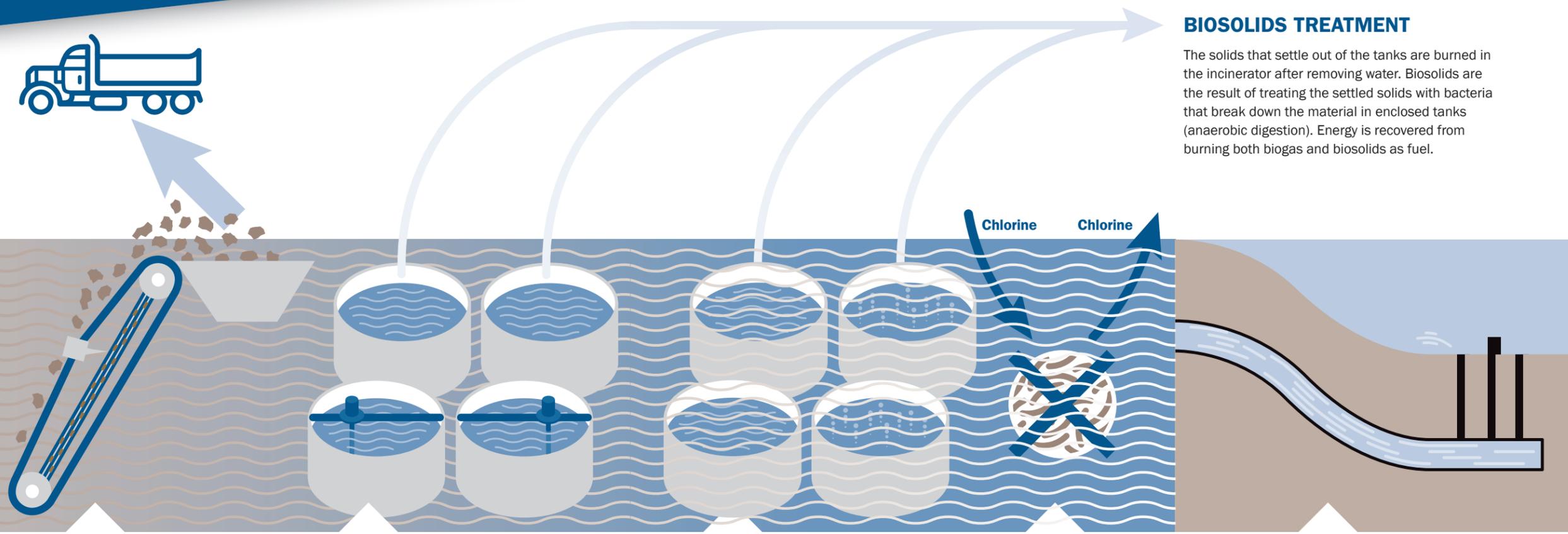


How Wastewater is Cleaned

Below is an illustration showing the process of treating wastewater – from entry into the Plant to the release of clear treated water into Lake Ontario.



BIOSOLIDS TREATMENT

The solids that settle out of the tanks are burned in the incinerator after removing water. Biosolids are the result of treating the settled solids with bacteria that break down the material in enclosed tanks (anaerobic digestion). Energy is recovered from burning both biogas and biosolids as fuel.

1 ENTRY

Wastewater (sewage) enters the Plant.



2 SCREENING

Large solid objects such as garbage, branches, plastics, stones, sand and silt are removed using screens and grit tanks.

3 PRIMARY TREATMENT (Physical)

Organic materials (food bits and human waste) are removed using settling tanks. Gravity and time are used to let the material fall to the bottom where it is collected. A skimmer removes fat, oil, and grease floating on the surface of the tanks. Chemical treatment is used to assist in removing phosphorus.

4 SECONDARY TREATMENT (Biological)

Small organic materials and nutrients are taken out. Air is pumped into the wastewater to give helpful bacteria the oxygen they need to break down the organic material and absorb nutrients. Settling tanks are used again, with chemical treatments to help the material and bacteria settle to the bottom where they are collected.

5 DISINFECTION

A chemical (sodium hypochlorite) is added to kill off any remaining harmful bacteria such as *E. coli*. A second chemical (sodium bisulphite) is used to take out the chlorine before the clear treated water is released into the Lake.

6 RELEASE

Clear treated water is sent down a discharge pipe (outfall) about one kilometre into Lake Ontario and flows out through many small outlets spaced over a length of 180 metres.

Effluent

Effluent is the term used for the clear treated water released into lakes, rivers, or streams after processing at a wastewater treatment plant.

