

The San Elijo Water Reclamation Facility



SAN ELIJO
JOINT POWERS AUTHORITY

Historical Facts:

- Prior to 1950, wastewater generated in Solana Beach and Cardiff was collected in private septic tanks or discharged into the surf through private collection systems.
- In 1950, construction of a collection system and treatment plant in Solana Beach was completed. A similar independent system in Cardiff followed soon after.
- Due to mounting water quality concerns in the San Elijo Lagoon, the sanitation districts of Solana Beach and Cardiff decided to construct a single new plant to treat wastewater from both communities.
- The San Elijo Water Pollution Control Facility, as it was known then, was constructed in 1965 as a joint effort to provide primary treatment for 2 million gallons per day of wastewater.
- The plant was upgraded to advanced primary treatment in 1981 and expanded to 2.7 million gallons per day.
- In 1992, the plant was expanded to include secondary treatment facilities and a rated treatment capacity of 5.25 millions gallons per day.
- Tertiary treatment was constructed in 2000 to provide the community with a source of recycled water for a variety of uses.
- The plant currently has an average dry weather flow of 3 million gallons per day, and currently experiences peak flows of approximately 6 millions gallons per day.



Wastewater as it starts through secondary treatment at the San Elijo Water Reclamation Facility.

Wastewater treatment begins with preliminary treatment where foreign objects and trash are screened out. The screened wastewater then flows to aerated grit tanks where small, abrasive particles such as eggshells, sediments and coffee grounds are collected, dried and sent to a landfill.

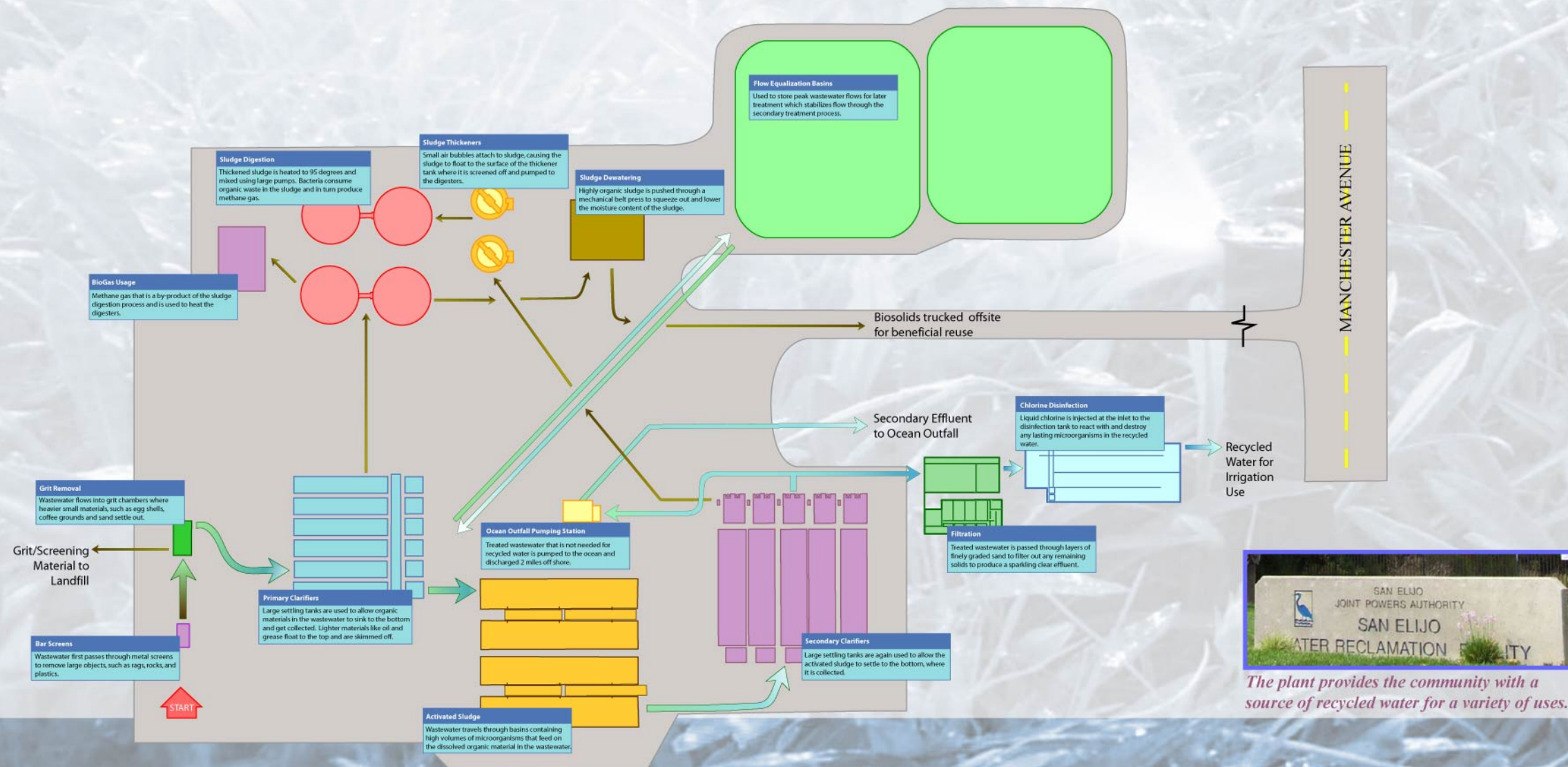
The wastewater then flows to large settling basins where the flow is slowed to allow the liquids and solids to separate. During this primary treatment process, heavy solids sink, while lighter materials (scum and grease) float to the top. The settled solids, called primary sludge, are removed and sent for further treatment. The primary treated wastewater is then sent to secondary treatment for additional processing.

The next phase is called secondary treatment, which is biological treatment using microorganisms (such as bacteria) to consume the organic material still in the wastewater. San Elijo uses an “activated sludge” treatment process where the organisms are maintained at a very high level to accelerate the consumption process. The treated flow is now considered “secondary effluent”.

A third level of treatment is provided to a portion of the secondary effluent to produce recycled water. This advanced treatment is called tertiary treatment. It involves filtering the water through sand filters and then disinfecting with chlorine.

The remaining material from the bottom of the tanks, or sludge, goes through additional treatment to reduce the moisture content of the biosolids. These biosolids which contain important nutrients such as nitrogen and phosphorus are land applied in Arizona to grow non-human consumption crops such as Alfalfa and Sudan Grass.

A by-product of the solids treatment is the creation of biogas. The biogas, or methane gas, is used to heat the digesters and reduce the demand for natural gas.



The plant provides the community with a source of recycled water for a variety of uses.