Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6977/2024/1
Works approval holder	Iluka Eneabba Pty Ltd
ACN	654 432 541
Registered business address	Level 17 240 St Georges Terrace PERTH WA 6000
DWER file number	DER2024/000483~1
Duration	02/05/2025 to 01/05/2028
Date of issue	2/05/2025
Premises details	Iluka Eneabba Mine Site (Accommodation Village) Lot 10 Brand Highway ENEABBA 6518 Legal description – Mining Lease M267SA Lot 10 On Plan 18828 Certificate of Title Volume 1943 Folio 634 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.	100 m^3 per day

This works approval is granted to the works approval holder, subject to the attached conditions, on 2 May 2025, by:

G. Dorman

Digitally signed by Gemma Dorman
Date: 2025.05.02 17:19:22 +08'00'

A/MANAGER, WASTE INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
2/05/2025	W6977/2024/1	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;

(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.	Wastewater Treatment Plant (WWTP)	(a) Must be capable of treating up to 100 m^3 of sewage per day; (b) Must be able to treat sewage to the following minimum criteria: (i) pH 6.5 – 8.5; (ii) BOD <20 mg/L; (iii) TSS <30 mg/L; (iv) TN <30 mg/L; (v) TP <8 mg/L; (vi) *E. coli* <1,000 mg/L; and (vii) Residual free chlorine 0.2 – 2.0 mg/L; (c) Constructed as per the specifications in Figures 3 – 5 of Schedule 1 and must comprise the following: (i) Inlet bar screen; (ii) Balance pump and 2 x 50 kL balance tanks; (iii) A2O Process with submersible aerators; (iv) Sludge pumps; (v) Recirculation pump with online chlorine dosing; (vi) Sodium hypochlorite dosing system; (vii) Poly Aluminum chloride dosing system; (viii) 50 kL sludge storage tank; (ix) 2 x 50 kL irrigation tanks and outlet; (x) Irrigation pumps; (xi) Discharge flow meter; (xii) Interconnecting pipework; and (xiii) Sewage pump station; (d) All sewage storage and treatment tanks must be bunded;	As depicted in Figure 1 of Schedule 1

Infrastructure		Design and construction / installation requirements	Infrastructure location
		(e) An alarm system must be installed to notify the operator of high water levels, pump failures and other failures; (f) All sewage storage and treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks and defects; and (g) Stormwater must be prevented from entering the sewage treatment system and storage infrastructure.	
2.	Irrigation spray field	(a) The size of the spray field must be at least 14.6 ha and bunded to ensure no interaction with surface water; (b) Sprinklers must be positioned to ensure even distribution of treated wastewater across the spray field; (c) Individual branch line flush valves must be installed; (d) Pipelines must be impermeable and free of leaks; and (e) Must have a perimeter fence with visible safety signage installed to deter access.	As depicted in Figure 1 of Schedule 1
3.	Chemical / reagents storage	(a) Chemicals and hydrocarbon storage area must be adequately bunded to comply with the *Dangerous Good Safety Act 2004* and handled in accordance with AS 1940.	As depicted in Figure 3 of Schedule 1

Compliance reporting

2. The works approval holder must within 30 days of the infrastructure 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 suitability qualified and experienced engineer (eligible for membership of Engineers Australia) 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

4. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 1 and 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
1.	Wastewater Treatment Plant (WWTP)	(a) Pre-commissioning – comprising of static checks on unpowered equipment to confirm that the infrastructure has been built according to specifications; (b) Wet commissioning – comprising test operation of equipment and facilities with water; (c) Final commissioning – comprising test operation of equipment and facilities with chemicals and wastewater: (i) Material feeds to the WWTP must be gradually introduced until they reach steady state design volumes; and (ii) Treated wastewater must be collected and recycled to the WWTP as required; (d) Sewage sludge must be stored in impervious tanks prior to disposal to landfill; and (e) Operators must be trained in the use and maintenance of the WWTP.	For a period not exceeding 90 calendar days in aggregate
2.	Irrigation spray field	(a) No more than 100 m^3 of treated wastewater shall be applied per day to the irrigation spray field as defined by Figure 1 of Schedule 1; (b) Irrigation is managed to prevent ponding and pooling of wastewater in the ground surface of the irrigation discharge area; and (c) Irrigation system valves, pumps, pipelines, and other fittings must be maintained and inspected daily for ruptures or leaks when irrigating.	
3.	Chemical / reagents storage	(a) Tanks and storage receptacles must be confirmed free of leaks and defects prior to use.	

6. During environmental commissioning, the works approval holder must ensure that the emission specified in Table 3, is discharged only from the corresponding discharge point and only at the corresponding discharge point locations.

Table 3: Authorised discharge points during commissioning

Emission	Discharge point	Discharge point locations
Treated wastewater	Sprinklers within the Irrigation Spray field	Irrigation spray field as shown in Figure 1 of Schedule 1

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	Unit	Frequency	Method
Sprinklers within irrigation spray field	WWTP irrigation tank outlets	pH[1]	-	Daily	Spot sample in accordance with AS/NZS 5667.1 and AS/NZS 5667.10
		Residual free chlorine[1]	mg/L		
		BOD		Fortnightly	
		TSS			
		TDS			
		TN			
		TP			
		E. coli	cfu or MPN / 100mL		
	Irrigation pump flow meters	Volume[1]	kL/day	Continuous	N/A

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

Commissioning reporting

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 2.

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 timeframes and amount of sewage processed;

(b) the discharge monitoring results in accordance with condition 7;

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

(i) a comparison of the treated wastewater monitoring results in comparison to the discharge design requirements specified in condition 1;

(ii) the commissioning of the process control and telemetry system; and

(iii) an assessment of the irrigation spray field performance against operational requirements in condition 5.

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

(e) 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

10. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1 and 12 where the Environmental Commissioning Report for that item of 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 and 12:

(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

Infrastructure and equipment		Operational requirement	Infrastructure location
1.	Wastewater Treatment Plant (WWTP)	(a) Only domestic sewage waste is authorised to be received and treated; (b) Waste must be received via the WWTP inlet at a rate of no more than 100 m^3/day;	As depicted in Figure 1 of Schedule 1

Infrastructure and equipment		Operational requirement	Infrastructure location
		(c) Sludge is contained within sealed sludge tanks prior to drying and removal by a licensed waste carrier for disposal to a licensed disposal facility; (d) Screenings are contained within a sealed bin prior to disposal to a licensed disposal facility; and (e) Volumetric flow meters must be maintained on each WWTP outlet to the corresponding irrigation field.	
2.	Irrigation spray fields	(a) No more than 100 m^3/day of treated wastewater is to be applied to the irrigation area; (b) Irrigation is managed to prevent ponding and pooling of wastewater on the ground surface of the irrigation spray field; (c) No treated wastewater is permitted to be discharged outside of the irrigation area as defined by Figure 1 of Schedule 1; and (d) Perimeter fencing and safety signage must be maintained.	As depicted in Figure 1 of Schedule 1
3.	Chemical / reagents storage	(a) The integrity of all tanks, storage receptacles and associated bunding must be maintained.	As depicted in Figure 3 of Schedule 1

13. During time limited operations, the works approval holder must ensure that treated wastewater is only discharged to the discharge point listed in Table 6, in accordance with the concentration and loading limits specified in Table 6.

Table 6: Emission and discharge limits during time limited operations

Discharge point	Parameter	Concentration limit	Loading limit
Sprinklers within irrigation spray field	pH	6.5 - 8.5	N/A
	BOD	<20 mg/L	
	TSS	<30 mg/L	
	TN	<30 mg/L	180 kg/ha (over the time limited operations period)
	TP	<8 mg/L	20 kg/ha (over the time limited operations period)
	Residual free chlorine	0.2 to 2.0 mg/L	N/A
	E. coli	<1,000 cfu/100mL	

Monitoring during time limited operations

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

Table 7: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Unit	Frequency	Method
Sprinklers within irrigation spray field	WWTP irrigation tank outlets	pH[1]	-	Daily	Spot sample in accordance with AS/NZS 5667.1 and AS/NZS 5667.10
		Residual free chlorine[1]	mg/L		
		BOD		Monthly	
		TSS			
		TDS			
		TN			
		TP			
		E. coli	cfu or MPN / 100mL		
	Irrigation pump flow meters	Volume[1]	kL/day	Continuous	N/A

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

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;

(b) the discharge monitoring results obtained during time limited operations in accordance with condition 14;

(c) a summary of the environmental performance of all infrastructure as constructed or installed (as applicable), which includes records detailing:

(i) a comparison of the treated wastewater monitoring results against discharge limits specified in condition 13; and

(ii) assessment of the irrigation spray fields performance again operational requirements in condition 12.

(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.

Requirements (all phases)

17. The works approval holder must immediately recover, or remove and dispose of, spills of environmentally hazardous materials including fuel, oil, or other hydrocarbons, whether inside or outside an engineered containment system.

18. The works approval holder must ensure that all material used for the recovery, removal, and/or disposal of environmentally hazardous materials is stored in an impermeable container prior to disposal at an appropriately authorised facility.

19. The works approval holder must ensure that all sample analysis undertaken pursuant to conditions 7 and 14 is undertaken by a holder of a current accreditation from NATA for the methods of analysis relevant to the corresponding parameter.

Records and reporting (general)

20. 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.

21. 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 programs undertaken in accordance with conditions 7 and 14; and

(c) complaints received under condition 20.

22. The books specified under condition 21 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 8 have the meanings defined.

Table 8: Definitions

Term	Definition
AS 1940	means Australian Standard *AS 1940 The storage and handling of flammable and combustible liquids*.
AS/NZS 5667.1	means Australian and New Zealand Standard *AS/NZS 5667.1 Water quality — Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*.
AS/NZS 5667.10	means Australian and New Zealand Standard *AS/NZS 5667.10 Water quality — Sampling, Part 10: 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 or MPN / 100mL	colony forming units or most probably number 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.
E. coli	*Escherichia coli*
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).
NATA	National Association of Testing Authorities, Australia
premises	the premises to which this works approval applies, as specified at the front of this works approval and as defined by the coordinates in Schedule 2 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
spot sample	a discrete sample representative at the time and place at which the sample is taken.
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
TDS	total dissolved solids
TSS	total suspended solids
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.
WWTP	wastewater treatment plant

END OF CONDITIONS

Schedule 1: Maps

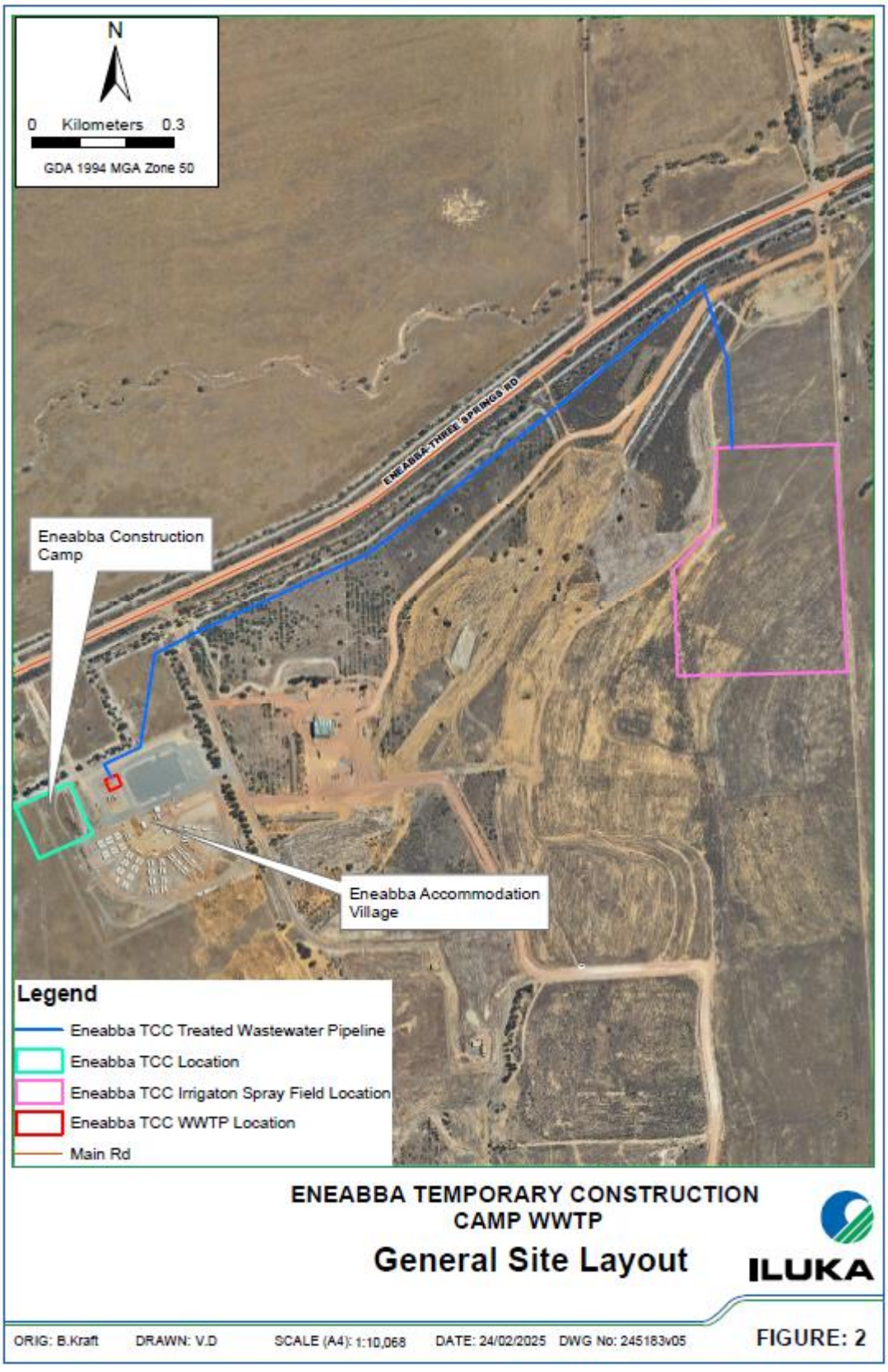

Figure 1: Map of the layout of the WWTP, sprayfield and connecting pipeline

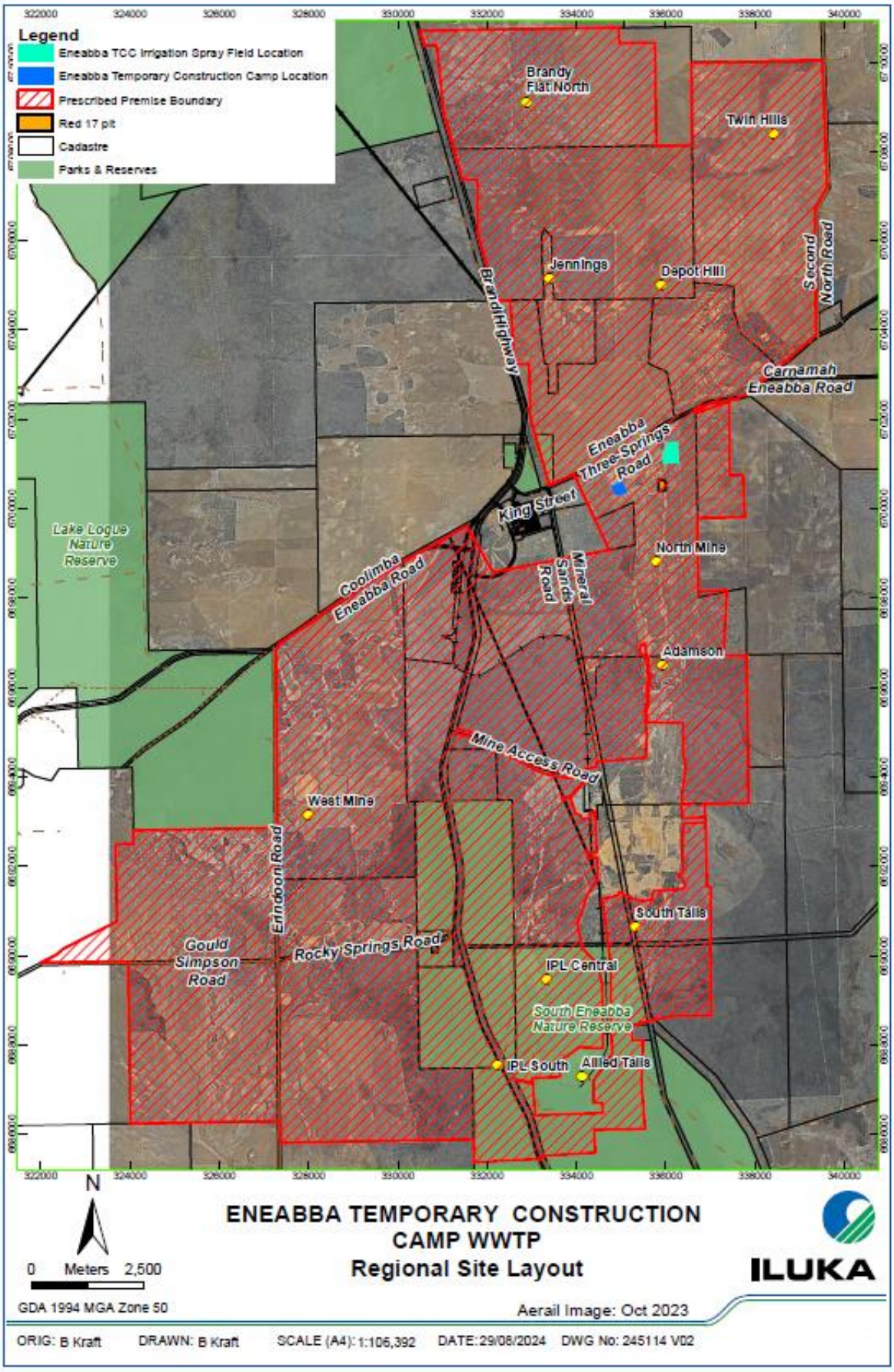

Figure 2: Map of the boundary of the wider prescribed premises under L5646/1994/10

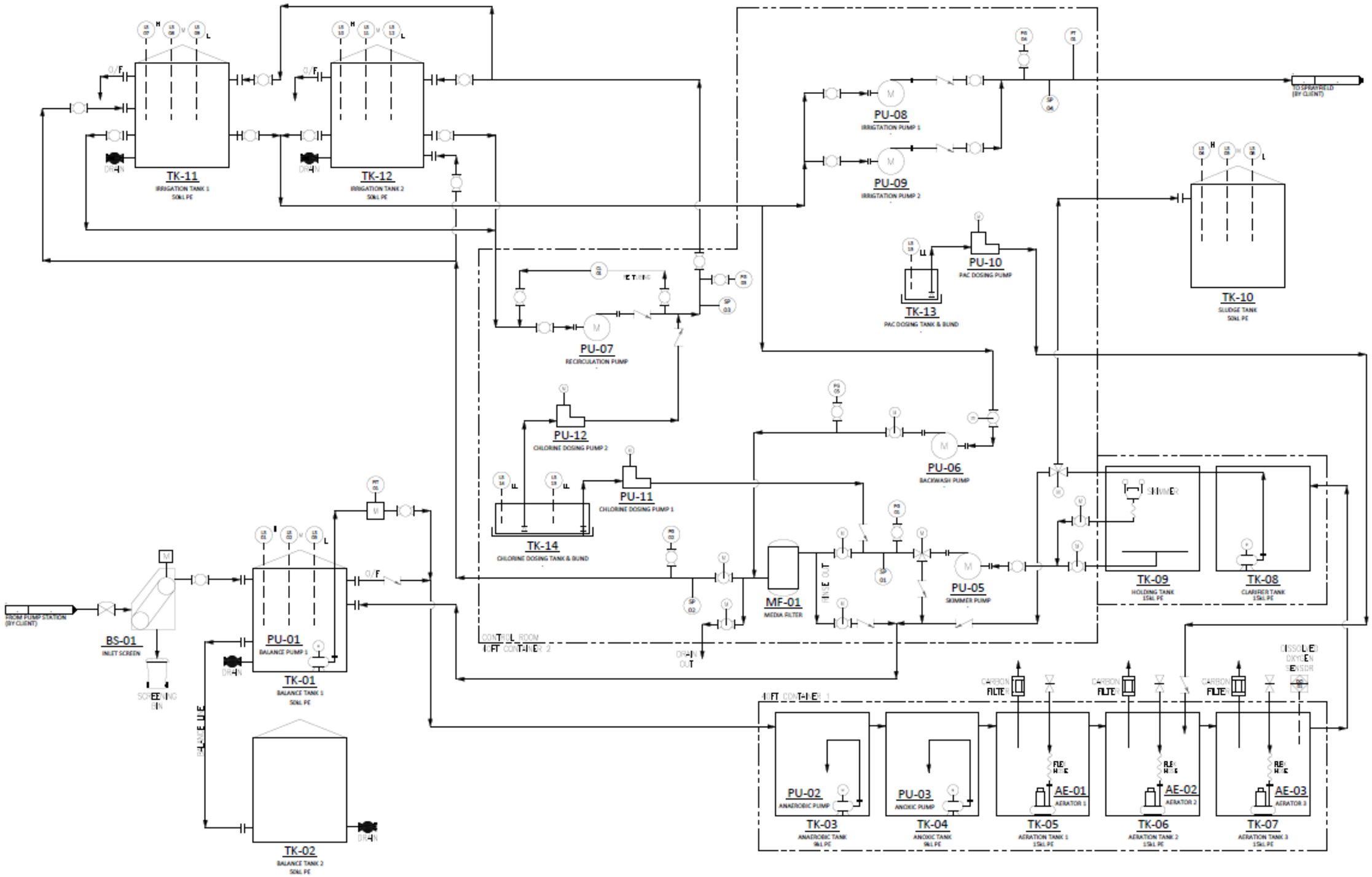

Figure 3: Wastewater treatment plant process design

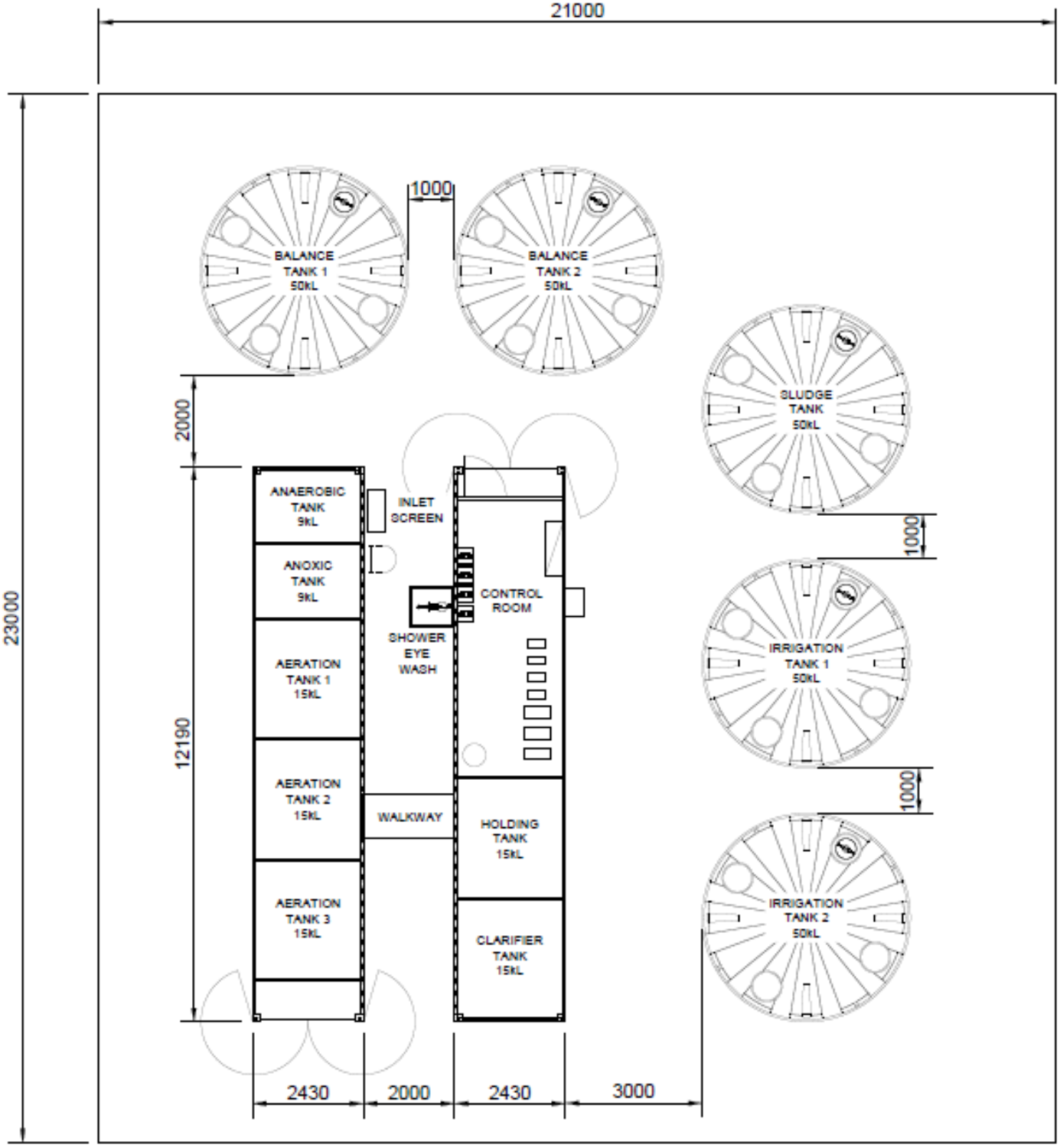

Figure 4: Wastewater treatment plant general arrangement

Schedule 2: Premises boundary

The premises boundary is defined by the coordinates listed in Table 9, Table 10 and Table 11.

Table 9: Wastewater treatment plant boundary coordinates (GDA1994 MGA Zone 50)

	Easting	Northing
1.	334762.207	6700780.226
2.	334737.7062	6700769.051
3.	334727.2613	6700791.475
4.	334752.9118	6700802.816
5.	334762.207	6700780.226

Table 10: Pipeline boundary coordinates (GDA1994 MGA Zone 50)

	Easting	Northing
1.	336054.41	6701494.37
2.	336043.82	6701681.98
3.	335991.50	6701838.29
4.	335680.13	6701576.08
5.	335453.04	6701398.16
6.	335282.13	6701269.39
7.	334928.62	6701107.85
8.	334832.63	6701058.69
9.	334801.39	6700860.81
10.	334725.18	6700824.92
11.	334739.71	6700796.98

Table 11: Spray field boundary coordinates (GDA1994 MGA Zone 50)

	Easting	Northing
1.	336021.4	6701494
2.	336273	6701503
3.	336297.8	6701020

	Easting	Northing
4.	335938.9	6701012
5.	335930.6	6701239
6.	336017.3	6701329
7.	336021.4	6701494