (c) Must comprise of the following equipment: - Influent screen - Balance tank - Anoxic tank - Aeration tank - Effluent tank - Brine tank - Sludge storage tank - Washdown tank - 2 x Aerators - Precipitant dosing system - Chlorine dosing system - Dewatering sludge press - Dewatering polymer dosing system (d) All tanks must be sealed. (e) WWTP must be incorporated with an alarms system, interlocks and shut off pumps to warn of high-water levels in the tank or if a pump failure occurs. (f) Flow meters are required to be installed on the inlet and outlet side of the plant to record both inflows from the WWTPs.	Schedule 1 Figure 2

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		(g) Be able to treat sewage to the following output emission standards: (i) Biological Oxygen Demand (BOD) <10 mg/L (ii) Total Suspended Solid (TSS) <30 mg/L (iii) Total Nitrogen <20 mg/L (iv) Total Phosphorus <3.5 mg/L (v) E.coli <1,000 cfu/100 mL (vi) Residual free chlorine 0.2 – 2.0 mg/L (vii) pH 6.5 – 8.5 pH units	
2	Reverse Osmosis (RO) Plant	Plant and associated pipelines to be free of leaks and defects. Connected to a volumetric flow meter to monitor the daily volume of RO brines delivered to the WWTP effluent tanks.	Schedule 1 Figure 4
3	Irrigation field	The spray field must be designed and constructed as to meet the following specifications: (a) Minimum size of 9.6 ha + 5 m spray drift buffer. (b) above ground sprinklers. (c) Ensure no ponding or pooling of treated wastewater occurs. (d) Ensure that no treated effluent is discharged from the spray field. (e) Fenced with a vehicle access gate. (f) Warning signage fixed to all sides of the fence advising the area is used for the disposal of treated wastewater.	Schedule 1 Figure 2
4	All infrastructure and equipment	(a) All sewage storage and treatment tanks, vessels, transfer pipelines and conveyance infrastructure are to be constructed of impervious material and free of leaks and defects. (b) All sewage conveyance, storage and treatment infrastructure must be designed and constructed to ensure that stormwater does not enter the sewage treatment system and treated wastewater storage infrastructure. (c) Chemicals to be stored in accordance with Australian Standards AS1940-2004, AS3780-2008 and/or AS3833-2007 dependent on the type of chemical to be stored.	Schedule 1 Figure 2

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 civil 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.

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 5 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
Wastewater treatment plant	(a) WWTP to be free of leaks and/or defects; (b) Flow meters are maintained on the WWTP inlet and outlet to the irrigation area; (c) Sludge is contained within sealed sludge tanks prior to removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; and (d) All spills of wastewater or chemicals outside of a vessel / container are to be cleaned up immediately.	For a period not exceeding 90 calendar days in aggregate from the date the Environmental Compliance Report was submitted to the CEO.
Irrigation field	(a) Not more than 380 m^3 per day of combined RO concentrate and treated effluent to be applied to the designated irrigation area;	

	(b) Maintained and operated in accordance with the requirements as specified in condition 1 (c) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation spray field; and (d) No treated effluent is permitted to be discharged outside of the irrigation area identified in Schedule 1.	

6. During environmental commissioning, 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 commissioning

Emission	Discharge point	Discharge point location
Blended effluent (treated effluent + RO reject)	Irrigation spray field	Irrigation field as shown in Schedule 1 Figure 2

Monitoring during environmental commissioning

7. The works approval holder must monitor emissions during environmental commissioning in accordance with Table 4.

Table 4: Emissions and discharge monitoring during environmental commissioning

Discharge point	Monitoring location	parameter	Frequency	Averaging period	unit	Method
Irrigation field as depicted in Schedule 1 Figure 2	Flow meter	Volume discharged to irrigation spray field	Continuous	Cumulative daily	kL/day	N/A
	WWTP outlet	*E. coli*	Weekly	Spot sample	cfu/ 100mL	AS/NZS 5667.10
		Biological Oxygen Demand			mg/L	
		Total Suspended Solid				
		Total Nitrogen				
		Total Phosphorus				
		Total dissolved solids				

		Residual free chlorine[1]	Continuous	N/A	mg/L	
		pH[1]		N/A	pH units	

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

8. The works approval holder must ensure that all monitoring equipment used to comply with condition 7 is calibrated in accordance with the manufacturer's specifications.

9. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for relevant parameters, unless otherwise specified in Table 4.

10. The works approval holder must record the results of all monitoring activity required by condition 7.

Environmental commissioning report

11. 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 2.

12. The works approval holder must ensure the Environmental Commissioning Report required by condition 11 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of wastewater processed;

(b) a summary of the treated effluent monitoring results recorded in accordance with condition 7;

(c) copies of laboratory reports for the monitoring results recorded in accordance with condition 9;

(d) a summary of the environmental performance of each item of infrastructure or equipment as installed, which at minimum includes records detailing the:

(i) a comparison of the treated effluent monitoring results against discharge limits specified in condition 0; and

(ii) assessment of the irrigation field performance against operational requirements in condition 5.

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

(f) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration

13. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 15 where the Environmental Commissioning Report for that item of infrastructure as required by condition 11 has been submitted by the works approval holder.

14. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 15 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 13 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 0(a).

Time limited operations requirements and emission limits

15. 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
1	Wastewater treatment plant	(a) WWTP to be free of leaks and/or defects; (b) Flow meters are maintained on the WWTP inlet and outlet to the irrigation area; (c) Sludge is contained within sealed sludge tanks prior to removal by a licensed Controlled Waste Carrier for disposal to a premises authorised by the department to accept the waste; and (d) All spills of wastewater or chemicals outside of a vessel / container are to be cleaned up immediately.	As shown in Schedule 1 Figure 2
2	Irrigation field	(a) Not more than 380 m^3 per day of combined RO concentrate and treated effluent to be applied to the designated irrigation area; (b) Maintained and operated in accordance with the requirements as specified in condition 1; (c) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation spray field; and (d) No treated effluent is permitted to be discharged outside of the irrigation area identified in Schedule 1.	As shown in Schedule 1 Figure 2

3	Reverse Osmosis concentrate pipeline	(a) No more than 140 m^3/day of RO Reject is supplied to the WWTP.	As shown in Schedule 1 Figure 2

16. 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 6: Authorised discharge points

Emission	Discharge point	Discharge point location
Treated effluent including reverse osmosis concentrate	Sprinklers within the irrigation field	Irrigation field as shown in Schedule 1 Figure 2

17. During time limited operations, the works approval holder must ensure that the emissions from the discharge point listed in Table 7 do not exceed the corresponding limit(s) when monitored in accordance with condition 0.

Table 7: Emission and discharge limits during the time limited operation

Discharge point	Parameter	Limit
Irrigation field	Biochemical oxygen demand	10 mg/L
	Total dissolved solids	2170 mg/L
	Total suspended solid	30 mg/L
	pH	6.5 to 8.5
	Total nitrogen	20 mg/L
	Total phosphorous	3.5 mg/L
	E. Coli	1000 cfu/100mL
	Residual free chlorine	0.2 to 2.0 mg/L

Monitoring during time limited operations

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

Table 8: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	parameter	Frequency	Averaging period	unit	Method
Irrigation field	Flow meter	volume	Continuous	Monthly cumulative	kL/day	Flow meter device
	WWTP outlet	*E. coli*	Monthly	Spot sample	cfu/ 100mL	AS/NZS 5667.1
		Biological Oxygen Demand			mg/L	AS/NZS 5667.10

		Total Suspended Solid				
		Total Nitrogen				
		Total Phosphorus				
		Total Dissolved Solids				
		Residual free chlorine [1]	Continuous	N/A	mg/L	
		pH[1]		N/A	pH units	

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

19. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for relevant parameters, unless otherwise specified in Table 8.

20. The works approval holder must record the results of all monitoring activity required by condition 18.

Compliance reporting

20. 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.

21. The works approval holder must ensure the report required by condition 20 includes the following:

(a). a summary of the time limited operations, including timeframes and amount of wastewater processed;

(b). a summary of monitoring parameter results obtained during time limited operations under condition 18.

(c). copies of laboratory reports for treated effluent monitoring results recorded in accordance with condition19

(d). a summary of the environmental performance of each item of infrastructure or equipment as installed, which at minimum includes records detailing the:

(i) a comparison of the treated effluent monitoring results against discharge limits specified in condition 0; and

(ii) assessment of the irrigation field performance against operational requirements in condition 15.

(e). a 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)

22. 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.

23. 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 5 and 15;

(c) monitoring programmes undertaken in accordance with conditions 7 and 18; and

(d) complaints received under condition 22.

24. The books specified under condition 23 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 9 have the meanings defined.

Table 9: Definitions

Term	Definition
annual period	a 12 month period commencing from 1 January until 31 December of the same year.
AS 1940	means Australian Standard AS 1940-2004 *The storage and handling of flammable and combustible liquids.*
AS3780-2008	means Australian Standard AS 3780-2008 *The storage and handling of corrosive substances*
AS3833-2007	means Australian Standard AS3833-2007 *The storage and handling of mixed classes of dangerous goods, in packages and intermediate bulk containers*
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters.*
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/100 mL	means colony forming units per 100 millilitres.
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.

Term	Definition
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.
prescribed premises	has the same meaning given to that term under the EP Act.
suitably qualified engineer	means a person who: (a) holds a Bachelor of Engineering degree recognised by the Institute of Engineers; and (b) has a minimum of five years of experience working in the field of engineering; 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.
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: Maps

Premises map

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

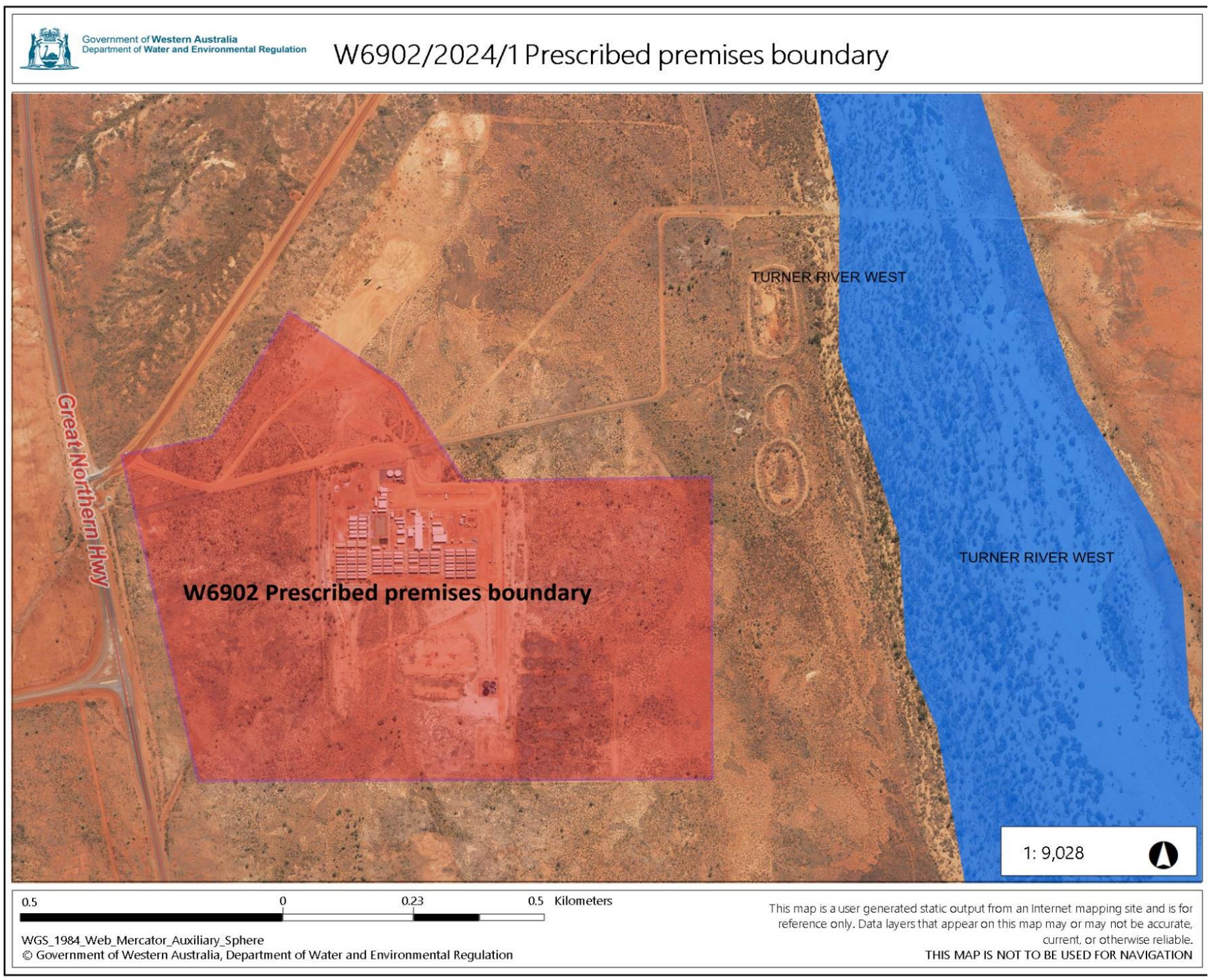

Figure 1: Map of the boundary of the prescribed premise

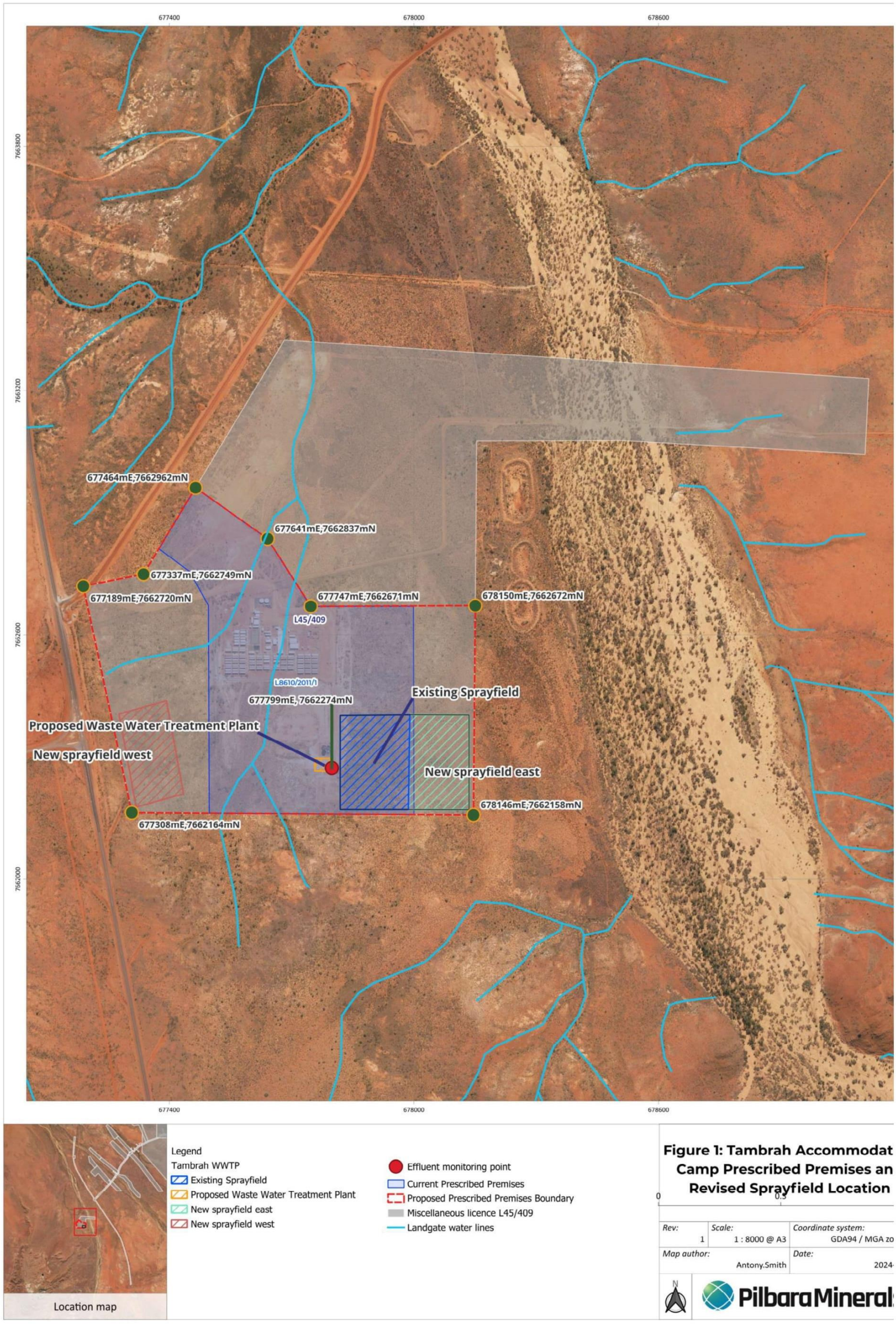

Figure 2: Proposed locations of WWTP and spray field

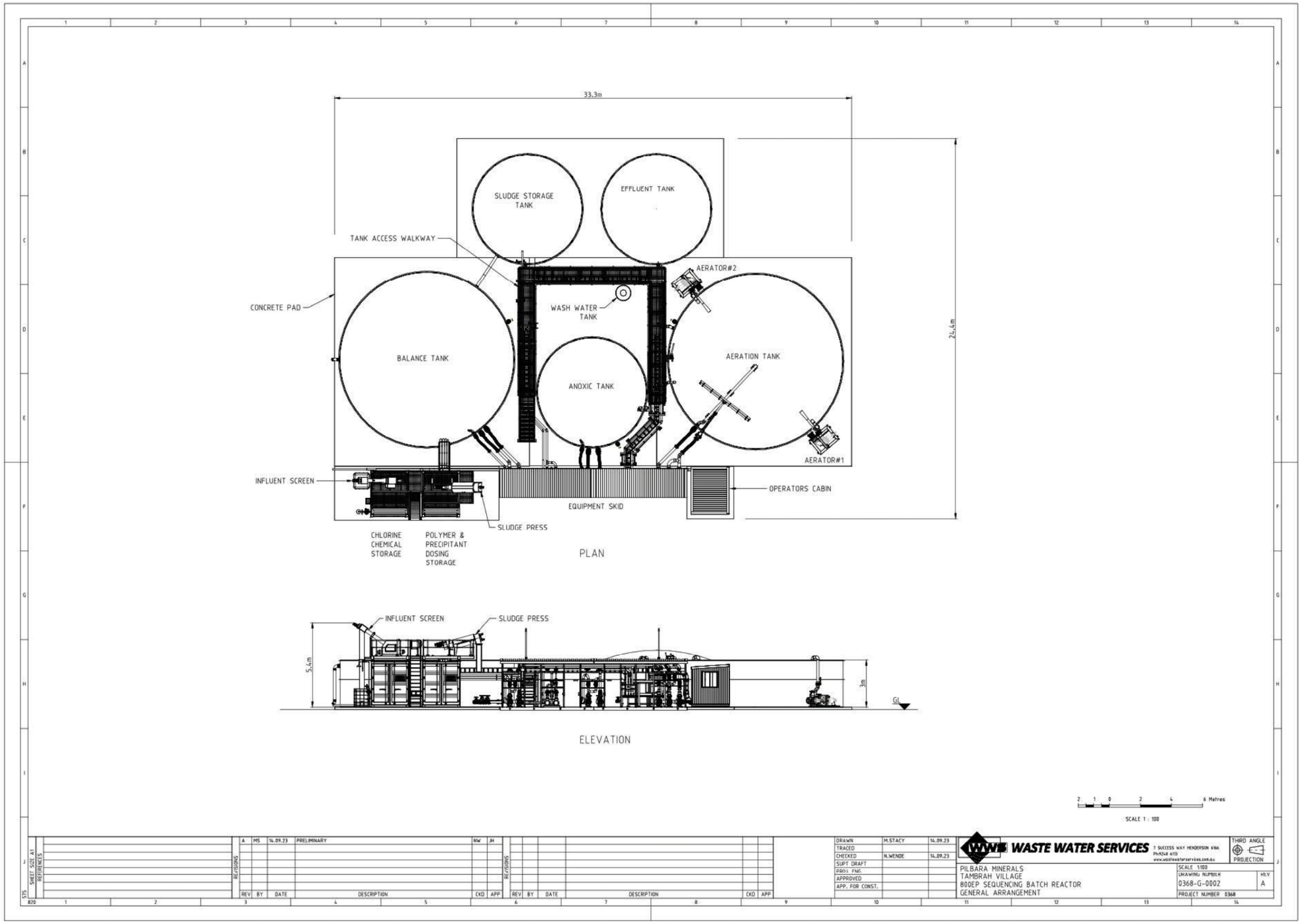

Figure 3: Sequencing Batch Reactor WWTP general arrangement

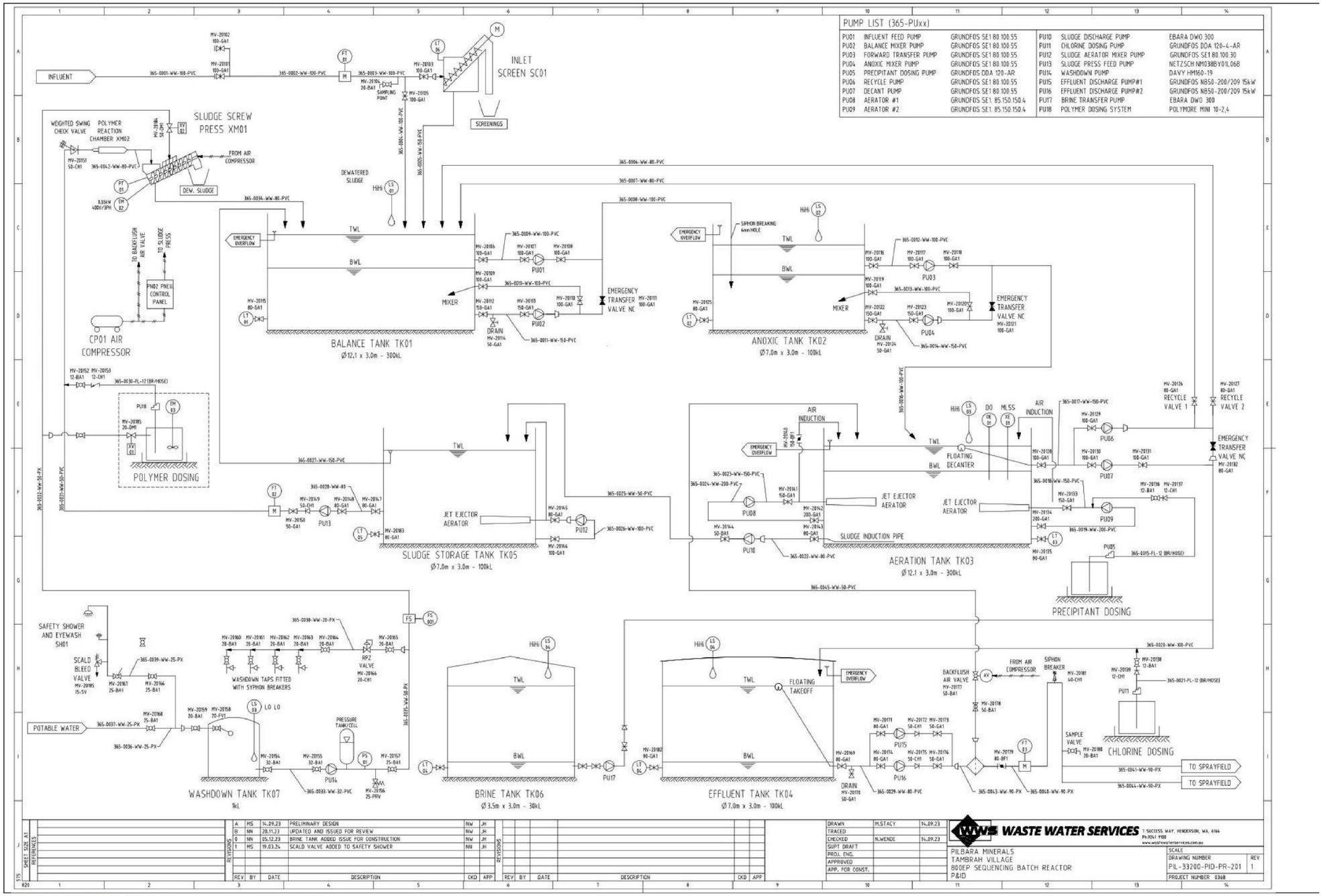

Figure 4: Sequencing batch reactor WWTP process diagram

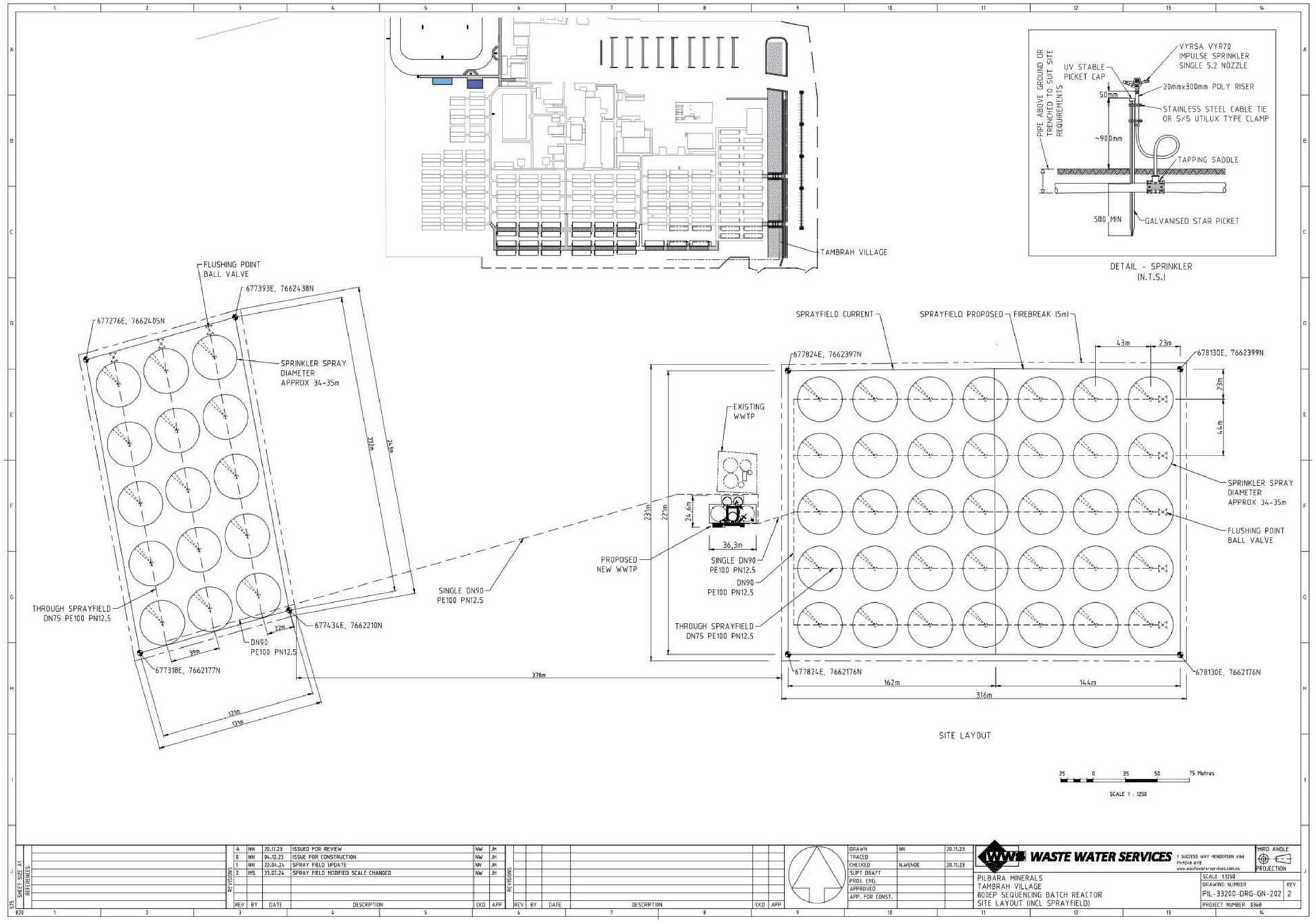

Figure 5: Irrigation spray field layout

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed inTable 10.

Table 10: Premises boundary coordinates (GDA2020)

	Easting	Northing	Zone
1.	677463.0000	7662961.0000	50
2.	677641.0000	7662837.0000	50
3.	677747.0000	7662671.0000	50
4.	678150.0000	7662672.0000	50
5.	678146.0000	7662158.0000	50
6.	677308.0000	7662164.0000	50
7.	677189.0000	7662720.0000	50
8.	677337.0000	7662749.0000	50