



Below are a series of answers for questions that are repeatedly asked at Council level.

1. How long does it take to do a service call?

Time needed onsite.

Minor service - 1 hour

Major service - 2 hours

Can entail time spent at service centre for pump and cell servicing.

2. What is involved when you do a service call?

Minor service -

Check function of all mechanical components,

Brief inspection of functioning of cell biology,

Cell replacement (if necessary), pressure cleaning of tanks and pump out of "cleaning water" to either soakaway or sewerline. Quick check of irrigation system and replacement of UV tube.

Major service -

All the above,

Replacement of worn mechanical components - eg pumps or solenoids.

Flushing of irrigation system (if needed)

3. What happens to the exchange cells and its media content?

Organic medium is a resource for Service Centres vermicompost / compost system.

Some fabrics are re-usable and will be returned to the AquaReuse manufacturing centre.

4. Are all overflow lines connected to the sewer and where are they placed in our system?

Where possible they are connected to the sewer, where not, they will run to an overflow soakaway system.

Overflow lines are connected from each tank.

5. In instances that the system is connected to the sewer, where do you ensure that problems emulating from the sewer do not enter into the system.

The filter must be positioned on a level higher than the sewerline in order for this diversion to be possible. A simple hinged flap system is used to ensure that backflow is largely excluded in instances that the sewerline might backup to the house. In such instance the householder will be made away of this failure at the toilets to the house will not be able to flush and the council will be notified.

In locations where it is not safe to divert to the sewerline due to limitations in levels, the overflow will be taken to a lower lying soakaway system.

6. What is the dimensions and weight of the filter system?

Cell weights will not exceed 25kg

7. How big an area is required for excavation? After it has been filled is there any possibility that the excavated area can fill with outside water in times of heavy and continuous rain?

Excavation needs to accommodate 2 tanks each with a diameter of approx 1.6m and the filtration system that approximately 1.4 x 1.4 metres.

The tanks have been designed such that they are self anchoring due to their inverted wedge design. Their shallow draft also reduces these forces.

8. Can the filter be placed below the ground?

AquaReuse have decided on the above ground placement in order to prevent any catastrophic failure in the event of a pump or power failure. This is for the user's benefit and the filter medium's protection.

9. What brand and type of pump do we use?

Davey pumps are our preferred option, but AquaReuse reserves the right to use the most reliable and cost effective pumps for the system.

10. What plumbing is involved to divert to sewer, irrigate the land application system, connect to the inside toilet, and activate stored water for above and below ground use?

A sump pump is used to dose the incoming greywater to the filter.

The treated water is then fed by a gravitation system through the UV system. The flows through the UV system have been regulated by careful design to ensure the desired exposure time needed for guaranteed disinfection.

A third multistage irrigation pump delivers the water to the irrigation system and is triggered via a pressure sensor to ensure that the line to the toilet system is kept supplied and pressurised.

11. How does the alarm system operate?

Various factors will activate an alarm state. These range from pump problems to distribution irregularities to UV lamp malfunctions. An alarm state initiates a dialup to the control centre. The units phone number is registered and the installation number and details are forwarded to the responsible service centre.

12. Where are pump floats and flow controls located? Do we have release valves and how does the overflow system operate?

Answered in the above questions.

13. Where would you fit an irrigation controller and how does it cut in/out?

A simple irrigation controller is integrated into the control system.

Without it the system will pump the re-use water to the irrigation system once water was present in the re-use water tank. This is generally what is found in other onsite wastewater treatment system.

The integrated irrigation system opens a solenoid during the early morning hours (02h00) and sends any available water to a chosen irrigation source.

A low level float will switch off the pump and ensure that there is enough water residing in the tank to supply the toilet system if that option is installed

A complex irrigation controller is an additional component that can easily be installed and integrated into our system.

The irrigation controller system will vary in its intricacy according to the device selected. Generically the irrigation controller will do the following.

It will control solenoid switches during selected times of the day. It will distribute water to various sections in the garden via these solenoid valves (depending on the complexity of the setup)

If fitted a moisture sensor will stop irrigation during times of soil saturation (eg during heavy rainfall periods)

In the event that this occurs, the reuse water will either overflow to the soakaway or sewerline.

14. Can solar power be used to drive the pumps?

It is possible and if the market pressures indicate that such a solution be found, AquaReuse will develop this alternative.

15. What is the height of the filter? Fences vary from 1.2- 1.8 metres.

One option is that the filter is housed with a small garden shed. Small garden sheds can be found in gardens throughout Australia and are an accepted aesthetic feature.

We have designed a low set containment option that is approximately 1.6 meters high by 1.2 meters wide.

A deluxe system is also offered that will resemble a packed stone wall structure and will also be approximately 1.6 meters high by 1.2 meters wide

16. Do we have a system that is suitable for multi storey -development for high rise apartments?

We have a solution that will be suitable for multi story developments, but it still needs to go through a rigorous design, R&D and product testing stage before it will be launched.

17. How noisy are the pumps?

Two of the pumps are submersibles and are inaudible in most installations.

18. How is the filter made childproof from the little people?

The lids on each tank are locked. Access to the housing of the filter system is by lock and key.

19. How and when can the Council make use of the system in a commercial application? ie. Baby Health Centres owned and operated by the Council.

The domestic system is rated for 800 litres per day. If a facility produces flows of this amount, then the AquaReuse system can be purchased after the company has launched the product.

20. General opinion is that people want a simple system. Experience says they will take the system for granted (do not want to know about it till something goes wrong.)

The AquaReuse greywater treatment system is designed with this in mind. The system requires no intervention from the user. The only responsibility that the user has, is to ensure that the normal household power supply is delivered to the system.

Furthermore they must refrain from putting fuels or solvents down the drain, or discharging of unusually large quantities of powerful disinfectants into the system. The filter can accommodate the detergents and normal use of household disinfectants, but like any biologic system is detrimentally effected when subjected to large quantities of toxic substances.

Anyone who wants to have access to a high quality reuse water that is produced from their own wastewater should be able to accept these terms and conditions. If they find these unacceptable then the need to dispose of their toxic wastes precludes them from any wastewater treatment and reuse system.

21. Outdoor hosing will eventually go to stormwater, which is unacceptable. What is the best way to overcome this problem?

The largest proportion of water is going to go to irrigation, and then for toilet flushing. The amounts of water running into stormwater from outdoor hosing will be minimal. When taken into consideration that this water although fairly high in nutrients is cleaner than the majority of water flowing into the stormwater system, this is an insignificantly small source of nutrient pollution to our stormwater outflow system. Run-off from areas that have had inorganic fertilizer applied to them are more likely to be a bigger source of nutrient pollution to stormwater run off.

22. Why do we use greywater generated from the kitchen when authorities tell us that the high solid content will hinder or clog the system.

Unlike conventional greywater treatment options, the AquaReuse greywater treatment system is easily able to treat typical kitchen greywater.

Research has shown that it is only in exceptional circumstances with very high oil and fat levels (typically emanating from commercial kitchens) that our filter beds struggle to handle greywater of this nature.

In such cases where we might have an installation that is needed to treated other sources of greywater, it is our policy not to connect the wastewater from commercial kitchens to our installations, but to rather direct it to the sewer line.

The advantage of treating the wastewater generated from kitchens, is that the food waste often contains large amounts of macro and micronutrients that are very beneficial to soil and plant life when present in an effectively treated reuse water.

23. Do we need a grease trap?

A grease trap is not needed prior to a domestic AquaReuse greywater treatment system.

If a grease trap is present before installation in a domestic house situation, it should be bypassed as large amounts of fat that have been built up over years can become dislodged and be shed onto the filter with the potential of causing undesirable stresses to the biological communities present in our filter system. In exception circumstances, failure can occur and any maintenance to the system in cases where this has found to occur will result in the homeowner being charged for extra maintenance costs resulting form these unscheduled call outs.

24. What happens to the suspended solids contained in the kitchen wastewater?

The suspended solids are either digested or captured and integrated into the filter bed. Some of the suspended solids are less digestible and might need to be removed during normal maintenance procedures.

25. Do nappies washed in laundry tubs present a challenge.

No. The faecal matter is digested in the filter and any residual faecal coliforms and e.coli is eliminated during as it passes through the UV treatment system.

26. How long does it take for the greywater entering the filter to become available for reuse?

Any greywater entering the system is drawn into the filter beds and displaces water that have been previously held in the filter beds. In this way water entering the system takes approximately a day to make its way through the disinfection system to the final water storage tank from where it is available for reuse.

27. Given that the system is enclosed how does aeration of the process take place?

The enclosure in which the filter resides is vented to the outside by vents positioned at the bottom and the top of the enclosures sides. In this way ventilation to the inside of the containment enclosure is ensured.

Ventilation into the beds is by clever design of the cells within the filter, whereby the organisms can discharge their spent respiratory gases, and in the same way fresh air is drawn into the beds to replenish necessary source of oxygen.

28. What happens to the system when it is not used for a while

The system has been found to function well without any inflow of greywater for periods of approximately two months.

Despite this finding, AquaReuse have designed a protection system whereby water is recycled within the system in small quantities on a daily basis. This will ensure that even after periods of 3 to 6 months of the system being unused, the health of the filter beds will be guaranteed.