


(Chris Palmer – Founder Envirotech 1992)

ENVIROTECH
TREATMENT SYSTEMS

Envirotech A.S.F CP *(Chris Palmer)* Signature Series

Low power / Low maintenance
Wastewater Treatment Systems

Aerobic Sand Filtration the **NATURAL choice**



**Owner's Manual
Installation Guide
Service Manual**

INNOVATION ♦ SUSTAINABILITY ♦ LEGACY

Table of Contents

Owner's Manual

1. What is an Envirotech ASF?	2
2. List of Components	3
3. Important Information (Intermittent / holiday use)	3
4. Warranty Information	5
5. The Land Application Area	6

Installation Guide

1. Excavation, Delivery & Placement	7
2. Installing the System	8

Service Manual

1. Servicing and Maintenance	9
2. Specifications	10
(Tank, ASF, Controller)	
3. FAQ's	13



Envirotech is the tried and trusted system

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For over 30 years, Envirotech Treatment Systems have had one clear goal to continually improve on a low power and low maintenance system that performs to the highest standards and keep the environment front-and-center by decreasing environmental impact as much as possible.

While in addition, keeping the system as 'simple as possible' to serve our wide variety of customers with the best in overall cost efficiency over the lifespan of the system. We are extremely excited to introduce our CP (Chris Palmer) signature series, advanced secondary with 'Enhanced Nutrient Reduction'.

What is an Envirotech ASF?

What is the difference between a septic tank, an aerated treatment system and the Envirotech ASF?

Septic tanks use old technology utilising underground trenches and are widely being abolished in most local government areas. They are heavily reliant on good quality topsoil to allow the wastewater to percolate through the soil. In Australia, the soils are mainly weathered over the last 360 million years, and it is difficult to find reasonable quality topsoil over the entire length of the required trenches. Septic tank trenches can pollute ground water supplies and can leak onto lawns with infectious, smelly discharge. This has the potential to cause serious illness, particularly in children and the elderly or infirm.

Aerobic treatment systems are often referred to as the 'generic' stock standard treatment system and can sometimes be cheaper to install, but costs more in the long run with ongoing maintenance costs. These systems use a **continuously operating** mechanical blower **powered by electricity** via diffusers (huge increase of surface area) to recreate the air spaces normally found in good quality topsoil.

The Envirotech ASF is sized to accommodate the required amount of air supply in the voids between the gravels and sands (which are carefully graded and layered). This is replicated inside a dedicated dam liner, where the secondary treated effluent is evenly distributed and then allowed to percolate, creating valuable oxygen for the aerobic bacteria before recirculating back into the system prior to pumping out to irrigation.

What is the average daily power usage?

The *Envirotech* ASF **does not use an air blower**, the filter and effluent pumps run for ONLY 30 minutes per day (approximately).

What are the ongoing costs?

Minimal. The *Envirotech* ASF is the only true install-and-forget system. It is approved for ONCE-A-YEAR SERVICING (other treatment systems require servicing once a quarter).

What warranty is offered on the treatment plant?

There is a 3-year manufacturer's warranty on all electrical parts.

The precast concrete tank and components of the ASF carry a 15 year warranty

(Note: the life expectancy of the sand filter is well in excess of 15 years.)

How will the wastewater be disposed of?

The wastewater has been treated and disinfected and will be disposed of via your "land application area". This area could be above-ground heavy droplet sprinklers, or subsurface irrigation, or various other methods, and will be decided between your local Council and (in most instances) a geotechnical engineer. We will construct the disposal area in accordance with the geotechnical report approved by your council.

Are installations allowed on sewered blocks?

No. Treatment systems can only be installed in areas where reticulated sewerage disposal is not provided

List of Components

Basic elements of the Envirotech system:

Precast concrete all-in-one baffled tank 7,000L capacity 2.45m dia x 2.4m high consisting of PVC pipework, two pumps and an effluent cartridge filter at final stage before pump out.

ASF 9.0m² consisting of washed, clean aggregate media, geofabric & medium course sand.

Effluent irrigation area Types of irrigation — hose and sprinkler; or sub surface irrigation.

Individual system identification information:

Attached to exterior of control box on top of tank. Provides unique serial number and contact information for assistance.



Important Information

Wastewater consists of the following household sources:

- Shower, basin & bath
- Toilet(s)
- Washing machine and laundry sink(s)
- Kitchen sink(s), dishwasher

It is important to be aware of the following harmful products

- Bleaches, disinfectants, hair products
- Bacteroides, acids, alkalis
- Poisons, commercial-strength cleaning products, toxic chemicals

The above listed products can kill bacteria, that is an essential part of the treatment of wastewater in any treatment system.

Intermittent & Holiday use

The *Envirotech* ASF handles both intermittent and nil usage (in holiday periods).

Intermittent use

Because the ASF is the perfect environment for good bacteria to grow quickly —from start-up a complying effluent can be produced in only a matter of days.

During holiday periods

The ASF keeps the good bacteria alive for much longer (generally about 4 weeks with nil usage) without the need for service adjustment.

Important Information

On-going Owner's Responsibilities

1. It is 'good practice' to do the following things at least twice a month to ensure the system is being looked after.
2. Walk around your system and irrigation areas to make sure there are no abnormal wet-spots
3. Check the household switch box and make sure the switch has not tripped
4. Keep a file of all your service records and information on your system
5. When service time is due, contact the supplier or licensed service person to arrange a service.
6. Make sure the service person issues you with a comprehensive service report and if any irregularities are detected the owner should authorize the the necessary repairs to be carried out; with documentation forwarded to the council (this is a legal requirement by the service person)

Responsibilities of Service Person

1. Maintain complete and separate records for all clients
2. The service person must report any implications or faults to the homeowner and if applicable or still within warranty period — pass on to the manufacturer/installer
3. Call on the advice of the installer/manufacturer if needed
4. Provide itemized quotation to the homeowner and obtain authorization before commencing any repairs

Manufacturer's Responsibilities

1. Supply an owner's manual and keep a record of the names and addresses of each install
2. Act promptly on warranty matters and begin a thorough investigation

Warranty Information

Structure	Warranty	Minimum Service Life
Concrete Tank	15 years	20 years
Internal Baffles (concrete)	15 years	20 years
Electrical Components		
Control Box	3 year	5 years
Alarm Panel	3 year	5 years
Filter Pump	3 year	5 years
Irrigation Pump	3 year	5 years

Service life

“Service life” is the time for mechanical and electrical parts to operate before breakdown or failure can reasonably be expected.

Note: the life expectancy of the sand filter is well in excess of 15 years.

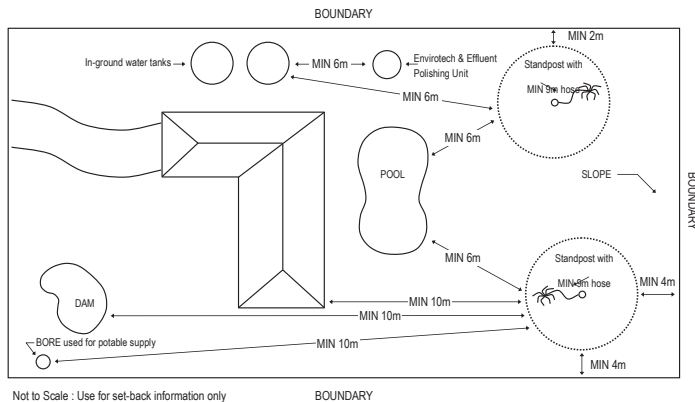
The Land Application Area

Councils require a Geotechnical Engineer Report (Wastewater design) to be carried out **prior** to lodging an application to install a wastewater treatment system.

The irrigation system is constructed in accordance with the geotechnical report approved by your local council. Upon completion, the geotechnical engineer and local council confirm that the irrigation system has been constructed as per the approved report. The irrigation area is then tested upon commissioning the system for use.

The treated water is dispersed through irrigation lines, using the method directed by the geotechnical report. Methods of dispersal vary between local councils, ranging from above-ground heavy droplet sprinklers to pressure-compensating drippers and shallow subsurface irrigation. As per AS1547 the effluent disposal area is a non trafficable or recreational area unless otherwise approved.

In this way nutrients are returned to nature via lawns and gardens. And this also ensures that the area designated as your irrigation area receives the benefit of regular watering, is sustainable and environmentally balanced, and the health and welfare of the occupants and the public at large are protected.



Typical Council Set-Back Distances

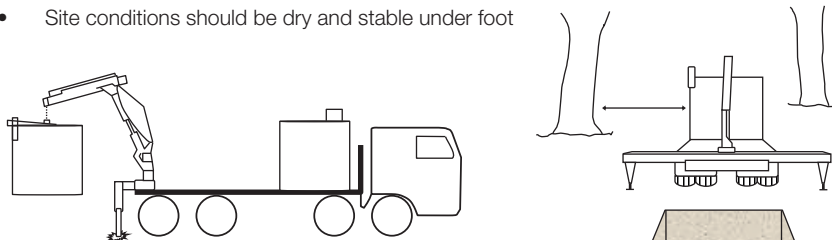
Feature	Set-Back Distance
Water edge of permanent watercourse, farm dams and drainage channel	10 metres
Bore or well used for domestic water supply	10 metres
Dwelling and recreation areas	10 metres
Property boundaries, paths and walkways	4 metres (low side) 2 metres (high side)
Edge of swimming pools and in-ground water supply tanks	6 metres

Excavation, Delivery & Placement

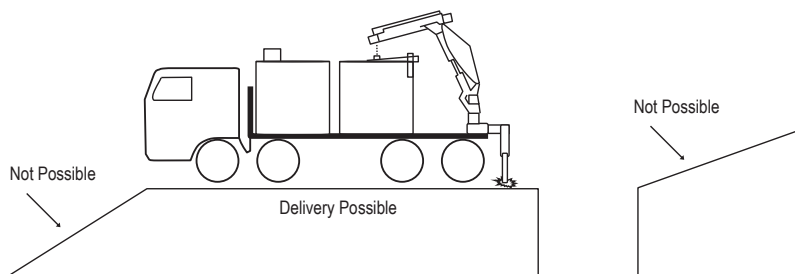
In most areas, the tank will be delivered by a truck equipped with a crane located at the rear of the vehicle. Such a vehicle will back up to the tank site, then lift and slew the tank into position behind the vehicle before placing the tank into the prepared excavation.

Make sure the truck has access to your site and observe the following requirements:

- 4.8m needed to pass under trees and power lines
- 3.0m needed between gateposts
- Site conditions should be dry and stable under foot



To enable the tank to be unloaded, a distance of 6m in diameter around the truck will be required. This will also allow enough distance for the crane's outriggers (legs).



Important Notes

- Tanks will not be lifted over houses, sheds or other property of value, nor will they be lifted under low power lines.
- Tank sites that are cut out of sloping hills will require an adequate flat area for the truck to unload. Unloading on awkward and dangerous sites will be at the driver's discretion.
- Safe and clear access is the total responsibility of the customer.

NOTE: Do not act solely on the basis of the material contained in this leaflet. Items herein are general comments only and do not convey advice. We therefore recommend that the advice of the crane truck operator be sought before acting in any of these areas.

Installing the System

Component	Dimensions
Tank hole	3.0m x 3.0m x 2.4 deep with 100mm crusher dust
Precast tank	2.4m dia x 2.4m high + tank lid .75m = 3.15m TOTAL
ASF dimensions 9m ²	6m L x 1.5m W x .9 deep OR 3mx3m

Excavation and Backfilling

The following directions and recommendations are to be followed:

- Site preparation drawings show excavation walls to be perpendicular. However, depending on soil conditions, the excavator may need to angle or retain the side walls such that they don't cave in during installation.
- Sand or excavated material/spoil with maximum particle size of 50mm is used.
- The base of the septic tank is to be placed on a 100mm levelled layer of sand or 5ml aggregate.
- Ensure that sand or excavated material does not fall on the lid of the tank, as this will fall into the system through the manholes and clog the system and irrigation pump.
- Following placement, the loose backfill material must be kept at least 70mm below the surface of the tank lid.



Safety Except for the persons responsible for lifting and positioning the tank, there must not be any person within 20m of the installation site during lifting and positioning.

Filling with Water

- After backfilling, all chambers except the filter pump well must be filled with water. Ensure that the tank's separate compartments are raised equally at no more than 600mm increments. Fill the filter pump well to the top of the pump, this chamber's working level is at the bottom of the pump float.
- If the tank is not filled with water, it could hydraulically lift out of the ground during wet conditions.
- If our quotation does not include the excavation service, then it is the responsibility of the customer to ensure that the tank is filled with water after backfilling. We will not accept any responsibility if this action is not carried out.
- Water in the system is also required in order for the treatment system to be commissioned for use.
- Potable water must be used.

Servicing and Maintenance

All sewage treatment systems require regular maintenance to ensure that the effluent quality consistently meets the standards set by the regulating authority, and a maintenance program is stipulated by your local authority in the interests of environmental health and safety. Failure to have these stipulated services carried out could result in a breach of public health legislation.

The *Envirotech* treatment system is approved for a **once-a-year maintenance inspection**, or as directed by local government. We will contact you around the first anniversary of the system's operation to arrange an annual inspection, and emergency after-hours attendances are simply a phone call away.

In addition to general maintenance, various water quality tests are conducted at this annual inspection, and records are kept. Reports are sent to regulating bodies in order to comply with their conditions of approval.

Annual Inspection

At each annual inspection, we will inspect and report on:

- the condition of the irrigation and filter pumps
- the condition of all pipes, hoses and effluent filter
- the efficiency of the irrigation sprays/system
- the condition of the electrical systems, including alarms
- sludge levels

Onsite tests of water quality (clarity, pH and free residual chlorine) will also be performed, and a report provided to you and your local council.



Home Owner Requirements

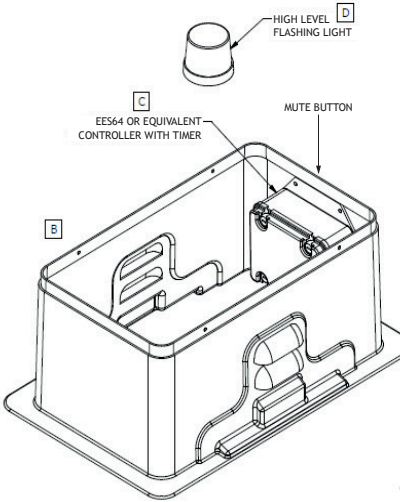
The home owner will be licensed by their local Council to be entirely responsible for the operation and maintenance of the plant. The existence of a service contract does not transfer the responsibility from the owner to the supplier or service provider.

Ensure the warning signs are clearly visible by maintaining your land application area free from weeds and debris.

Regular visual checking of your *Envirotech* system's exterior and irrigation system will ensure that most problems are located and fixed early. Some visual signs of the land application system failing include surface ponding or run-off of treated wastewater; soil quality deterioration; poor vegetation growth; and unusual odours.

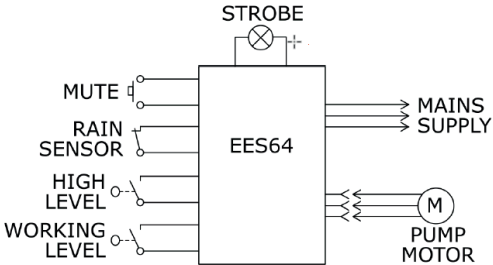
Specifications

Controller manufactured in accordance with AS3105



Size	170 x 210 x 90mm
Weight	0.95kg
Supply Voltage	230VAC +/- 10%, 50Hz
Power Draw (controller only)	5W max
Pump Output	230VAC, 1200W max
Strobe Output	12VDC nominal, 200mA max current
Float Switch Inputs	12VDC into 1200 Ohms input impedance
Rain Sensor Input	12VDC into 1200 Ohms input impedance
Mute Button Input	12VDC into 1200 Ohms input impedance

Wiring Diagram

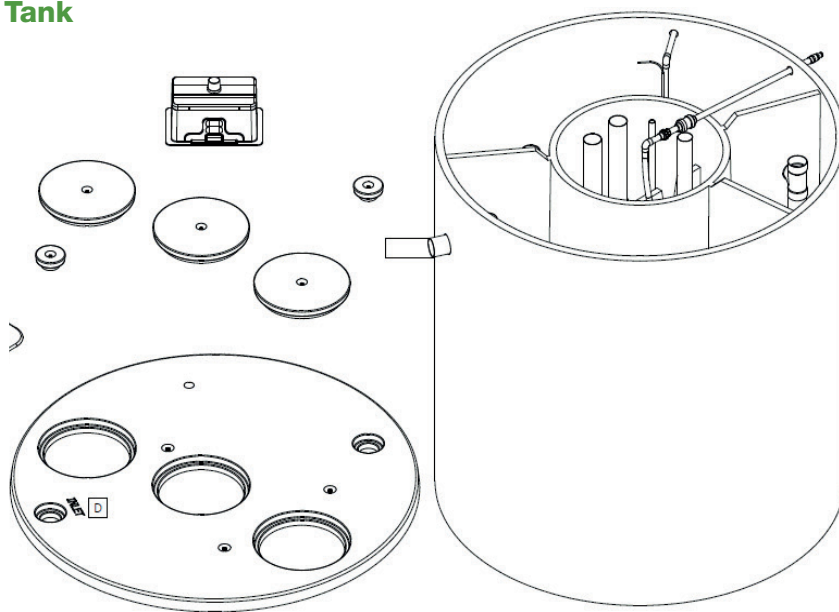


ASF (Aerobic Sand Filter) (from top of ASF to bottom)

150mm	Sand	Medium course
1x layer	Geofabric	A12
100mm	20mm	Clean washed aggregate
600mm	5mm	Clean washed aggregate
150mm	20mm	Clean washed aggregate

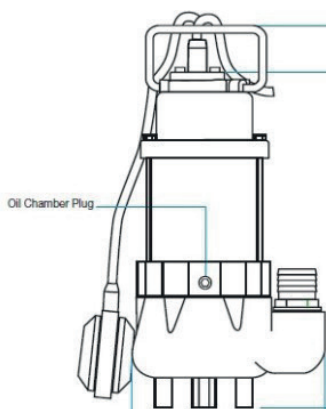
Specifications

Tank



Precast tank external dimensions
 2.4m dia x 2.4m high + tank lid .75m = **3.15m total height**

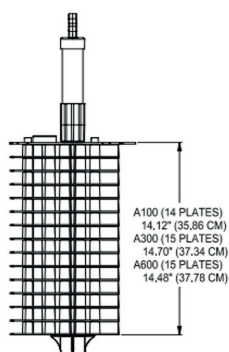
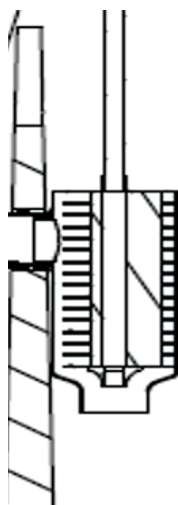
Pumps



Amps	2.8
Rated Flow	132 L/min
Maximum Flow	235 L/min
Soft Solids	20mm
Cable Length	10m
Weight	9 KG
Watts	250
Rated Head	6m
Maximum Head	10.5m
Operation	Auto
Outlet (Mm)	40
Size (Mm)	190 x 130 x 320

Specifications

Effluent Filter



8" FILTER PLATE
4.25 FT. OF FILTRATION
PER FILTER PLATE

FAQs and the Envirotech Difference

What happens to solids in the system?

Solids represent approximately 0.1% of household wastewater, which the systems continually reprocess until it forms a layer of residual ("sludge"). After a number of years the accumulated sludge will need to be removed from the system. Your service technician will advise you when de-sludging is required. Generally it is every 7-9 years for the *Envirotech* CP Signature Series.

Do I have to do any maintenance to the system?

Your service provider will provide all the maintenance requirements for the system, leaving you free to enjoy your lifestyle. However, you are required to ensure the irrigation area is free of weeds and debris at all times. Full information on this is contained in the "important information" section of this document. Your service technician will also assist you as much as possible .

Can I locate the tank away from my house?

Yes, provided the correct fall can be achieved (sometimes with the use of riser rings), generally speaking the tank can be located where you choose.

What happens in a power failure?

Other treatment system manufacturers request that you NEVER turn the power to your system off. However, because the Envirotech ASF treats the wastewater without the use of an electric blower, no harm will occur to the system and the bacteria will continue to process the waste. When the power is reconnected, the system alarm should clear itself within 12 hours.

How much noise comes from the system?

The Envirotech ASF is designed for silent running. There is no noise from the system.

What do I do with the system when I go on holiday?

Nothing at all; it will keep on quietly working while you're away.

A stylized, handwritten signature of Chris Palmer in black ink, positioned above a solid green horizontal bar.

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