

7 Appendix C – Effluent System Report

The proposed development is utilising the existing site effluent system. When originally installed in 2011 the system was sized to incorporate both the existing house and any future development to occur on site. The existing house is a 3 Bedroom residence (please note that there is **NO** Study), and the proposed Granny Flat is a 2 Bedroom structure.

The existing effluent system was designed for 5 Bedrooms, which is the total number of Bedrooms on site once the construction of the Granny Flat has been completed.

The following specification is for the existing system. The NSW Government Health Certificate of Accreditation, Aerated Wastewater Treatment System for the Ultra Clear ST10 Wastewater Treatment System is also attached.

Ultra Clear ST10 Wastewater Treatment System

Ultra Clear ST10 Domestic/Commercial Aerated Wastewater Treatment System

General Description

The Ultra Clear model ST10 Aerated Wastewater Treatment System (AWTS) is designed to treat the wastewater from a residential or commercial property, of a maximum of 10 persons. The Ultra Clear ST10 AWTS is contained in a single vertical axis type cylindrical precast concrete collection well with a design capacity of 7100 litres. An Ultra Clear ST10 will treat up to 2000 litres per day. Manufactured to comply with Australian Standards to AS/NZS1546.1:1998.

Features

- Large contact chamber
- Dual aeration chambers to prevent short circuiting
- Large self-cleaning pump chamber
- Specifically designed media pack
- Battery back-up alarm with 24hr mute reset
- Fully automatic operation
- High quality long life irrigation pump
- Energy efficient Air pump
- High quality concrete construction of tank & internal baffles
- Access to all chambers, enabling complete maintenance.
- Australian owned and made

How the system operates

Primary Treatment

All wastewater and solids from the house, including bath, shower, toilet, washing machine, dishwasher, etc., enter primary chamber where the digestion process takes place. The presence of anaerobic micro-organisms quickly multiplies to

break down faecal solids to an inert waste. To maintain the highest level of anaerobic action in the primary chamber, the exclusion of certain chemical and anti-bacterial cleaning products is important.

Aerobic Treatment

The aerobic treatment consists of two chambers with media pack fixed below water level. Oxygen is supplied to the liquid through diffusers to produce an aerobic state. Microbes quickly form and attach to media pack. These microbes, called aerobes, clean the water as it passes through.

Disinfection

Although clear, the clarified water will contain some pathogens which need to be removed. Water flows through a regulated chlorination device to the retention chamber, removing final bacteria before flowing into the pump chamber.

Surge control

There is an allowance for water to rise and fall throughout the entire system by up to 250 litres, to reduce water surging through the aeration/settling chambers, allowing complete treatment of effluent.

Settling Chamber

Suspended solids are allowed to settle under still conditions. Settled particles (referred as sludge) return automatically to primary chamber inlet, by venturi device, which is set by the service technician.

Sludge Return

The settling sludge in the sedimentation chamber is returned to the primary inlet of the septic chamber.

Effluent Disposal

Treated effluent is automatically pumped out to gardens and lawns, disposal method is to comply with local council requirements as stated on approval to operate conditions.

Product Usage

Aerated systems, like all sewage treatment/disposal systems are biological, if a product destroys bacteria in the house, it will destroy the bacteria needed for the sewerage treatment. So it is important to avoid products with bleaches and ammonia entering the system.

Maintenance Requirements

The system must be Assessed every 3 months as required by NSWHD and local Councils, by suitably qualified service provider company such as Five Star Services Pty Ltd.

Warranty

15 year warranty on Tank & Baffles - 2 Year warranty on Electrical & parts