

# Approval

PURSUANT TO  
SECTION 53M(7) OF THE  
ENVIRONMENT PROTECTION ACT 1970  
CERTIFICATE OF APPROVAL

An approval is hereby issued by Environment Protection Authority ('EPA') under Section 53M(7) of the *Environment Protection Act 1970* ('the Act')

**TO: BIO-LOGICAL WASTE SYSTEMS PTY LTD T/A  
WORMSMART**

**FOR: WORMSMART Models AWSP 1800PF and TWP 1800PF**


**Treatment Type: Primary Wet Composting Treatment System**

This is to certify that the above system ('the system') is a type of septic tank system approved by EPA for the purposes of Part IXB of the Act, subject to the attached conditions.

A separate permit ('the permit') is required from the relevant municipal council before installation, pursuant to Section 53M(5)(b) of the Act. The permit shall govern the dispersal method and maintenance requirements.

**Approval Number: CA 121/11**

**Date of Issue: 20 July 2011**

  
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**ANTHONY CRAIG ROBINSON  
DELEGATE  
ENVIRONMENT PROTECTION AUTHORITY**

**This Certificate of Approval is valid until 20 July 2016**

**unless withdrawn earlier by EPA.**

**SYSTEM DESCRIPTION**

The Bio-Logical Waste Systems WormSmart AWSP 1800PF and TWP 1800PF systems ("the system") collect and treat domestic and commercial sewage and disperses the primary treated effluent to land.

**All Waste Single Pipe (AWSP) 1800 PF**

- I. Treatment system components (see Schematic drawing):
  - a) A 400L collection sump with suitably sized sump pump (where applicable). [The sump and pump are only required where the outlet pipe from the premises is not high enough for the raw sewage to flow by gravity into the inlet of the WormSmart system].
  - b) A 3000L UV-stabilised, roto-moulded polyethylene Everhard tank containing:
    - i. single wastewater inlet pipe,
    - ii. a raised platform consisting of layers of plastic mesh, geotextile and bags filled with plastic media,
    - iii. a 4m high air vent pipe fitted with an insect-proof mesh,
    - iv. an effluent storage chamber with a suitably sized Orange pump.
  - c) an audio-visual alarm with mute (maximum 24 hours) facilities connected to all pumps.
- II. Treatment process:
  - a) Wastewater enters the tank and flows onto an arched plastic mesh in the middle of the plastic and fabric filter platform.
  - b) The solid organic material (bio-solids) builds up on the platform and is aerobically decomposed by worms and micro-organisms, while the wastewater and worm castings particles flow through the bio-solids and filter media and collect in the chamber below.
  - c) Effluent flows into the pump well and is pumped into the land application system.

**Twin Waste Pipes (TWP) 1800 PF**

1. Treatment system components (see Schematic drawing):
  - a) A 400L collection sump with suitably sized sump pump (where applicable). [The sump and pump are only required where the toilet, kitchen or other greywater outlet pipes from the premises are not high enough for the raw sewage to flow by gravity into the inlet of the WormSmart system].
  - b) A 3000L UV-stabilised, roto-moulded polyethylene Everhard tank containing:
    - i. two inlet pipes – one carrying the toilet and kitchen wastewaters, and the other carrying the greywater from the basins, laundry, shower and bath.
    - ii. a two-tiered raised platform consisting of layers of plastic mesh, geotextile and bags filled with plastic media,
    - iii. a 4m high air vent pipe fitted with an insect proof mesh,
    - iv. an effluent storage chamber and suitably sized Orange pump.
  - c) an audio-visual alarm with mute (maximum 24 hours) facilities connected to all pumps.
- II. Treatment process:
  - a) Two pipes transport wastewater from the premises to the tank. The pipe containing the toilet and kitchen wastewaters discharges the influent over an arched plastic mesh in the middle of the filtration platform. A shorter pipe containing the rest of the greywater discharges the liquid through holes in the pipe onto the filter bags on the raised flat section on the edge of the platform.
  - b) Bio-solids build up on the platform and are aerobically decomposed by worms and micro-organisms, while the greywater, wastewater and worm castings particles are treated as they flow through the filter media and collect in the chamber below.
  - c) Effluent flows into the pump well and is periodically pumped into the land application system.

**CONDITIONS OF APPROVAL****General**

1. This approval is valid until 20 July 2016 unless withdrawn earlier by EPA.
2. No modifications or variations to the system may be made unless the manufacturer has prior approval from the EPA in writing.
3. This system can only be installed and used in unsewered areas. Once sewer is available this system must be decommissioned and all wastewater must be connected to sewer.
4. At least six months before the expiry of this Certificate of Approval, a completed Application for Reapproval with all the required documentation must be submitted by the manufacturer to EPA.
5. The system is approved subject to the following activities meeting the requirements outlined in the most recent version of EPA Publication 891 *Code of Practice - Onsite Wastewater Management* (see EPA website [www.epa.vic.gov.au](http://www.epa.vic.gov.au)) and the most recent version of Australian/New Zealand Standards AS/NZS 1546.1 *Onsite Domestic Wastewater Units: Septic Tanks* and AS/NZS 1547 *On-site Domestic Wastewater Management*:
  - a) the design, manufacture, installation and maintenance of the treatment system; and
  - b) the design, installation and maintenance of the land application system.
6. All persons involved in the activities in condition 5 must be aware of and fulfill their responsibilities as outlined in the most recent version of EPA Publication 891 *Code of Practice - Onsite Wastewater Management*. In addition to system designers, manufacturers, installers and accredited service technicians, other responsible persons include:
  - a) municipal council officers that assess applications for permits to install and to use onsite wastewater treatment systems;
  - b) land capability assessors; and
  - c) owners and occupiers of the site where the system is installed.

**Performance**

7. Hydraulic and organic loading:

The system is approved for the treatment of sewage on residential and commercial premises with the following maximum hydraulic and organic loads:

Model	Hydraulic load (L/day)	Biological oxygen demand (g/day)
WormSmart ASWP 1800PF	1800	800
WormSmart TWP 1800PF	1800	800

8. Estimated Electricity Usage for a 4 person household with average wastewater flows and loads:

The system must be connected to a continuous 240V 50hz AC power supply. A weather-proof isolating switch must be provided at the power outlet. The power supply must have its own clearly marked designated residual-current device (RCD) protected circuit breaker in the fuse box with no other appliances connected.

Electrical Components	Power Consumption (Watts)	Daily Hours of Operation	kWh/year	Approx. Cost/yr @ ~ \$0.22/kWh
Suitably sized sump pump (where required)	Typically 350 to 750	0.25	32 - 68	\$7 - \$15
Orange Effluent Pump	350 to 750	0.25	32 - 68	\$7 - \$15
Orange Excavation Pit Drainage Pump	350 to 750	0.1	40	\$3 - \$6

**Permitted End Uses**

9. Dispersal to land via:
- soil absorption trenches;
  - evapo-transpiration beds/trenches;
  - a mound, or;
  - any other land application system applicable for primary treated effluent in the most recent version of the EPA *Code of Practice – Onsite Wastewater Management*, Publication 891 series.

**Installation**

10. When a treatment system is purchased, the supplier must provide or make available to the homeowner a copy of the following documents:
- Statement of warranty and of service life;
  - Schematic drawing and detailed specifications (Attachment A)
  - Owner/occupier's operation instruction manual (Attachment B);
  - Service agreement contract;
  - Sample service report form;
  - A full description of the treatment train and mechanical and electrical component parts;
  - Approval documentation obtained from EPA i.e. this Certificate of Approval CA 121/11.

The premises owner must supply a copy of any of the above documents as required by the local council, as part of the application for a permit to install or to use this onsite wastewater treatment system.

11. Installation of the treatment system must be carried out in accordance with the manufacturer's specifications, this Certificate of Approval and the most recent version of the *Victorian Plumbing Regulations*.
12. The land application system and the pipework connecting the treatment system to the house and to the dispersal area must be installed by a person licensed or registered with the Victorian Plumbing Industry Commission (PIC) in Plumbing (Drainage) work or working under the direct supervision of a person licensed with the PIC, in accordance with the most recent versions of:
- EPA Publication 891 (series), *Code of Practice, Onsite wastewater management*;
  - Australian Standard AS/NZS 1546.1 *On-site domestic wastewater treatment units: Part 1 Septic tanks*;
  - Australian Standard AS/NZS 1547 *On-site domestic wastewater management*; and
  - Victorian Plumbing Regulations*.
13. The electrical components of the treatment system must be installed by a licensed electrician in accordance with this Certificate of Approval and the manufacturer's specifications set out in the Installation Manual.
14. The system must be installed so that easy and ongoing access to all chambers and equipment is ensured for the purpose of inspection and maintenance. All access openings must be watertight and located at ground surface level or above, to prevent the ingress of stormwater.
15. A permanent, legible and indelible notice listing the manufacturer's name and contact details, the model name and number and the date of installation of the treatment system, must be attached to the system in a prominent position.

**Maintenance and monitoring**

16. An alarm system must be installed in an appropriate location to indicate any failure or fault in the system. The alarm must have suitable visual, audio and muting (maximum 24 hour) facilities.
17. The maximum permissible noise level from the treatment system (except the alarm) shall be 40 dB  $L_{Aeq}$  at a distance of 1 m.
18. Maintenance of the treatment and land application system must be carried out in accordance with the manufacturer's specifications by an accredited service technician at 3 months, 6 months and 12 months in the first year after installation and commissioning, and then annually thereafter. An accredited service technician is a person who:
  - a) has been suitably trained by the system manufacturer regarding the installation, operation and service requirements of the system; and
  - b) is accredited by the system manufacturer in writing to undertake the service.

**Reporting**

19. The service technician must submit the following reports to the local council after each inspection:
  - a) treatment system inspection and maintenance reports;
  - b) land application system inspection and maintenance report.

