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.
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 (BOD$_5$) 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 (BOD$_5$).
   (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
SCHEDULE

Attachment 1

Specifications & Drawings for the

Envirotech Aerobic Sand Filter - Secondary Quality Wastewater Treatment System
ENVIRONMENTAL TECHNOLOGY FOR THE ENSUREMENT OF THE ENVIRONMENT

TREATMENT SYSTEMS

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

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

1. Primary Treatment Compartment
   - Liquid Capacity: 3000 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 286mm
   - Normal quantity dosed to A.S.F. 180 litres = 5 times/day
   - Pump: Stainless Steel Submersible Lowara Doc 6
   - Float Switched = 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 20m^2 (8m x 2.5m) based on Long Term Acceptance Rate (LTHR) for sand - AS1647, 1994
   - Sand Specification
     - (i): Effective size diameter 0.5 - 5.0 mm
     - (ii): Sieve size on which 10% of sample passes
     - (iii): Uniformity Coefficient Du/Du
   - (iv): Finer - particles 0.076mm 215L
     - in size
   - Aggregate - 20mm diameter
   - Distribution Pipes: 2 parallel lines set in aggregate
     - 25mm dia. with 5.0mm dia. holes at 600mm
     - Intervals
   - Underdrain: 100mm dia. - 6mm wide slots
     - covered with 40mm aggregate
   - Plastic Liner: 1.0m x 5.5m Dewatering Polyfabrics

4. Treatment Plant Approval
   - Approved by: Lindsay Walker
   - Delegated Authority
   - Department of Housing & Public Works

Practical Address: P.O. BOX 733 ASHMORE QLD 4214
Phone: (07) 3462 1345 Fax: (07) 3462 1344
Email: envoirtech@envoirtechsystems.com.au

Environment Protection Authority: AEN077 764 434 - A.E.T. Environselect Trust - ABN 07 140 50 488
234 Holland Place, Beenleigh, Queensland
ENVIROTECH TREATMENT SYSTEMS

- Heat welded
- Pipe penetration sealed with waterproof sealing
- Flanges
- 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 DDC 7 - 125L/min at 7m head
- Float Switches - remote type
  - (i) ON
  - (ii) OFF
  - (iii) High-level

6 Maintenance / Servicing
The ASP System requires an annual maintenance / service inspection by
an Envirotech technician.
Inspection of the primary treatment chamber will be required every 3-5
years.

8 Copies of ASP System Documentation
- A copy of an ASP 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
  electrical for the pumps, float switch and alarm light is included as
  Attachment E

Harnessing Technology for the Enhancement of the Environment

Postel Address: P.O. BOX 765 ASHGROVE 4060
Phone: 071 326 0443 Fax: 071 326 3118
Email: chris@envirotech.com.au
Queensland Government
Department of Housing & Public Works

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

Credit Patents Environmental Fty. Ltd. - ACN 071 714 810
A.S.F. The Palms Family Trust - ACN 071 319 405
7/277 Huffington Road, Bayside, Queensland
Treatment Plant Approval
Approved by: Lindsay Walker
Delegated Authority
Department of Housing & Public Works