Works Approval

Works approval number	W6936/2024/1
Works approval holder	Numans Accommodation Village Pty Ltd
ACN	127 136 154
Registered business address	2/65 Prestige Pde WANGARA WA 6065
DWER file number	DER2024/000229
Duration	19/08/2024 to 18/08/2029
Date of issue	19/08/2024
Premises details	Numans Accommodation Village Hodd Road Collie WA Legal description - Part of Lot 8 on Deposited Plan 14975 Certificate of Title Volume 1683 Folio 635 As defined by the coordinates in Schedule 2 of the Works Approval

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production and design capacity**
Category 54: Sewage facility	100 m^3/day

This works approval is granted to the works approval holder, subject to the attached conditions, on 19 August 2024, by:

Grace Heydon

Digitally signed by Grace Heydon
Date: 2024.08.19 15:01:06 +08'00'

Grace Heydon

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

Works approval history

Date	Reference number	Summary of changes
19/08/2024	W6936/2024/1	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;

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	NWWTP	NWWTP to be constructed to meet the following treatment specifications: • Treat up to 100 m^3/day of raw sewage; • Treat sewage to the following output emission standards: ○ pH – 6.5 to 8.5; ○ E.Coli <100 cfu/100ml ○ Total Nitrogen – 35 mg/L ○ Total Phosphorus – 5 mg/L ○ Total Suspended Solids – 30 mg/L ○ Free Chlorine – 0.5 to 2.0 mg/L ○ Biochemical Oxygen Demand – 20 mg/L • NWWTP to be constructed underground to consist of the following infrastructure: ○ 3 x 50 kL Primary Chamber Tanks. ○ 4 x 50 kL Primary Chambers Anaerobic Baffle Reactors (ABR) tanks. ○ 50 kL Pump Chamber. ○ 5 Lined ABSORBS Secondary treatment beds - 65m x 8m dimensions. ○ 50 kL Irrigation Chamber. ○ Poly Aluminium Chloride (PAC 23) injection dosing system. • ABR tanks, pump chamber and ABSORBS filter pump chamber to have a combined 1-day emergency storage capacity.	As shown in Figures 1, 2, 3 and 6 of Schedule 1

	Infrastructure	Design and construction / installation requirements	Infrastructure location

		• Tanks holding untreated and treated wastewater to have alarms fitted (audible and visual) to detect high volume levels.
		• MagFlow meters to be installed to record the influent/effluent volumes that are received/sent from the NWWTP. Flow meters must be located:
		  ○ On the inflow point to the primary chamber (F1); and
		  ○ One for each irrigation output line prior to the irrigation on each area (F2 and F3).
		• Chemical storage to be bunded in accordance with Australian Standard 1940 *The Storage and Handling of Flammable and Combustible Liquids.*	

2.	NWWTP Irrigation Area 1	• The irrigation area accepting TWW from the NWWTP must be at least 2.5ha in area.
		• The WWTP irrigation fields must include:
		  ○ drippers that are positioned to ensure even distribution of wastewater; and
		  ○ fencing with visible safety signage installed to deter access.
			As shown in Figure 4 of Schedule 1

3.	NWWTP Irrigation Area 2	• The irrigation area accepting TWW from the NWWTP must be at least 2.5 ha in area.
		• The WWTP irrigation fields must include:
		  ○ drippers that are positioned to ensure even distribution of wastewater; and
		  ○ fencing with visible safety signage installed to deter access.
			As shown in Figure 4 of Schedule 1

2. The licence holder must design, construct, and install groundwater monitoring wells in accordance with the requirements specified in Table 2.

Table 2: Infrastructure requirements – groundwater monitoring wells

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Groundwater monitoring bores GWB1 GWB2 GWB3 As depicted in Figure 7 of Schedule 1	<u>Well design and construction:</u> Designed and constructed in accordance with *ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores*. Well screens must target the part, or parts, of the aquifer most likely to be affected by contamination[1]. Where temporary/seasonal perched features are present, wells must be clustered, and the perched features individually screened.	As outlined in the indicative locations provided in Figure 6 of Schedule 1	Must be constructed, developed (purged), and determined to be operational by 30 December 2024
	<u>Logging of borehole:</u>		

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
	Soil samples must be collected and logged during the installation of the monitoring wells. A record of the geology encountered during drilling must be described and classified in accordance with the Australian Standard Geotechnical Site Investigations AS1726. Any observations of staining / odours or other indications of contamination must be included in the bore log.		
	Well construction log: Well construction details must be documented within a well construction log to demonstrate compliance with *ASTM D5092/D5092M-16*. The construction logs shall include elevations of the top of casing position to be used as the reference point for water-level measurements, and the elevations of the ground surface protective installations.		
	Well development: All installed monitoring wells must be developed after drilling to remove fine sand, silt, clay and any drilling mud residues from around the well screen to ensure the hydraulic functioning of the well. A detailed record should be kept of well development activities and included in the well construction log.		
	Installation survey: the vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	Well network map: a well location map (using aerial image overlay) must be prepared and include the location of all monitoring wells in the monitoring network and their respective identification numbers.		

Note 1: refer to Section 8 of Schedule B2 of the *Assessment of Site Contamination NEPM* for guidance on well screen depth and length.

3. The works approval holder must, within 30 calendar days of the monitoring well being constructed, submit to the CEO a well construction report evidencing compliance with the requirements of condition 2.

Compliance reporting

4. 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.

5. The Environmental Compliance Report required by condition 4, must include as a minimum the following:

(a) certification by a suitably qualified 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

6. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 7 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 4 of this works approval.

7. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 3 may only be carried out:

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

(b) for the corresponding authorised commissioning duration.

Table 3: Environmental commissioning requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
NWWTP	• Infrastructure is maintained in good working order • All volumetric flow meters are maintained • Spills of chemicals are outside of a vessel/container are cleaned up immediately.	For a period not exceeding 90 calendar days in aggregate.
Irrigation Area 1 and 2	• Not more than 100m^3 per day of TWW to be applied to Irrigation Areas 1 and 2 combined. • Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation spray field; and	

Infrastructure	Commissioning requirements	Authorised commissioning duration
	• No TWW is permitted to discharge from the Irrigation Area 1 and 2 identified in Figure 4 Schedule 1 Irrigation map.	

8. During environmental commissioning, the works approval holder must ensure that the waste types specified in Table 4 are only subjected to the corresponding process, subject to the corresponding process limits and/or specifications.

Table 4: Waste processing

Waste type	Process(es)	Process limits and/or specifications
Wastewater generated from the Numans Accommodation Village	Treated through the NWWTP. Irrigation of TWW to Irrigation Areas 1 and 2	No more than 100 m^3/day

9. During environmental commissioning, the works approval holder must ensure that the emission(s) specified in Table 5, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 5: Authorised discharge points during environmental commissioning

Emission	Discharge point	Discharge point location
TWW from the NWWTP	Drippers within the Irrigation Area 1 and 2	As shown in Figure 4 of Schedule 1

10. During environmental commissioning, the works approval holder must ensure that emissions from the discharge point listed in Table 6 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 11.

Table 6: Emission and discharge limits

Discharge point	Parameter	Limit
Irrigation output line to Irrigation Area 1 Irrigation output line to Irrigation Area 2	pH	6.5 – 8.5
	E. Coli	<100 cfu/100ml
	Total Nitrogen	35 mg/L
	Total Phosphorus	5 mg/L
	TSS	30 mg/L
	BOD	20 mg/L

Monitoring during environmental commissioning

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

Table 7: Emissions and discharge monitoring during environmental commissioning

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit	Method
Irrigation Area 1 Irrigation Area 2	50 kL Irrigation Pump Chamber - Sample Point B in Figure 5	Volume	Continuous	Cumulative daily	m^3/day	N/A
		E. Coli	Weekly	Spot sample	cfu/ 100mL	AS/NZS 5667.1
		Biochemical Oxygen Demand			mg/L	
		Total Suspended Solids				
		Total Nitrogen				
		Total Phosphorus				
		pH[1]		N/A	pH units	

Note 1 – non-NATA *in situ* testing permitted

12. The works approval holder must monitor groundwater for concentrations of the identified parameters in accordance with Table 8.

Table 8: Ambient groundwater monitoring

Monitoring well location	Parameters	Unit	Frequency	Method
GWB1 GWB2 GWB3 As depicted in Figure 7	SWL[1]	mBGL and mAHD	Twice during Commissioning Monitoring events must be undertaken a minimum of 30 days apart	Spot sample, in accordance with AS/NZS 5667.11
	pH[1]	pH units		
	Total Dissolved Solids	mg/L		
	Total Nitrogen			
	Total Phosphorus			
	nitrate-nitrogen			
	ammonium-nitrogen			
	bicarbonate			
	sodium			
	Calcium			
	Magnesium			

Monitoring well location	Parameters	Unit	Frequency	Method
	Chloride			
	Sulfate			
	Potassium			
	electrical conductivity	µS/cm		

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

13. 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 7 and Table 8.

14. The works approval holder must record the results of all monitoring activity required by condition 11 and 12.

Environmental commissioning report

15. 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 3.

16. The works approval holder must ensure the Environmental Commissioning Report required by condition 15 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 any reported limit exceedances in accordance with condition 10 and an explanation as to why exceedances have occurred and how they were rectified;

    (c) a summary of the treated effluent monitoring results recorded in accordance with condition 11 and 12;

    (d) copies of laboratory reports for treated effluent monitoring results recorded in accordance with condition 11 and 12;

    (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

17. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1:

    (a) where the item of infrastructure is not authorised to undertake environmental commissioning, the Environmental Compliance Report as required by condition 4 has been submitted by the works approval holder for that item of infrastructure; and

    (b) where the item of infrastructure is authorised to undertake environmental commissioning under condition 4, the Environmental Commissioning Report for

that item of infrastructure as required by condition 15 has been submitted by the works approval holder.

18. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 19 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 15 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 16(a).

Time limited operations requirements and emission limits

19. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 9 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 9.

Table 9: Infrastructure and equipment requirements during time limited operations

Site infrastructure and equipment	Operational requirement	Infrastructure location
NWWTP	• Infrastructure is maintained in good working order • All volumetric flow meters are maintained • Spills of chemicals are outside of a vessel/container are cleaned up immediately.	As shown in Schedule 1 Layout Map and Figure 1 and 2.
Irrigation Area 1 and 2	• Not more than 100m^3 per day of TWW to be applied to Irrigation Areas 1 and 2 combined. • Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation spray field; and • No TWW is permitted to discharge from the Irrigation Area 1 and 2 identified in Figure 4 Schedule 1 Irrigation map.	As shown in Schedule 1 Irrigation Area Map.

20. During time limited operations, the works approval holder must ensure that the waste types specified in Table 10 are only subjected to the corresponding process, subject to the corresponding process limits and/or specifications.

Table 10: Waste processing

Waste type	Process(es)	Process limits and/or specifications
Wastewater generated from the Numans Accommodation Village	Treated through the NWWTP. Irrigation of TWW to Irrigation Areas 1 and 2	No more than 100 m^3/day

21. During time limited operations, the works approval holder must ensure that the emission(s) specified in Table 11, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 11: Authorised discharge points during environmental commissioning

Emission	Discharge point	Discharge point location
TWW from the NWWTP	Drippers within the Irrigation Area 1 and 2	As shown in Schedule 1 Irrigation Area Map

22. During time limited operations, the works approval holder must ensure that emissions from the discharge point listed in Table 12 for the corresponding parameter do not exceed the corresponding limit when monitored in accordance with condition 23.

Table 12: Emission and discharge limits

Discharge point	Parameter	Limit
Irrigation output line to Irrigation Area 1 Irrigation output line to Irrigation Area 2	pH	6.5 – 8.5
	E. Coli	<100 cfu/100ml
	Total Nitrogen	35 mg/L
	Total Phosphorus	5 mg/L
	TSS	30 mg/L
	BOD	20 mg/L

Monitoring during time limited operations

23. The works approval holder must monitor emissions during time limited operations in accordance with Table 13.

Table 13: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit	Method
Irrigation Area 1 Irrigation Area 2	50 kL Irrigation Pump Chamber - Sample Point B in Figure 5	Volume	Continuous	Cumulative daily	m^3/day	N/A
		E. Coli	Weekly	Spot sample	cfu/ 100mL	AS/NZS 5667.1
		Biochemical Oxygen Demand			mg/L	
		Total Suspended Solids				
		Total Nitrogen				
		Total Phosphorus				

		pH[1]		N/A	pH units	

Note 1 – non-NATA *in situ* testing permitted

24. The works approval holder must monitor groundwater for concentrations of the identified parameters in accordance with Table 14.

Table 14: Ambient groundwater monitoring

Monitoring well location	Parameters	Unit	Frequency	Method
GWB1 GWB2 GWB3 As depicted in Figure 7	SWL	mBGL and mAHD	Monthly	Spot sample, in accordance with AS/NZS 5667.11
	pH1	pH units		
	Total Dissolved Solids	mg/L		
	Total Nitrogen			
	Total Phosphorus			
	nitrate-nitrogen			
	ammonium-nitrogen			
	bicarbonate			
	sodium			
	Calcium			
	Magnesium			
	Chloride			
	Sulfate			
	Potassium			
	electrical conductivity	µS/cm		

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

25. 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 13 and Table 14.

26. The works approval holder must record the results of all monitoring activity required by condition 23 and 24.

Compliance reporting

27. 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.

28. The works approval holder must ensure the report required by condition 27 includes the following:

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

(b) a summary of any reported limit exceedances in accordance with condition 22 and an explanation as to why exceedances have occurred and how they were rectified;

(c) a summary of monitoring results obtained during time limited operations under condition 23 and 24;

(d) copies of laboratory reports for treated effluent monitoring results recorded in accordance with condition 23 and 24;

(e) A comparison of monitoring results obtained during time limited operations and monitoring results obtained during environmental commissioning;

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

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

(h) 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.

Specified Actions

29. The works approval holder must submit to the CEO by 31 December 2024, a Soil Sampling Plan consistent with the NSW wastewater irrigation guidelines (NSW DEC, 2004).

30. The works approval holder must submit to the CEO by 31 December 2024, a Biomass Management Plan that must include, but not be limited to:

a) a clear statement of the proposed scope of work;

b) how nutrient accumulation within the irrigation sprayfield areas will be monitored and triggers that will identify when biomass removal should occur;

c) a description of the field methodologies and proposed timeframes to remove biomass from the irrigation sprayfield areas; and

d) How the quantities of biomass removed from the irrigation sprayfield areas will be recorded.

Records and reporting (general)

31. 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.

32. 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 1;

(c) monitoring programmes undertaken in accordance with condition 11, 12, 23 and 24; and

(d) complaints received under condition 31.

33. The books specified under condition 32 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 15 have the meanings defined.

Table 15: Definitions

Term	Definition
AS5667.1:1998	means Australian Standard 5667.1:1998 Water Quality – Sampling.
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
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).
m^3	cubic metres

Term	Definition
mg/L	milligrams per litre
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
NWWTP	Numans Village Wastewater Treatment Plant
NSW DEC, 2004	means NSW DEC, 2004. *Environmental Guidelines: Use of Effluent by Irrigation*. The technical guidelines produced by the NSW Department of Environment and Conservation
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
TWW	Treated Wastewater
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 Red in map below.

Figure 1: Prescribed premises boundary

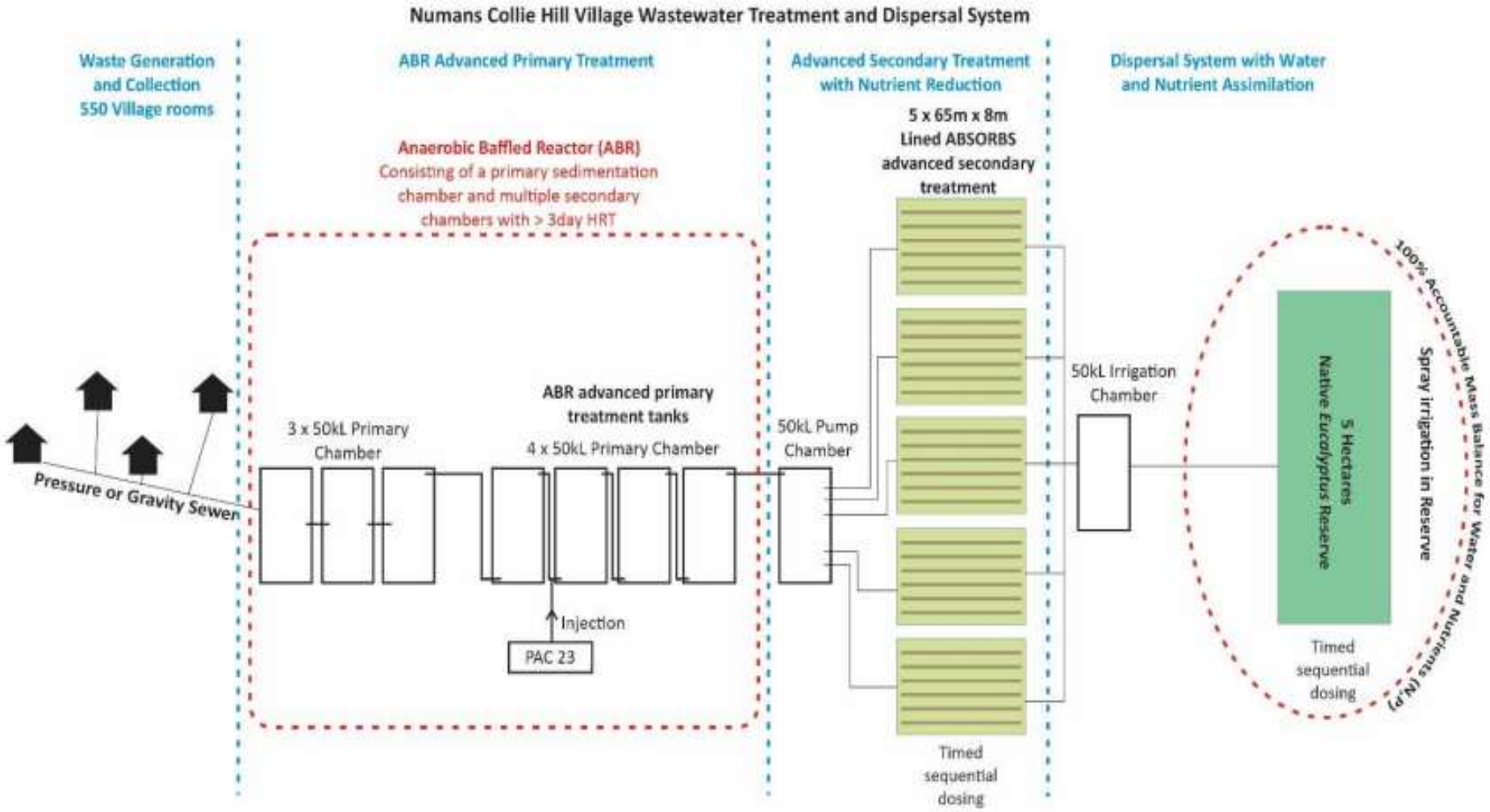

Figure 2: Design layout of the NWWTP infrastructure

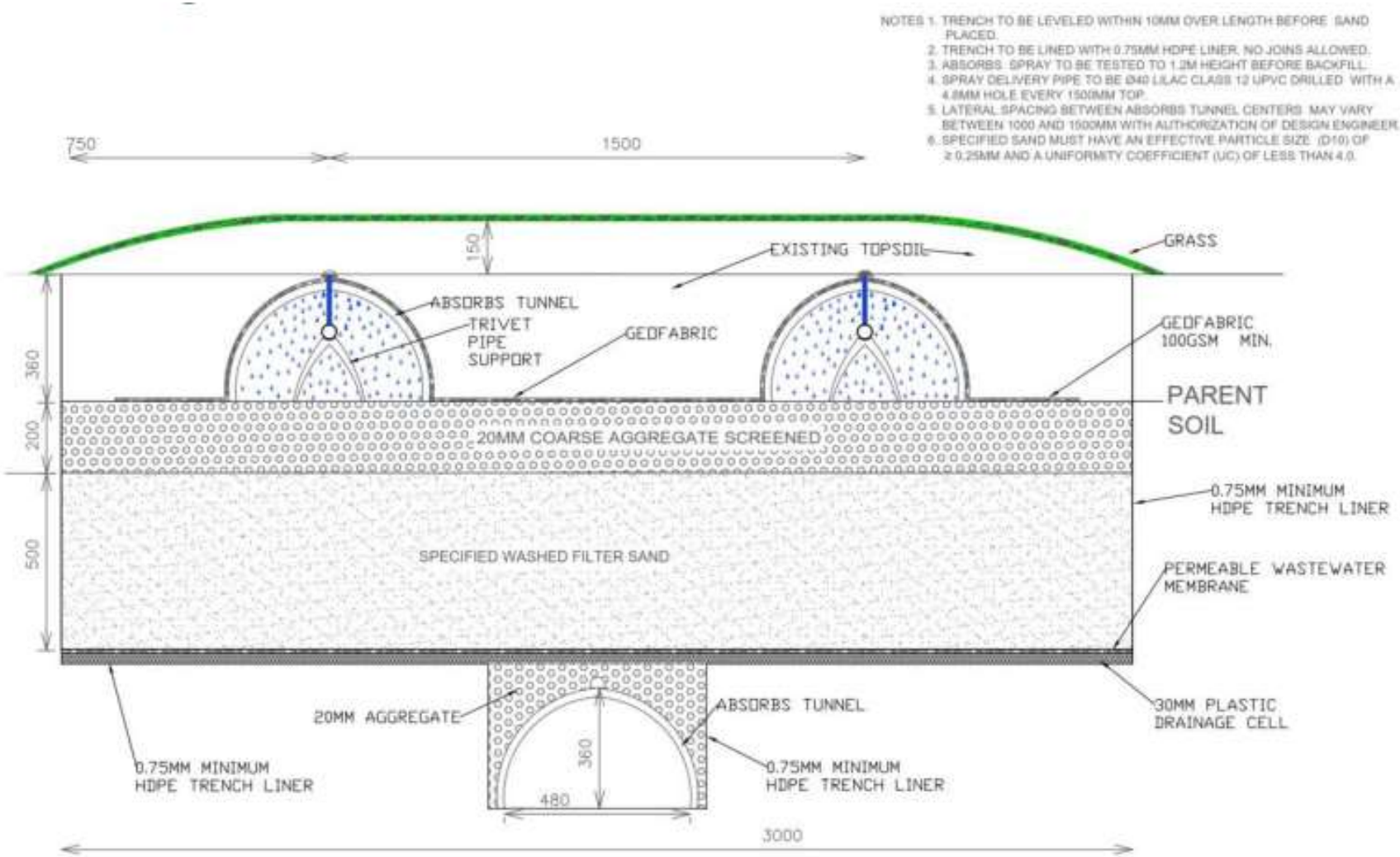

Figure 3: Design of secondary treatment ABSORBS beds.

Irrigation Area map

Figure 4: Map of Irrigation Areas 1 and 2

Emissions sample map

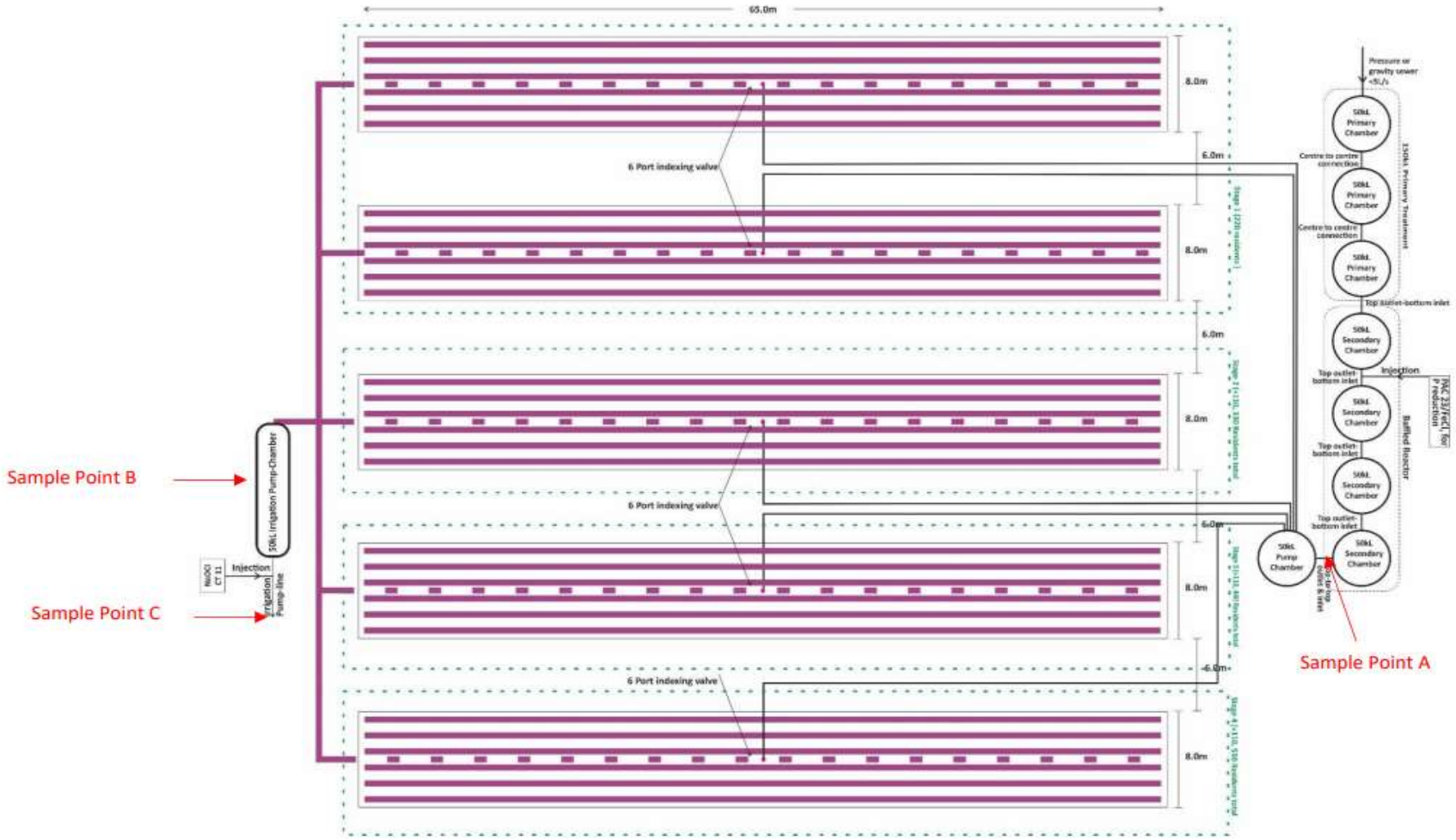

Figure 5: NWWTP treatment schematic and sampling points

MagFlow meter map

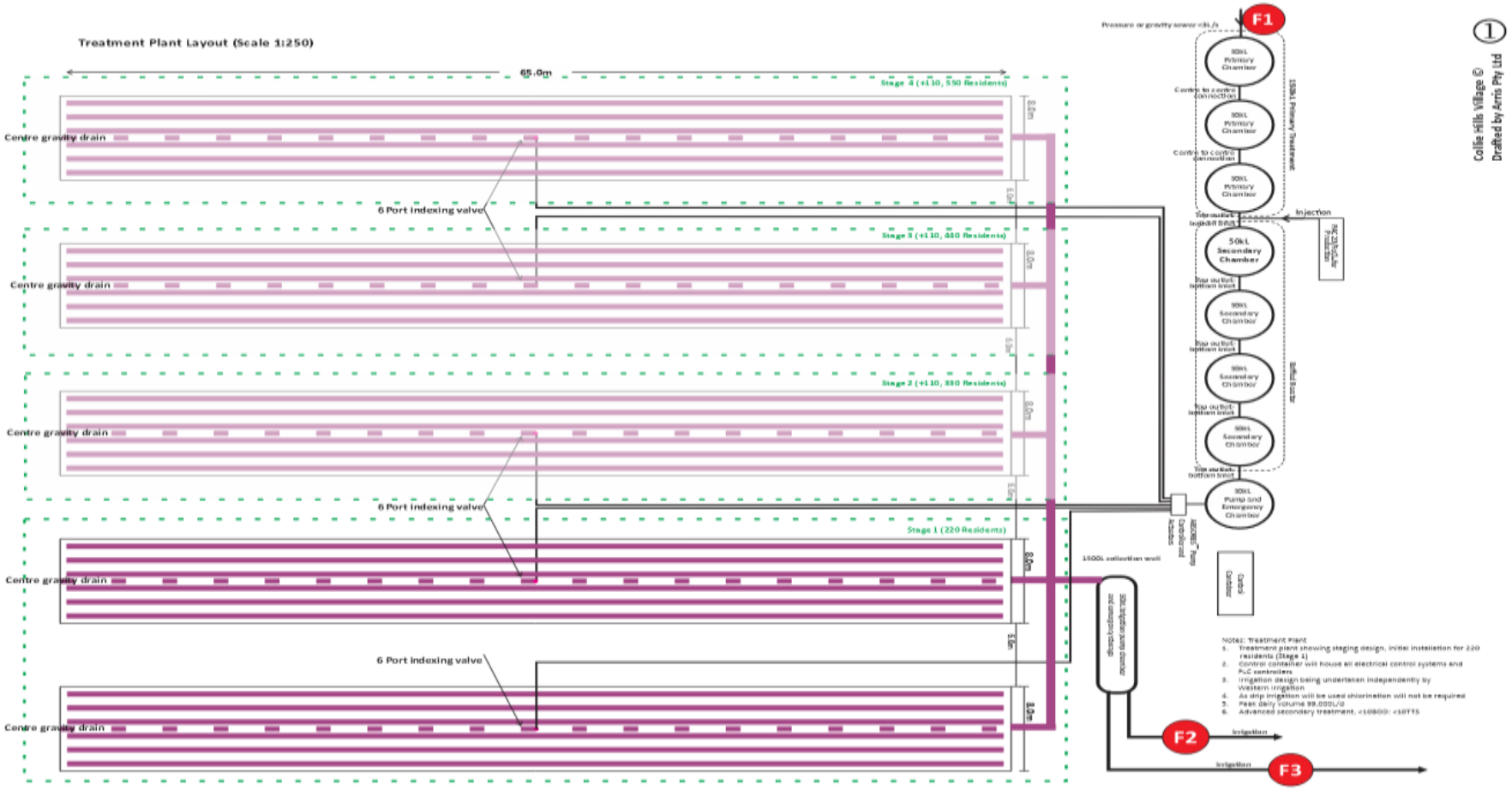

Figure 6: NWWTP MagFlow meter locations schematic

Groundwater monitoring bore location map

Figure 7: Groundwater monitoring bore locations (indicated in green)

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 16.

Then corners of the Irrigation Area 1 and 2 are listed in Table 17 and 18.

Table 16: Premises boundary coordinates (GDA2020)

	Latitude	Longitude
1.	-33.3221	116.197
2.	-33.3227	116.1975
3.	-33.3233	116.1969
4.	-33.3249	116.1971
5.	-33.3285	116.1933
6.	-33.3271	116.1921

Table 17: Irrigation Area 1 coordinates (GDA2020)

	Latitude	Longitude
1.	-33.3239	116.196
2.	-33.3249	116.1971
3.	-33.3261	116.196
4.	-33.3250	116.1949

Table 18: Irrigation Area 2 coordinates (GDA2020)

	Latitude	Longitude
5.	-33.3263	116.1935
6.	-33.3275	116.1945
7.	-33.3285	116.1933
8.	-33.3274	116.1923