

# FACT SHEET: OAK ORCHARD WASTEWATER TREATMENT PLANT (WWTP)

SPDES Permit No. NY - 0030317

4300 Oak Orchard Road, Clay, NY 13212

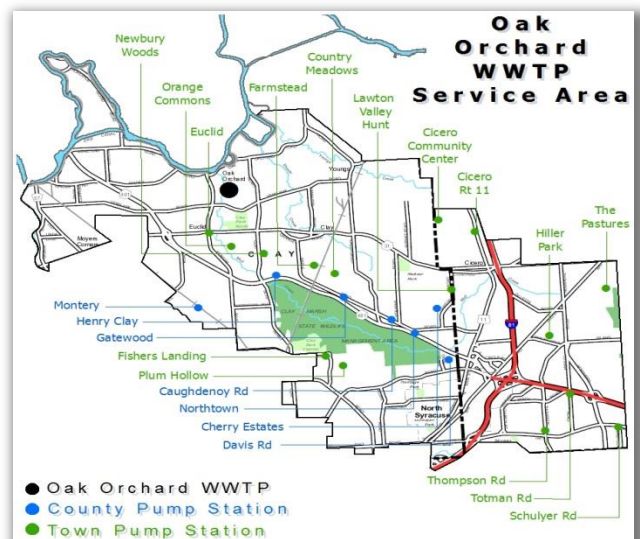


## Service Areas

Constructed in 1981, the Oak Orchard WWTP has a design flow of 10 MGD and provides advanced secondary treatment of wastewater using an Activated Sludge Processes. Wastewater is collected throughout significant sections of the Town of Clay and portions of the Town of Cicero; along with the Village of North Syracuse. A system of gravity sewers and smaller pumping stations convey sewage from a large portion of the service area through trunk sewers to the Davis Road Pump Station. Flow from this pump station is transported over six (6) miles, through two interconnected force mains (24" and 36") that combine to form a single 30" force main at Euclid in the Town of Clay, which then conveys the sewage to the Oak Orchard WWTP influent headworks. Wastewater influent is primarily from residential and commercial sources, however there are some industrial users, such as Clintons Ditch Corp.

## Treatment Process Description

The wastewater undergoes screening and grit removal in the headworks building, utilizing both a bar rack and a mechanical screen rake, followed by grit removal in two aerated grit chambers, which use a mechanical clamshell removal system. Wastewater then gravity flows from the mechanical screen rakes into the flow distribution structure, where the flow is evenly split between two (2) primary clarifier tanks. Settled solids in the primary clarifiers are pumped to the gravity thickeners and floating grease is removed. Wastewater then flows into the two (2) covered pure oxygen activated sludge aeration tanks, where biological treatment occurs. The treated wastewater (mixed liquor) then flows to the six (6) secondary clarifiers where solids settling occurs with the aid of a cationic polymer. Activated sludge collected in the clarifiers is recirculated to the aeration tanks and/or wasted to the two (2) gravity thickener tanks, where it is then hauled to the Metropolitan-Syracuse WWTP for further treatment. Effluent from the secondary clarifiers flows through a Parshall flume into two (2) natural lagoons, which operate in series. These lagoons act as polishing basins and aid in additional solids settling and aeration. Effluent from the lagoons then flows to the two (2) chlorine contact tanks for seasonal disinfection using sodium hypochlorite, before discharge to the Oneida River. Total Phosphorus is removed year round with the use of aluminum sulfate. Seasonal nitrification is related to ambient temperatures. Odor control is accomplished with odors collected from the grit chambers and the covered primary overflow weirs.



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## Treatment Plant Specifications

## Performance Data (2015)

Treatment Plant Specifications		Performance Data (2015)	
Grit Chambers (Grit Removal)	(2) Chambers-34'l x 16'w x 12'd	Average Daily Data	
	49,000 gal / tank	Design Flow:	10 MGD (peak 24 MGD)
	98,000 gal - total	Avg Flow:	5.4 MGD (peak 19.6 MGD)
Primary Clarifier Tanks	(2) Tanks - 120'l x 60'w x 11'd	Design BOD:	14,200 lbs/day
	592,500 gal / tank	Ave Inf CBOD:	224 mg/L / 9,736 lbs/day
	1,185,000 gal - total	Ave Eff CBOD:	4.3 mg/L / 196 lbs/day
Aeration Tanks	(2) Tanks - 108'l x 72'w x 9'd	Design TSS:	16,700 lbs/day
	523,500 gal / tank	Ave Inf TSS:	155 mg/L / 6,854 lbs/day
	1,047,000 gal - total	Ave Eff TSS:	5.2 mg/L / 234 lbs/day
Secondary Clarifier Tanks	(6) Tanks - 140'l x 20'w x 10'd	Ave Inf TP:	4.0 mg/L / 175 lbs/day
	209,500 gal / tank	Ave Eff TP:	0.09 mg/L / 4.1 lbs/day
	1,257,000 gal - total	Ave Inf TKN:	31.4 mg/L / 1,369 lbs/day
Lagoons	(2) Lagoons	Ave Eff TKN:	10.4 mg/L / 469 lbs/day
	9,000,000 gal / each	Annual Information	
	18,000,000 gal - total	Biosolids Hauled:	3,881,894 lbs/dry
Chlorine Contact Tanks	2 Tanks - 83' l x 25' w	Grit Hauled:	675 cu ft
	10' side wall depth (swd)	Screenings Hauled:	4,032 cu ft
	155,200 gal / tank	Grease Hauled:	1,005 cu ft
	310,400 gal - total	Alum. Sulfate Usage:	120,032 gal
Gravity Sludge Thickener Tanks	(2) Tanks - 40' dia x 8' swd	Na Hypochlorite Usage:	4,217 gal
	150,400 gal - total	Cationic Polymer Usage:	157,441 lbs

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

## Treatment Process Flow Diagram

