



NATURALFLOW™

Worm-based Wastewater System
with Power-free Treatment



Owner's
Manual

NaturalFlow Wastewater Systems

Owner's Manual

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To the Owner

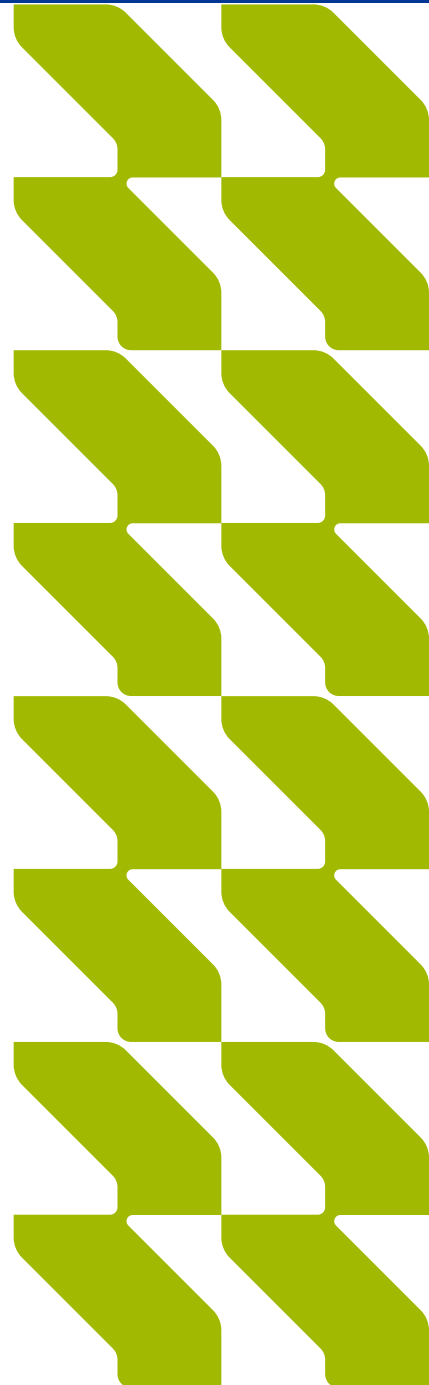
Thank you for choosing a NaturalFlow System to treat and care for your on-site sewage and wastewater.

NaturalFlow is a truly natural living system that uses well-established, sustainable processes to treat both solid and liquid waste. Nature is one huge recycling mechanism and NaturalFlow harnesses these forces that have been working together for thousands of years and continue to do so today, working with our environment, to treat your wastewater. The system does not draw on any other resources and does not use external power in any of the treatment processes.

We encourage you to monitor and care for your NaturalFlow system yourself with our backing and support and by doing so you will learn how your system works and operates and how to keep it in top working order. As with all living organisms a little care and supervision will ensure that it will run at peak performance for many years.

The system accommodates and works with all of today's conveniences such as conventional toilets, 'waste master' units from the kitchen and more. All domestic wastewater can be taken care of and even on steep and difficult sites with poor soakage; NaturalFlow will deliver consistent results year after year.

Kind regards,
The WaterFlow Team



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WaterFlow NZ Ltd Warranty

WATERFLOW NZ LTD warrants that the Waterflow NZ System will be free from defects in materials and workmanship for the following periods from the date of installation, under the following conditions:

1. Plastic-Moulded tanks: 15 years
2. Concrete Tanks: 15 years
3. Filter media: 5 years
4. Dosing float: 2 years
5. Electrical components and Pump: 2 years

WATERFLOW NZ LTD will, at its discretion, repair or replace any defective components with the same or equivalent part at no charge to the consumer, in accordance with the full terms.

Note: Full warranty document available at your request.

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Components of Your Wastewater Septic System

A typical wastewater septic system has two main components: a Wastewater and Sewage Treatment System and a Land Application System (or disposal field).

NaturalFlow is a vermifiltration system. It uses composting worms and other biological processes to treat and reduce the solid content of the wastewater using decomposition. The NaturalFlow System treats and reduces the solid content of the wastewater by up to 95%. The wastewater liquid then flows to the disposal field, where it percolates into the soil, and microbes provide final treatment by removing harmful bacteria, viruses, and nutrients before it eventually reaches the ground-water ecosystem, and the cycle begins again.



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Service Agent Role

Your NaturalFlow System requires annual service and maintenance inspections unless otherwise specified by local regulations. This will need to be done by our trained technicians. We will phone to arrange a suitable time to attend to your servicing needs. Servicing done by technicians who are not approved by WaterFlow will void your Warranty.

A record sheet (in duplicate) will be completed by our technician at the time of service. One copy is for you the customer and available upon payment, the other copy will be retained for our records.

Please call our office for the cost of servicing after the initial 12-month period.

Servicing includes:

1. A general inspection of tank area, irrigation and drainage.
2. Inspection of electrical equipment including irrigation pump, warning lights and connections.
3. Inspection of the Wormerator, Grey Water Tank and Dosing Chamber. Test pump or syphon and de-sludge dosing chamber.
4. Inspection of irrigation including lines. We will notify you of any additional requirements as required.

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Owner Care Role

Did you know...

...that as a homeowner you're responsible to make sure your wastewater system gets the required maintenance needed to protect the investment in your home? This guide will help you care for your wastewater system. It will help you understand how your system works and what steps you can take as a homeowner to ensure your system will work efficiently.

The owner is greatly encouraged to maintain a monthly visual check of the operation of their system and to make sure their land application systems are maintained in good condition.

1. Industry recommendation is to have a maintenance contract in place at all times
2. Visual check of treatment system
3. Visual check of land application system
4. Notify your approved service provider of any issues

Intermittent Use

NaturalFlow is quite tolerant of the intermittent loadings expected from holiday homes where nobody is living in the home for up to several months and will operate without any decline in performance. However, we recommend that if your system is not used for more than 12 months you organise for a maintenance inspection by a WaterFlow technician during which the level of worm activity can be assessed, and additional tiger worms added if required. This could of course be done as part of the standard annual service.

Efficient Water Use - it really does make a difference

Average indoor water use in the typical single-family home is approximately 180ltrs per person per day. The more water a household conserves, the less water enters the septic system. Efficient water use can improve the operation of the wastewater system and reduce any risk of disposal field overload.

Washing machines

By selecting the proper load size, you'll reduce wastewater. Washing small loads of laundry on the large-load cycle wastes precious water and energy. If you can't select load size, run only full loads of laundry. N.B. A new Energy Star washing machine uses 35 percent less energy and 50 percent less water than a standard model.

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Inspection Checklist

When checking the system operation, take particular note of;

1. Worminator build-up. Six monthly level should be no higher than 200mm below inlet pipe (simple observation through lid adequate).
2. Field performance, particularly looking for any undue odours or effluent breakout (flush field lines 2-3 monthly).
3. All electrical parts (if applicable). Ensure all pump alarms are working.
4. Check Grey Water and Dose tank outlet filter for any build-up.
5. Clean disc filter 2-3 monthly (if applicable)

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Care for your Land Application System (LAS / Disposal Field)

Your disposal field is an important part of your wastewater system. Here are a few things you should do to maintain it:

- Flush driplines regularly - every 3 months recommended
- Mow your disposal field and maintain plantings regularly to ensure access to flushpoints etc.
- Plant only recommended wetland plants over and near your wastewater system. Roots from nearby trees or shrubs might clog and damage the disposal field
- Protect both the treatment system and the disposal field from vehicle traffic, including livestock to avoid damage to the pipes, tank, or other septic system components.
- Do not build any structures over it or seal it with concrete, asphalt etc
- Keep roof drains, basement sump pump drains, and other rainwater or surface water drainage systems away from the disposal field. Flooding the disposal field with excessive water slows down or stops treatment processes and can cause plumbing fixtures to back up
- Trees with very aggressive roots, such as willows, should be kept well away from the disposal field
- A soggy disposal field won't absorb and neutralise liquid waste. Plan landscaping, roof gutters and foundation drains so that excess water is diverted away from the disposal field



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Effects of Household Cleaning Chemicals

Use of many cleaning chemicals in facilities served by on-site disposal systems, can result in high concentrations of the constituents in those cleaning agents being discharged into the receiving soils. These chemicals and constituents can have a massive impact on the quality and condition of the receiving soils over time.

Many of the chemicals can disrupt soil structure and decrease hydraulic conductivity while others can act as bactericides, destroying the essential micro-organisms required to achieve the high level of biodegradation in the treatment and disposal systems.

The following matters need to be considered when using cleaning agents in a domestic situation:

- Laundry powders are often extremely high in sodium which will destroy the salt balance in the soils. Check the labels for low sodium and phosphorous contents.
- Wastewater flow from dishwashing machines can have an impact on wastewater treatment systems, in terms of the strong cleaning chemicals used, so check labels for low sodium products
- Highly corrosive cleaners (such as toilet and drain cleaners) that have precautionary labels warning users to minimise direct contact, are an indication that they can adversely affect the wastewater treatment system. Up to 1 cup of bactericides such as bleach can be sufficient to impact on all the micro-organisms/bugs in a septic system.

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Substitutes For Household Cleaning Chemicals

Use of the following readily biodegradable substitutes for common potentially harmful household cleaning chemicals will reduce the stress on any wastewater system, significantly enhance the performance of the whole system and increase the life of the land application system, while reducing the potential effects of the receiving soils.

General Cleaners

Use soft soap cleaners and bio-degradable cleaners and those low in chlorine levels. Contact us for a new biological cleaner that will help you system.

Ammonia-Based Cleaners

Instead sprinkle baking soda on a damp sponge.

Disinfectants

In preference use Borax (sold in most Bin Inn stores): ½ cup in 4-litres of water.

Drain De-Cloggers

Avoid using de-clogging chemicals. Instead use a plunger or metal snake, or remove and clean trap. Contact us for very effective, worm friendly, drain cleaning products.

Scouring Cleaners and Powders

Instead sprinkle baking soda on a damp sponge or add 4-Tbs baking soda to 1-Litre warm water. It's cheaper and won't scratch.

Toilet Cleaners

Sprinkle on baking soda, then scrub with toilet brush.

Laundry Detergent

Choose one with a zero phosphate content and low in alkaline salts (in particular, a low sodium level) and no chlorine.

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Do's and don'ts

DO

- If your system requires power supply make sure this remains on continuously
- Wipe and bin your fats and frying oils rather than rinsing them down the drain
- Check faucets and toilets for leaks; make repairs if necessary
- Use low flush toilets where possible
- Use a 'displacer' to reduce the amount of water needed to flush older toilets
- Use aerators on faucets and flow reducer nozzles on showers to help lower water consumption
- Reduce water levels for small loads of laundry
- Wait until the dishwasher is full to run it
- Perform regular monthly visual checks of your system and field
- Keep records of all maintenance undertaken on the wastewater systems

DO NOT

- Switch off power unless servicing
- Use cleaners high in chlorine, phosphorous or ammonia in toilets or kitchen sink
- Pour any toxic/strong chemicals (paint, oil, grease, paint thinners or pesticides) down any drains
- Pour strong or large volumes of acid down any drains. These include: vinegar, brine, lemon juice.
- Flush down your toilet - Dental floss, feminine hygiene products, diapers, wipes, cotton swabs, cigarette butts, cat litter, dog poo, and other kitchen and bathroom items. Flushing household chemicals, gasoline, oil, pesticides, antifreeze, and paint can also stress or destroy the biological treatment taking place in the system or might contaminate surface or ground waters.
- Discard any drugs down the sink or toilet
- Put food scraps or lawn clippings into Wormerator
- Alter or add any part of your system without Waterflow NZ LTD's approval

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Troubleshooting

To ensure the most effective operation of your NaturalFlow System you should familiarize yourself with the contents of this manual. NaturalFlow has been designed to include additional safety margins and minor mishaps and normal household usage will not usually affect the operation of the system.

Problem	Potential Cause(s)	Remedial Action(s)
Alarm sounds (will indicate audible or visual alarm)	Irrigation pump not working No power at the system Pump running but water level not dropping	Check power source and wriggle pipe from pump to ensure float is not stuck Check your fuse board Open the taps on your drip field to assist water exiting faster High level float switch in the pump well may be triggered - the alarm will reset after the water level in the sump subsides If your system has a disc filter, remove and clean it If everything all looks to be ok, it may be a faulty alarm sensor (mute alarm and contact your service provider.
Water around tank	System overflowing Storm/Surface water	Check there is power on at the system Divert Storm/Surface water away from the system
Persistent odours	Worm activity is minimal, if any Filter bed is overloaded Too much water usage Excessive chemicals in use Gully traps dried out or non-existent (if the bathroom does not get used often, the water can evaporate out of a gully trap allowing odour to escape into the house).	Add biologic starter pack, including worms (if required) Stop fats, oils, and grease going down the drain Reduce water usage or install water saving devices Avoid using nasty chemicals (Eco store, Earthwise, Ecobeings and Dishpod are great options) Run water down drain to ensure gully trap is blocking odour

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Problem	Potential Cause(s)	Remedial Action(s)
Irrigation system not working	<p>Irrigation pump not working</p> <p>Irrigation lines kinked or blocked</p> <p>Saturated areas at the end of the irrigation field</p>	<p>Check power source and wriggle pipe from pump to ensure float is not stuck</p> <p>Locate all flush valves, check if water is exiting</p> <p>Flush irrigation line and remove kinks or blockages</p> <p>Turn flush valves off to avoid further saturation</p> <p>Check if any large machinery has driven over / near it</p>
Water ponding on irrigation field	<p>Storm/Surface water</p> <p>Irrigation line blocked</p> <p>Excessive water use</p>	<p>Redirect any surface water away from the irrigation field</p> <p>Install water saving devices</p> <p>Repair irrigation pipe</p>
Household drains gurgling	<p>Blocked drain to the tank</p> <p>Check your main switchboard that the power to the system is on</p> <p>Check water levels, if flooded then a technician may be needed to investigate further</p>	<p>Check and make sure you can see the inlet into the tank. If you can you have a drainage issue.</p> <p>Send pictures of the inside of the tank to service@waterflow.co.nz to arrange an inspection</p> <p>Please limit water usage until we can come to site</p>



NATURALFLOW™

Need a hand? We're here to help.

0800 628 356

www.waterflow.co.nz

sales@waterflow.co.nz

