Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6559/2021/1
Works approval holder	Shire of East Pilbara
Registered business address	Corner Kalgan & Newman Drives NEWMAN WA 6753
DWER file number	DER2021/000260
Duration	03/02/2022 to 02/02/2027
Date of issue	03/02/2022
Premises details	Newman Refuse Site Legal description - Lot 129 on Deposited Plan 218264

Prescribed premises category description **(Schedule 1, *Environmental Protection Regulations 1987*)**	**Assessed design capacity**
Category 61: Liquid waste facility – premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	105 000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 20 April 2023 by:

Abbie Crawford

Digitally signed by Abbie Crawford
Date: 2023.04.20 13:07:17 +08'00'

Abbie Crawford
A/MANAGER, WASTE INDUSTRIES

Officer delegated under section 20 of the Environmental Protection Act 1986

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 the infrastructure; and

(b) in accordance with the corresponding construction requirements

as set out in Table 1.

Table 1: Construction and installation requirements

	Infrastructure	Construction and installation requirements
1.	Six Liquid waste ponds (Items 3 – 8)	• Constructed to receive and treat a liquid waste inflow of up to 105,000 tonnes per annual period; • All treatment ponds lined with a High Density Polyethylene liner in accordance with Schedule 2 Table 10; • All treatment pond embankments adequately constructed to provide a freeboard of 400 mm; and • Connected to the existing effluent discharge channel located to the south of the liquid waste ponds.
2.	Two sedimentation basins	• Both basins to be lined with concrete to achieve a hydraulic permeability of ≤1x10^{-9} m/sec; • Each basin to be constructed to be 8 m in length and 8 m in breadth at the top of the bank, and 0.95 m in depth; • Each basin to hold a volume of 68.25 m^3; and • Basin embankments adequately constructed to provide a freeboard of 450 mm.
Pond Train A		
3.	Anaerobic Pond A1	• Constructed to be 38.0 m in length and 21.5 m in breadth at the top of the bank, and 4.0 m in depth; • Hold a pond volume of 1,352 m^3; and • Embankments adequately constructed to achieve a 1:2 embankment slope.
4.	Aerobic Pond A2	• Constructed to be 50.0m in length and 30.0 m in breadth at the top of the bank, and 2.80 m in depth; • Hold a pond volume of 2,411 m^3; and • Embankments adequately constructed to achieve a 1:2.5 embankment slope.

	Infrastructure	Construction and installation requirements
Pond Train B		
5.	Anaerobic Pond B1	• Constructed to be 32.0 m in length and 25.0 m in breadth at the top of the bank, and 4.0 m in depth; • Hold a pond volume of 1,380 m^3; and • Embankments adequately constructed to achieve a 1:2 embankment slope.
6.	Aerobic Pond B2	• Constructed to be 55.0 m in length and 25.0 m in breadth at the top of the bank, and 2.8 m in depth; • Hold a pond volume of 2,061 m^3; and • Embankments adequately constructed to achieve a 1:2.5 embankment slope.
7.	Facultative Pond B3	• Constructed to be 45.0 m in length and 25.0 m in breadth at the top of the bank, and 4.0 m in depth; • Hold a pond volume of 1,070 m^3; and • Embankments adequately constructed to achieve a 1:3 embankment slope.
8.	Facultative Pond B4	• Constructed to be 45.0 m in length and 30.0 m in breadth at the top of the bank, and 1.65 m in depth; • Hold a pond volume of 1,400 m^3; and • Embankments adequately constructed to achieve a 1:3 embankment slope.

2. 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.

3. All sludge leachate is to be returned to the start of the treatment process.

4. All sewage sludge is to be removed to a licensed premises for final disposal.

Compliance reporting

5. The works approval holder must within 30 calendar days of an item of infrastructure required by condition 1 being constructed:

(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.

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

(a) certification by a suitably qualified civil engineer that the items of infrastructure or components 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

7. The works approval holder must only commence time limited operations for an item of infrastructure identified in condition 1 where the Environmental Compliance Report as required by condition 5 has been submitted by the works approval holder for that item of infrastructure

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

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 7 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 condition 8 (a)

Time limited operations requirements

9. During time limited operations, the works approval holder must ensure that the infrastructure and equipment listed in Table 2 is maintained and operated in accordance with the corresponding operational and waste acceptance requirement set out in Table 2.

Table 2: Infrastructure and equipment requirements

Infrastructure	Quantity limit	Operational requirements
Six liquid waste ponds	105 000 tonnes per annum	• Operated and maintained to receive and treat a liquid waste inflow of up to 105,000 tonnes per annual period; • All treatment ponds to be maintained as free of leaks and defects and lined with a High Density Polyethylene liner to achieve a hydraulic permeability of ≤1x10^{-9} m/sec; • All treatment pond embankments adequately maintained to provide a freeboard of 400 mm.
Two sediment basins		• Both basins to be maintained free of leaks and defects and lined with concrete to achieve a hydraulic permeability of ≤1x10^{-9} m/sec; • Each basin operated and maintained to receive a total volume of 68.25 m^3; and • Basin embankments adequately maintained to provide a freeboard of 450 mm.

10. The works approval holder must manage all wastewater treatment ponds such that vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond embankments.

11. The works approval holder must only allow waste to be accepted onto the premises if:

(a) it is of a type listed in Table 3;

(b) the quantity accepted is below any limit listed in Table 3; and

(c) it meets any specification listed in Table 3.

Table 3: Waste acceptance

Waste type	Waste code[1]	Quantity limit	Specifications
Liquid Wastes	K110 (grease trap wastes) K210 (septage wastes)	105 000 tonnes per annual period	Tankered into the premises and discharged in the concrete lined receival pit.
	K130 (sewage wastes)		From the reticulated sewerage system during emergency events or maintenance work only.

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

12. The works approval holder must ensure that where waste does not meet the waste acceptance criteria set out in condition 11, that it is removed from the Premises by the delivery vehicle or, where that is not possible, stored in a quarantined storage area or container and removed to an authorised facility as soon as practicable.

13. The works approval holder must ensure that the waste types specified in Table 4 are only subjected to the corresponding processes and specifications**.**

Table 4: Waste processing

Waste type	Process	Process limits[1]
Liquid Wastes	Physical, biological and chemical (lime dosing) treatment	pH to be maintained at 6.5 to 9.

Note 1: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

Emissions during time limited operations

14. The works approval holder must ensure that where waste is emitted to land from the emission points in Table 5 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this works approval.

Table 5: Emissions to land during time limited operations

Emission point	Emission point reference on map	Description	Source including abatement
L1	Discharged from Facultative Pond B4 through Flow Meter L1 to unlined channel	Treated wastewater discharge via pipe work to unlined area of the premises	Treated wastewater pipeline exiting liquid waste facility

Monitoring during time limited operations

15. The works approval holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;

(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;

(c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and

(d) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in the relevant table.

16. The works approval holder must ensure that:

(a) quarterly monitoring is undertaken at least 45 days apart; and

(b) six monthly monitoring is undertaken at least 5 months apart.

17. The works approval holder must ensure that all monitoring equipment used on the Premises to comply with the conditions of this works approval is calibrated in accordance with the manufacturer's specifications.

18. The works approval holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

19. The works approval holder must undertake the monitoring specified in Table 6 during time limited operations.

Table 6: Monitoring of inputs and outputs during time limited operations

Input/Output	Monitoring point reference	Parameter	Units	Averaging period	Frequency
K110 (grease trap wastes) K210 (septage wastes) K130 (sewage wastes)	-	Tonnage	Tonnes/day	n/a	Each load arriving at the premises
Treated wastewater discharged to unlined area of the premises	L1 (magflow meter) (as depicted in Figure 3)	Volumetric flow rate (cumulative)	m^3/day	Continuous	Monthly
Sludge	-	Tonnage	Tonnes/day	n/a	Each load removed from liquid waste ponds

20. The works approval holder must undertake the monitoring specified in Table 7 during time limited operations.

Table 7: Monitoring of emissions to land during time limited operations

Monitoring point reference	Parameter	Units	Averaging Period	Frequency
AC3; and AC4 (as depicted in Figure 2)	pH[1]	pH units	Spot Sample	Quarterly
	E.coli[2]	cfu/100 mL		
	Total Nitrogen	mg/L		
	Nitrate+Nitrite Nitrogen			
	Ammonia Nitrogen			
	Total Phosphorus			
	Total Dissolved Solids			
	Total Suspended Solids			
	Biochemical Oxygen Demand			

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

Note 2: Actual units are to be reported except where the result is greater than the highest detectable level of 24,000 cfu/100mL. In this case the reporting of the highest detectable level is permitted.

21. The works approval holder must undertake the monitoring specified in Table 8 during time limited operations.

Table 8: Monitoring of ambient groundwater quality during time limited operations

Monitoring point reference	Parameter	Units	Averaging Period	Frequency
MB1; MB2; MB3; MB4; MB5; MB6; MB7; and MB8 (as depicted in Figure 3)	Standing water level[1]	m(AHD)	Spot sample	Six monthly
	pH[1]	pH Units		
	Electrical conductivity	µS/cm		
	Total Nitrogen	mg/L		
	Ammonium Nitrogen			
	Nitrate + Nitrite Nitrogen			
	Total Phosphorus			
	Filterable –Reactive Phosphorus			
	Biochemical Oxygen Demand			

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

Compliance reporting

22. 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.

23. The works approval holder must ensure the report required by condition 22 includes the following:

(a) a summary of the time limited operations, including timeframes and quantity of liquid waste inputs processed;

(b) a summary of monitoring results obtained from monitoring programmes undertaken in accordance with conditions 19, 20 and 21;

(c) complaints received under condition 24;

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

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

Records and reporting

24. 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.

25. 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) waste acceptance in accordance with condition 11;

(c) monitoring programmes undertaken in accordance with conditions 19, 20 and 21; and

(d) complaints received under condition 24.

26. The books specified under condition 25 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
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 Water Quality – Sampling – Guidance on sampling of waste waters
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling of groundwaters;
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
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).
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
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 civil engineer	means a person who: a) holds a relevant civil engineering tertiary academic qualification; and b) has a minimum of at least three years of experience working in the area/field of civil engineering.

Term	Definition
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).

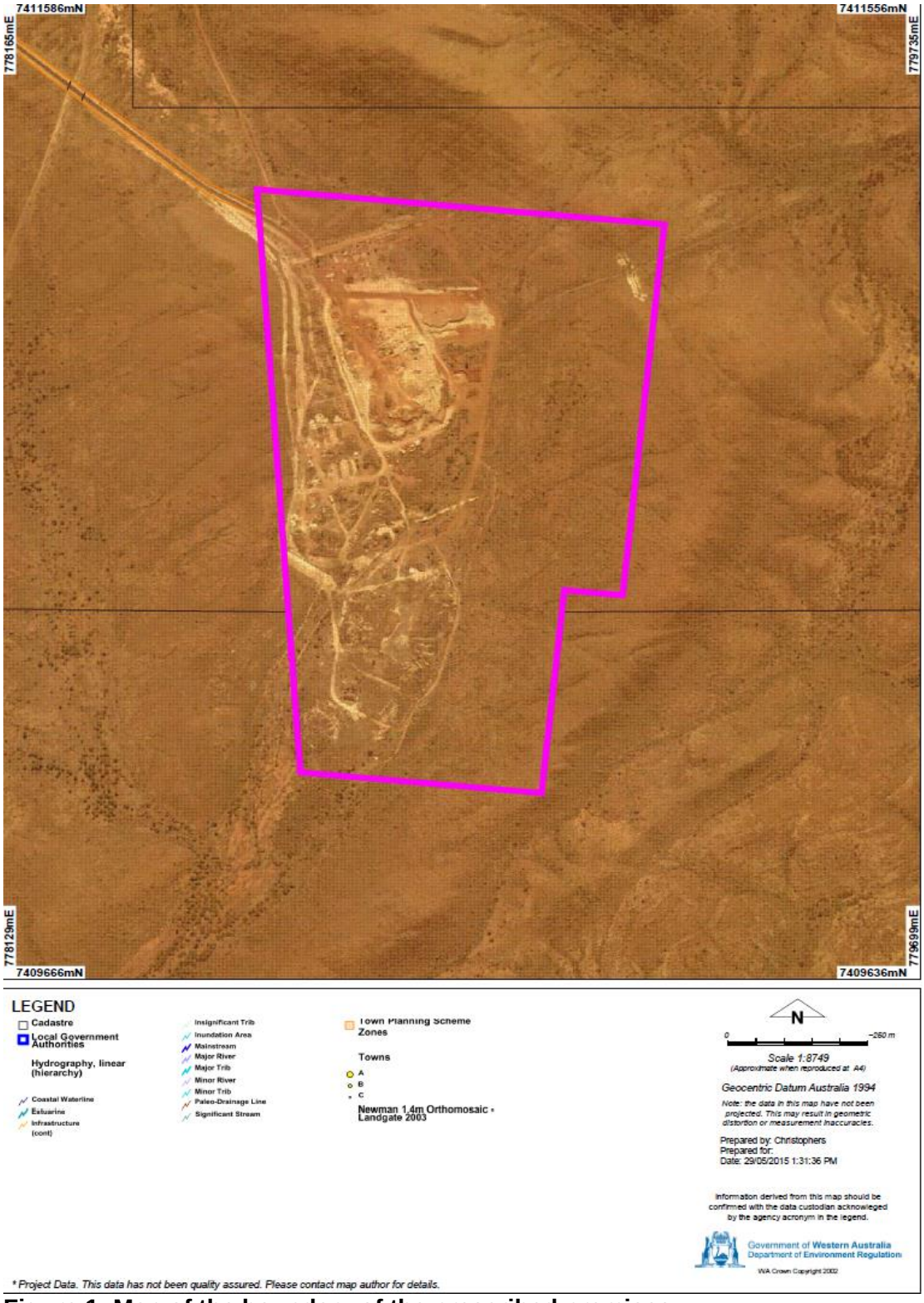

Figure 1: Map of the boundary of the prescribed premises

Liquid waste facility site plan

The layout of the new liquid waste ponds and the emission monitoring points are shown in the map below (Figure 2)

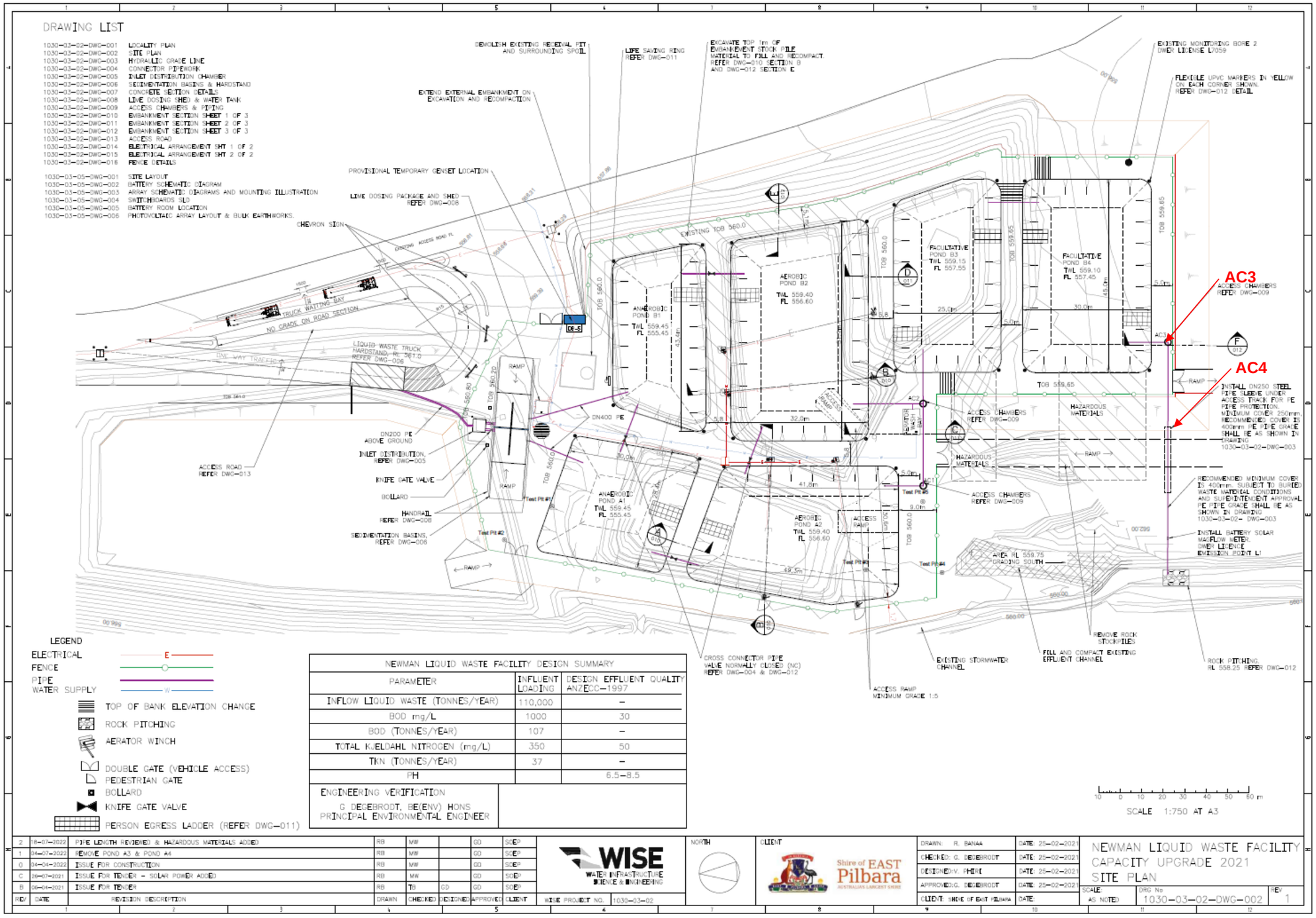

Figure 2: Liquid waste facility site plan

Monitoring bore locations

Figure 3: Monitoring bore locations

Schedule 2: Minimum specification for High Density Polyethylene liner installation

The construction works and requirements described in the following table are required to be completed on the occasion that High Density Polyethylene liner material is used for the pond construction in accordance with Condition 1.

Table 10: Geomembrane installation requirements

<table>
<tr><th></th><th>Infrastructure or Equipment</th><th>Requirements (design and construction)</th></tr>
<tr><td>1</td><td>High Density Polyethylene liner</td><td>• To extend over the entire pond base and up the side embankments;
• Must be uniform and free of pin holes, blisters, blemishes, striations, bubbles, roughness, contaminants and permanently attached raw materials;
• Completely sealed and waterproof along all joins and seams; and
• Leak detection survey to be carried out following installation.</td></tr>
<tr><td>2</td><td>Quality Assurance and Quality Control</td><td>Construction and installation performance must be measured by the following specifications:
• Construction requirements (as specified by Condition 1 and this table);
• Manufacturer requirements (as specified by the supplier of the Bituminous Geomembrane);
• Conformance testing – to show materials meet the following minimum requirements;
<table>
<tr><th colspan="2">Property</th><th>Units</th><th>Value</th><th>Test</th><th>Testing Frequency</th></tr>
<tr><td colspan="2">Thickness (average)</td><td>mm</td><td>2.0</td><td>ASTM D5199</td><td rowspan="3">One for every two rolls</td></tr>
<tr><td colspan="2">Thickness (minimum)</td><td>mm</td><td>2.0</td><td>ASTM D5199</td></tr>
<tr><td colspan="2">Density</td><td>g/cm^3</td><td>0.94</td><td>ASTM D3776</td></tr>
<tr><td colspan="2">Water permeability (liquid tightness) (minimum)</td><td>m/s</td><td>< 1 x 10^{-9}</td><td>ASTM E96</td><td>Every five years</td></tr>
<tr><td rowspan="4">Tensile properties</td><td>Break strength</td><td>kN/m</td><td>16</td><td>ASTM D7275</td><td rowspan="4">One per batch</td></tr>
<tr><td>Yield strength</td><td>kN/m</td><td>22</td><td>ASTM D7275</td></tr>
<tr><td>Yield elongation</td><td>%</td><td>12</td><td>ASTM D7275</td></tr>
<tr><td>Break elongation</td><td>%</td><td>100</td><td>ASTM D7275</td></tr>
<tr><td colspan="2">Tear resistance</td><td>N</td><td>249</td><td></td><td></td></tr>
<tr><td colspan="2">Puncture resistance</td><td>N</td><td>534</td><td></td><td></td></tr>
<tr><td colspan="2">Carbon black content</td><td>%</td><td>2-3</td><td></td><td></td></tr>
<tr><td colspan="2">Carbon black dispersion</td><td>Cat</td><td>9 in Cat 1 or Cat 2;
1 in Cat 3</td><td></td><td></td></tr>
</table>
</td></tr>
</table>