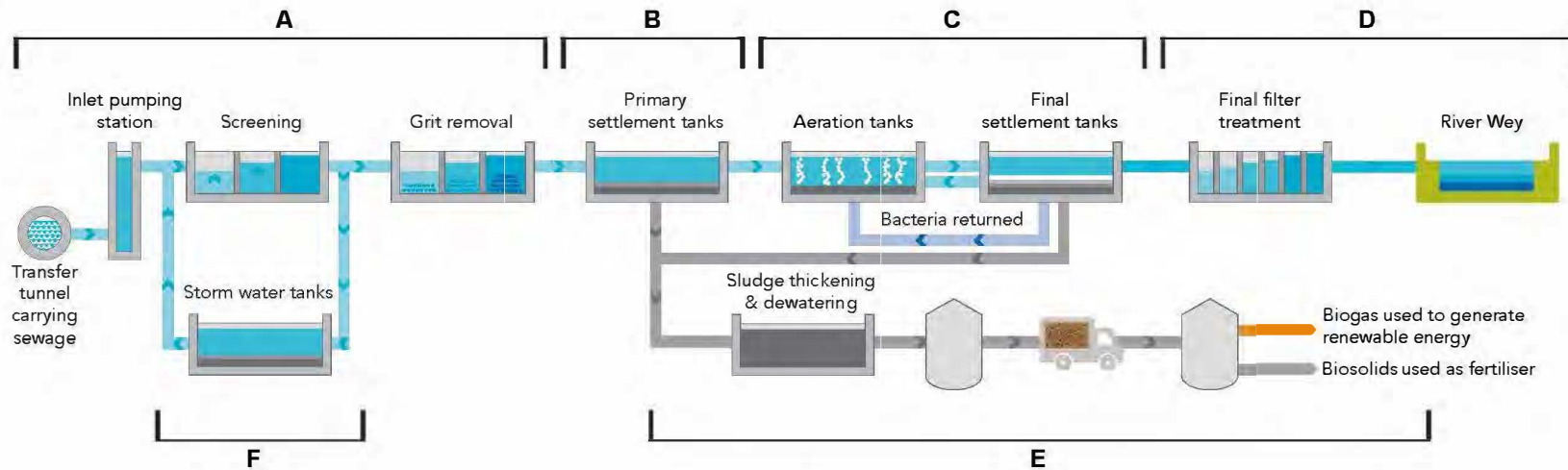


## The Sewage Treatment Process



### Screening

The first stage of the process is to screen the sewage arriving at the sewage works to remove all the rags and larger objects that cannot be broken down biologically in the treatment process and which could block or damage the treatment equipment. This is followed by a further filter stage to remove any grit.

### Primary treatment

The sewage then passes into large settlement tanks. The solid waste settles to the bottom of the tanks and is removed for treatment later on (see 'Sludge treatment'). Oils and grease present in the sewage float to the surface of the tanks and are skimmed off the surface. The treated sewage is known as 'settled sewage' and this passes on to the next stage.

### Secondary treatment

At this stage the settled sewage is mixed with activated sludge (collected from the final settlement tanks) and various bacteria are encouraged to grow (by controlling the oxygen levels) to remove excess nutrients e.g. Ammonia that would be harmful to river life. The treated sewage at this stage is known as 'mixed liquor' and this passes on to the next stage.

### Final treatment

The mixed liquor then passes into a final set of large settlement tanks where any bacteria or other tiny particles leftover from the previous stages settle to the bottom of the tank and are either recycled to the secondary treatment stage or removed for treatment (see 'Sludge treatment').

At Guildford, a further treatment stage is needed where the treated wastewater is filtered to catch any solid particles before it is returned to the River Wey. This is called tertiary treatment.

### Sludge treatment

The solid waste that settled to the bottom of the tanks in earlier stages is called sludge. This is thickened and dewatered to form 'sludge cake'. This cake is then taken off site to be used to generate electricity.

### Back to the river

The final stage of the sewage treatment process is to return the treated wastewater to the River Wey. The quality of the water is tested to make sure it meets the high water quality standards set by the Environment Agency.

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