How we clean your wastewater

Water that leaves your house when you take a bath or flush the toilet is called wastewater. This water ends up in a sewer along with rainwater that runs off the roads and down the drains.

We look after 36,000km of sewers – which would be long enough to go from Wales to Australia and back.

1 Screening

Water passes through screens which remove heavy particles such as rags, plastics and large objects. This process deals with much of the floating material.

2 Primary Tanks

Fine solid matter, what we call 'sludge,' sinks to the bottom of the tank. Scrapers sweep away the sludge and it is removed and treated.

3 Aeration

The water is treated in one of two methods, either through:

Filter beds: Wastewater is sprayed on a bed of coke, gravel or clinker. Bacteria live on the surface of these filter materials and as the water passes through, the surface bacteria, fungi and other organisms feed on the organic matter in the sewage, turning it into water, carbon dioxide and nitrogen. This water then moves on to the next stage of treatment.

Activated sludge: This is another method of treatment (as per diagram). Air is pumped from the bottom of the tank containing wastewater and bacteria. This keeps the bacteria supplied with oxygen – they multiply and digest the impurities in the sewage.

Poo Power

Sludge is passed through a digester held at a temperature of 35°C. The process is continuous and takes 15-20 days. The organic material breaks down in the digester to produce methane gas and carbon dioxide. The gas is burnt to generate electricity, we call this Poo Power!

We make enough electricity from Poo Power for every family in Wales to watch TV continuously for 6 days.

We have 836 Wastewater Treatment Works that clean water from the sewers before returning it to the water cycle.

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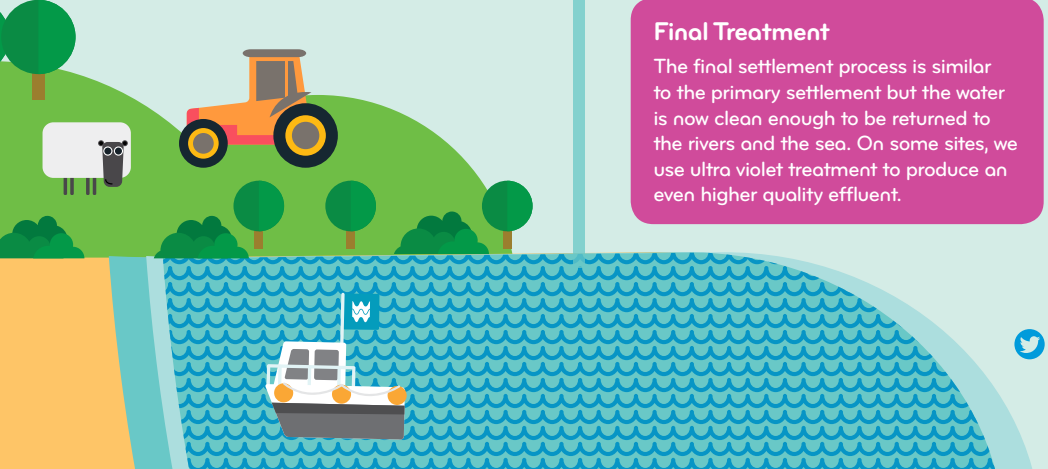
Final Treatment

The final settlement process is similar to the primary settlement but the water is now clean enough to be returned to the rivers and the sea. On some sites, we use ultra violet treatment to produce an even higher quality effluent.

5 Sludge Treatment

The sludge left from the cleaning process is collected, treated and is sometimes used by farmers as fertiliser. The rest is disposed of in landfill sites.



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