

FACT SHEET: BREWERTON WATER POLLUTION CONTROL PLANT (WPCP)

SPDES Permit No. NY – 0027596

Guy Young Road, Cicero, NY 13204

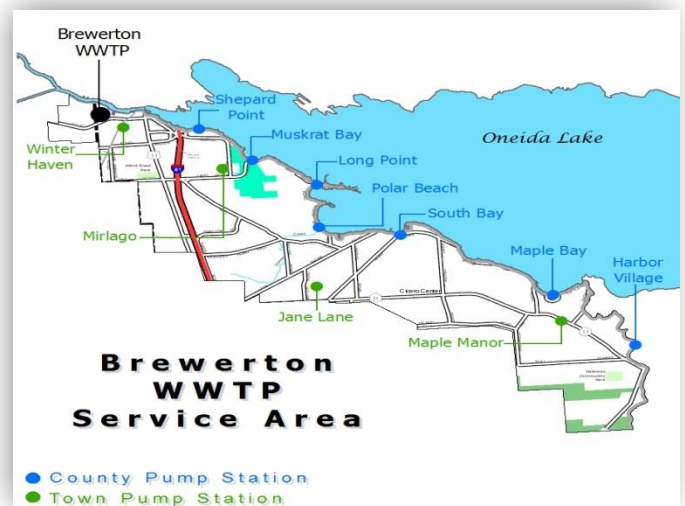


Service Areas

The Brewerton WPCP has a design flow of 3.0 MGD and provides advanced secondary treatment of wastewater using either Extended Aeration or Contact Stabilization Activated Sludge Processes. Construction of this facility was completed in 1974, and the treatment plant is currently operated using the Extended Aeration process. Wastewater is collected throughout portions of the Town of Cicero; along the Southwest edge of Oneida Lake, beginning just west of the Hamlet of Bridgeport, up to and including the Village of Brewerton. Wastewater collected from various neighborhoods is transported via a series of pumping stations, which connect to either the Lakeshore or Orangeport trunk sewers. These two trunk sewers gravity feed to and combine at Special Manhole #1, located immediately to the East of the Raw Sewage Pumping Station structure (RSPS). The wastewater influent is primarily from residential sources.

Treatment Process Description

The wastewater undergoes screening and grit removal in the RSPS, utilizing both a bar rack and a mechanical screen rake, followed by grit removal in an aerated grit chamber, which uses a mechanical clam shell removal system. Wastewater is then pumped to the first in a series of two (2) tanks to begin the activated sludge treatment process. Using the Extended Aeration Process, wastewater is pumped into the sludge reeration tank as a plug flow. The wastewater flows through the aerated tanks and then into the aerated mixed liquor tank for extended activated sludge treatment. The treated wastewater then flows to the final clarifier where settling occurs with the aid of cationic polymer. Activated sludge collected in the clarifier is recirculated to the sludge reeration tank and/or wasted to the two (2) aerobic digestion tanks which operate in series. Digested sludge is thickened using a rotary drum thickener, stored in a concentration tank and hauled to the Metropolitan-Syracuse WWTP for further treatment. Effluent from the clarifier flows to the chlorine contact tank for seasonal disinfection using sodium hypochlorite, followed by de-chlorination using sodium bisulfite, before discharge to the Oneida River. Total Phosphorus is removed year round with the use of ferrous sulfate. Seasonal nitrification is related to ambient temperatures.



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Treatment Plant Specifications

Performance Data (2016)

Treatment Plant Specifications		Performance Data (2016)	
Grit Chamber	(1) Chamber – 16' l x 10' w	Average Daily Data	
Reaeration Tanks	(2) Tanks – 116' l x 22' w	Design Flow:	3.0 MGD (peak 7.5 MGD)
	14' side wall depth (swd)	Avg Flow:	1.9 MGD (peak 7.2 MGD)
	267,300 gal / tank	Design BOD:	4,000 lbs/day
	534,600 gal - total	Ave Inf BOD:	130 mg/L / 1,868 lbs/day
Aerobic Digestion Tanks	(2) Tanks – 116' l x 22' w	Ave Eff BOD:	10.1 mg/L / 169 lbs/day
	14' side wall depth (swd)	Design TSS:	4,700 lbs/day
	267,300 gal / tank	Ave Inf TSS:	155 mg/L / 2,302 lbs/day
	534,600 gal - total	Ave Eff TSS:	8.8 mg/L / 178 lbs/day
MLSS Tanks	(2) Tanks – 58' l x 22' w	Ave Inf TP:	3.6 mg/L / 52 lbs/day
	14' side wall depth (swd)	Ave Eff TP:	0.6 mg/L / 9.2 lbs/day
	133,600 gal / tank	Ave Inf TKN:	29.1 mg/L / 416 lbs/day
	267,200 gal - total	Ave Eff TKN:	3.1 mg/L / 55 lbs/day
Final Clarifier Tanks	(2) Tanks – 60' dia x 9' swd	Annual Information	
	190,300 gal / tank	Biosolids Hauled:	604,515 lbs/dry
	380,600 gal – total	Grit Hauled:	245 cu ft
Chlorine Contact Tank	(2) Tanks – 50' l x 8' w x 12.5' d	Screenings Hauled:	1,404 cu ft
	37,400 gal / tank	Ferrous Sulfate Usage:	65,724 gal
	74,800 gal – total	Na Hypochlorite Usage:	9,081 gal
Thickened Sludge Holding Tank	(1) Tank – 10' l x 22' w x 14' d	Na Bisulfite Usage:	1,893 gal
	23,000 gal - total	Polymer Usage:	765 gal

SPDES Permit compliance history can be found at: <https://echo.epa.gov/>

Treatment Process Flow Diagram

