



HWT
WATER TREATMENT



**DOMESTIC SEWAGE
TREATMENT PLANT**



Biological waste water treatment

Waste water description

Domestic sewage tends to have a variable flow and organic load. The organic content is similar to sugar in coffee, which cannot be filtered out with conventional filtration. Like sugar it is biodegradable and can be easily removed in a carefully designed biological environment.

The South African National Water Act of 1999 (Currently under review) currently makes distinction between discharge to a water resource and disposal via kikuyu irrigation. For both disposal routes emphasis is placed on sustainable reuse of the water. Irrigation is therefore a primary objective in the treatment of waste water.

Treatment

- Waste water flows to a suitably designed inert solids interceptor. Overflow from the interceptor is collected in a flow balancing tank and pump sump arrangement. Solids free effluent is pumped to the top of the SOG trickling filter.

- Organic treatment of the solids free waste water takes place in a mixed media biological filter. Waste water is distributed above the media. The waste water percolates through the media and takes approximately 48 hours to flow from top to base.
- The mixed media hosts a range of organisms including bacteria, fungi and worms.
- The treated water is collected in a sump for re-use. A pressure pump is usually supplied to discharge the treated water for irrigation purposes.

SUPER SOG FILTER



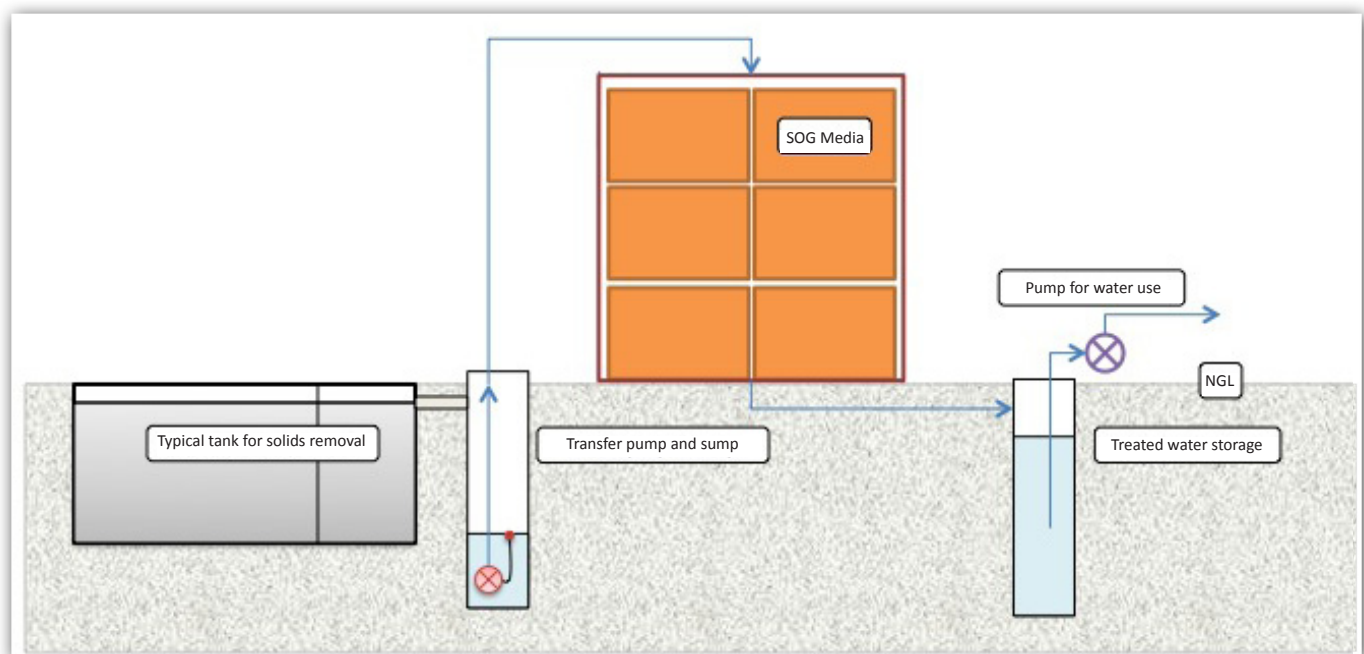
Samples. After inert solids interceptor on left and after SOG filter



Trickling SOG filter – low energy and highly effective. This unit treats up to 1000 litres per day.



TYPICAL INSTALLATION OF A SOG FILTER INSTALLED POST SOLIDS INTERCEPTOR



Motivation for installation of the HWT system

1. Proven technology

SOG filtration and treatment of sewage has been used for many years in various parts of the world.

2. Low energy

Only one pump is required to transfer water to the SOG filter – no aeration required.

3. Low visual impact

The SOG filter is tastefully covered with shrubbery. Fencing is an option as is a ventilated brick wall.

4. Low maintenance

The treatment plant design centres on ease of use and simplicity.

5. Upgrade considerations

A key feature of the design is the provision for upgrade in the event of future growth. The SOG filter geometry is chosen to allow for simple increase in size.

6. Minimal solids handling

Inert solid material in the wastewater is collected in a solids interceptor. This is a robust and hygienic solids material collection device. Actual design is site dependent.



Legislative compliance

Process backup

- For 12 months after commissioning, HWT will provide an equipment and process maintenance service.

Department of Water Affairs

- Liaison with the Department of Water Affairs is offered if required.

Department of Environmental Affairs

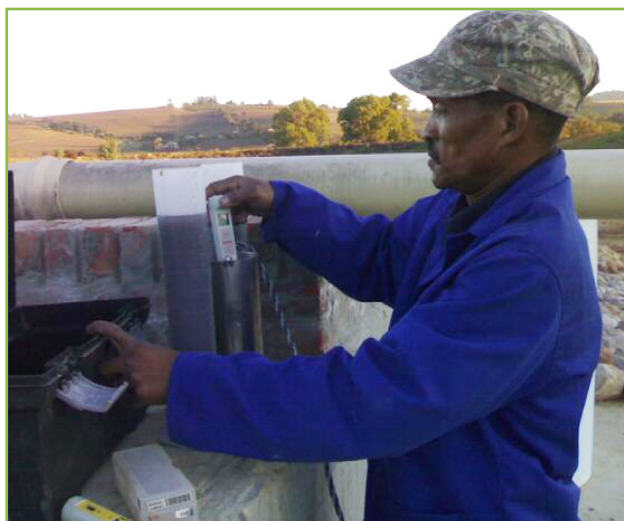
- Liaison with the Department of Environmental Affairs is not required if the annual treated flow is less than 2 million litres

Local Municipality

- The local Municipality will be advised of the proposed installation.

Maintenance Arrangement

- Our experience has shown that the treatment system we employ offers our clients process efficiency and the best value for money.
- The treatment plants operate on a biological principal, whereby naturally occurring biomass is cultivated in an engineered environment.
- We have experienced teams that will ensure that our treatment plants are operated and maintained as intended.



PROVEN TECHNOLOGY