

TREATMENT PLANT APPROVAL 14/2019
Plumbing and Drainage Act 2018, part 4.



Approval

1. The **Envirotech Aerobic Sand Filter - Secondary Quality Wastewater Treatment System** ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by **Envirotech IP Pty Ltd ATF Envirotech Trust** (ABN 76 262 979 491) ("the manufacturer") has been assessed in accordance with the (previous) Queensland Plumbing and Wastewater Code (QPW Code) dated 26 October 2017.
2. Approval is granted for the secondary quality wastewater treatment system, subject to compliance by the manufacturer with the requirements of the *Plumbing and Drainage Act 2018*, part 4 and the conditions of approval detailed below.
3. This approval, the conditions of approval and the Schedule comprise the entire Chief Executive Approval document.
4. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

Conditions of approval

1. The manufacture, installation, operation, service and maintenance of the systems must be in conformity with the conditions of this Treatment Plant Approval.
2. The secondary quality wastewater treatment system, which is an example of the approved systems, may only be used on premises that generate per day
 - (a) a maximum hydraulic loading of 5,000 litres; and
 - (b) a maximum organic loading of 1500g BOD₅.
3. The system must continue to meet the requirements of secondary quality wastewater treatment system, producing the following effluent quality —
 - (a) 90% of the samples taken must have a BOD₅ less than or equal to 20 g/m³ with no sample greater than 30 g/m³.
 - (b) 90% of the samples taken must have total suspended solids less than or equal to 30g/m³ with no sample greater than 45g/m³.
 - (c) 90% of the samples taken must have a thermotolerant coliform count not exceeding 10 organisms per 100 mL with no sample exceeding 200 organisms per 100mL.
 - (d) The total chlorine concentration must be greater than or equal to 0.5g/m³ and less than 2.0g/m³ in four out of five samples.
4. Each system must be serviced in accordance with the details supplied in the owner's service and maintenance manuals.

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5. Each system must be supplied with —
 - (a) a copy of this Treatment Plant Approval document;
 - (b) details of the system;
 - (c) instructions for authorised persons for its installation;
 - (d) a copy of the owner's manual to be given to the owner at the time of installation; and
 - (e) detailed instructions for authorised service personal for its operation and maintenance.
6. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.
7. At each anniversary of the Treatment Plant Approval date, the manufacturer must submit to the Chief Executive a list of all systems installed in Queensland that they have received an installation and commissioning certificate for, during the previous 12 months.
8. Where the Chief Executive is notified of any system failures that they believe are a result of poor design or faulty manufacture, the Chief Executive may randomly select a number of installed systems for audit. The Chief Executive will notify the National Association of Testing Agencies (NATA) accredited laboratory nominated by the manufacturer, which systems are to be audited for Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS). The sampling and testing of the selected systems, if required, is to be done at the manufacturer's expense. The following results must be reported to the Chief Executive;
 - (a) Address of premises.
 - (b) Date inspected and sampled.
 - (c) Sample identification number.
 - (d) Biochemical Oxygen Demand (BOD₅).
 - (e) Total Suspended Solids (TSS).
9. The Chief Executive may, by written notice, cancel this approval if the manufacturer fails —to comply with one or more of the conditions of approval; or within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
10. This approval may only be assigned with the prior written consent of the Chief Executive.
11. The Chief Executive may, by written notice, cancel this approval if the manufacturer fails —
 - (a) to comply with one or more of the conditions of approval; or
 - (b) within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
12. This approval may only be assigned with the prior written consent of the Chief Executive.
13. This approval expires on 1 January 2024 unless cancelled earlier in accordance with paragraph 9 above.

Lindsay Walker

Director
Plumbing, Drainage and Special Projects
Building Legislation and Policy

Date approved: November 2019

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SCHEDULE

Attachment 1

Specifications & Drawings for the

Envirotech Aerobic Sand Filter - Secondary Quality Wastewater Treatment System

ENVIROTECH

TREATMENT SYSTEMS

SPECIFICATION OF AEROBIC SAND FILTER A.S.F™ SYSTEM

The specification details below relate to the design layout plan which is presented as Attachment A of this letter.

1 Primary Treatment Compartment

- Liquid Capacity 3900 Litres
- Liquid Depth 1600mm
- Fall - Inlet Level to Outlet Level 100mm

2 Filter Dosing

- Chamber Operating Capacity at T.W.L. 180 Litres
- Liquid Depth between high level and low level float switch operation 266mm
- Normal quantity dosed to A.S. F. 180 Litres - 6 times/day
- Pump - Stainless Steel Submersible Lowara Doc 3
- Float Switches - remote type
 - (i) ON
 - (ii) OFF
 - (iii) High-level Alarm
- Pressure Pipe 25mm dia PVC class 12

3 Aerobic Sand Filter

- Standard filter size is 20m² (8m x 2.5m) based on Long Term Acceptance Rate (L.T.A.R.) for sand - AS1547:1994
- Sand Specification:
 - (i) Effective size diameter 0.5 - 5.0 mm
sieve size on which 10% of sample passes
 - (ii) Uniformity Coefficient $\frac{D_{60}}{D_{10}} < 4$
 - (iii) Fines - particles < 0.075mm < 1%
in size
- Aggregate - 20mm diameter
- Distribution Pipes - 2 parallel lines set in aggregate
25mm dia with 6.5mm dia holes at 600mm intervals
- Underdrain - 100mm dia - 6mm wide slots
covered with 40mm aggregate
- Plastic Liner - 11m x 5.5m Canvacon Polyfabric

Treatment Plant Approval

Approved by: Lindsay Walker
Delegated Authority
Department of Housing & Public Works



Harnessing Technology for the Enhancement of the Environment

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Chris Palmer Environmental Pty. Ltd. - ACN 071 794 440 - A.T.F. The Palmer Family Trust - ABN 07 1 19 150 455
2/24 Hurlingham Place, Bonyo, Brisbane.

ENVIROTECH

TREATMENT SYSTEMS

-Heat welded

-Pipe penetration sealed by waterproof sealing flange

Alarm Light

high water level alarm controlled by float switch

in effluent pump well fixed to vertical riser from pump

4 Effluent Pump Well

- 300 Litres at 450mm water depth
- Pump – submersible Lowara Döc 7 – 125L/m at 7m head
- Float Switches – remote type
 - (i) ON
 - (ii) OFF
 - (iii) high-level

5 Maintenance / Servicing

- The ASF System requires an annual maintenance / service inspection by an Envirotech technician.
- Desludging of the primary treatment chamber will be required every 3-5 years.

6 Copies of ASF System Documentation

- A copy of an A.S.F. System *Commissioning Certificate* is provided in Attachment B
- An example of a *Maintenance Agreement* (Brisbane City Council) is presented as Attachment C
- A copy of the *Annual Inspection Report* is provided in Attachment D
- An electrical wiring diagram provided to the electrician indicating the electrics for the pumps, float switch and alarm light is included as Attachment E

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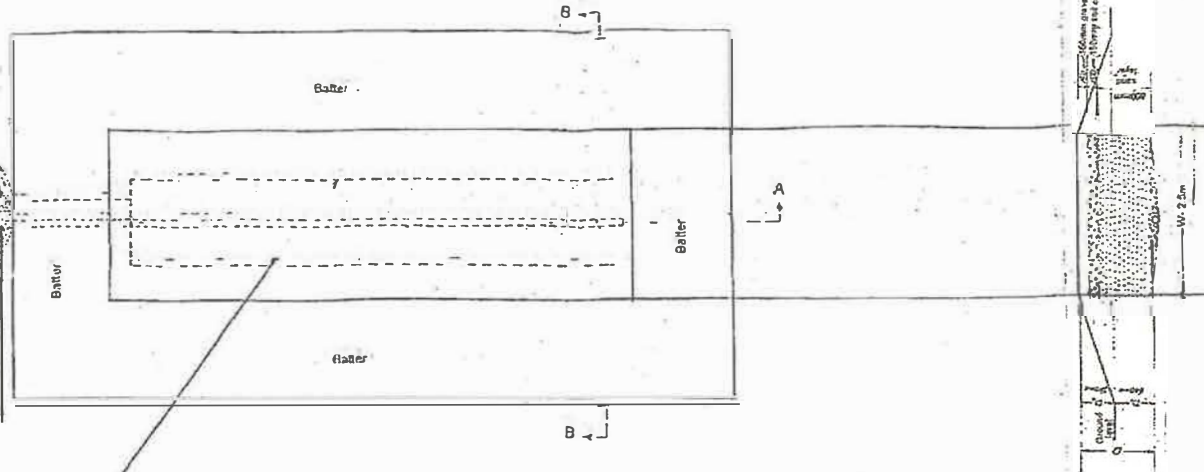
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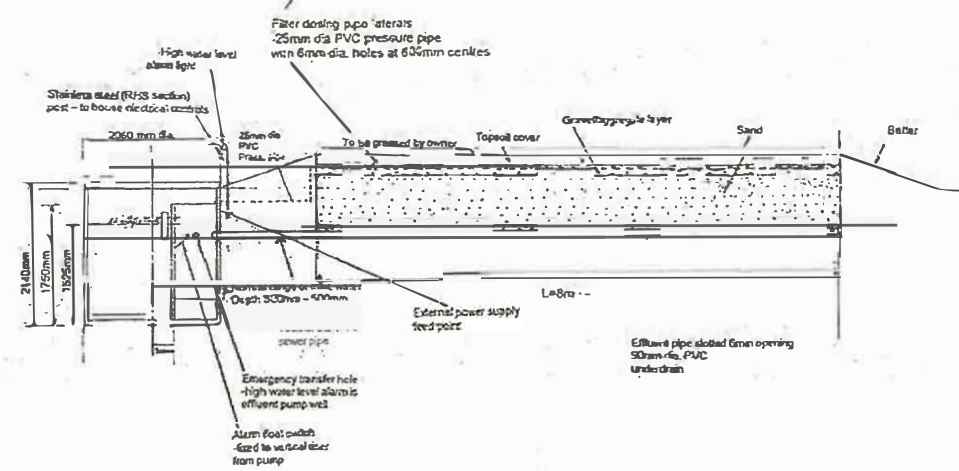
Submersible pump Lowara Doc 3, 310 watt
Automatically controlled by
Attached float switch

CONCRETE TANK with
internal partition walls
-manufactured by
EVERNARD INDUSTRIES Pty Ltd
Internal walls held and sealed
With epoxy compounds
(Labt Composites Approved)

Effluent irrigation pump Lowara Doc 7, 750 watt
(min. size)
20m of above ground flexible hose
provided for distribution of effluent
-automatically controlled by
attached float switch



PLAN



SECTIONAL ELEVATION A-A

SECTIONAL ELEVATION B-B

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 Delegated Authority
 Department of Housing & Public Works



Notes

1. Area top surface of Aerobic Sand Filter = 8m x 2.5m = 20m²
This area is adequate for a maximum of 10 permanent residents. Any configuration of L:W is acceptable provided that the area provided for the occupancy is appropriate.
2. The total overall depth of the Aerobic Sand Filter is 1100mm. The relationship between D₁ and D₂ can be varied - the above values are suitable for a level site.
3. The A.S.F.TM System requires a once yearly service by an experienced technician from Envirotech Treatment Systems.

ENVIROTECH TREATMENT SYSTEMS	
Envirotech Aerobic Sand Filter A.S.F. TM System Wastewater Treatment for Domestic Residents GENERAL LAYOUT PLAN	
Client name	Real property description
Address
Scale 1:.....	Drawn By 1:..... Date:
	Drawing No.

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