

**2017 Compliance Report for the Chatham Water Pollution Control Plant  
Public Utilities Commission for the Municipality of Chatham-Kent**

The Chatham Water Pollution Control Plant provides treatment for wastewater for the community of Chatham. Wastewater is collected by 24 sewage pump stations and conveyed by a largely separated sanitary sewer system. Some combined sewers remain. Final effluent is discharged to the Thames River.

The Chatham Water Pollution Control Plant was first constructed in 1964 and underwent expansions in 1992 and 2004. The development of the facility has followed the growth of the municipality and the advancement in technology and regulations. The combined Plant 1 and Plant 2 facility has an Environmental Compliance Approval capacity of 36,000m<sup>3</sup>/day, with a peak flow of 72,000m<sup>3</sup>/day.

The treatment system includes the following processes:

- Raw sewage pumping
- Screening collection and removal
- Aerated grit removal using a grit chamber, grit slurry and cyclone
- Chemical phosphorus removal
- Primary treatment, primary sludge collection and pumping
- Biological treatment using the Conventional Activated Sludge process
- Final settling
- Disinfection using Chlorine Gas and Sulphur Dioxide
- Two-stage anaerobic digestion, sludge pumping and digested gas handling
- Sludge Dewatering

In addition, recovered methane gas produced from the anaerobic digesters is used to power digester gas/natural gas fired boilers and the heat is consumed within the plant to offset the energy purchase.

Also recovered methane gas produced from the anaerobic digesters is used to power a methane fired Generator to produce electrical power back to the hydro grid with a payback in revenue. Due to a fire in the cogeneration unit, this process was not operational in 2017. Replacement equipment has been received from Germany and operation is expected to resume in 2018.

**Environmental Compliance Approval #6551-8WXXHC**

**Non-compliance Issues for 2017:**

An exceedance of the average monthly concentration effluent limit for Total Phosphorus occurred for the month June. Effluent Limit monthly average concentration for Total Phosphorus is 0.75 mg/L. The monthly average for June was 0.82 mg/L. The Final Effluent Total Phosphorus began to trend upwards due to static ferrous dosing. Once this issue was identified, and the ferrous dosing was adjusted, the Total Phosphorus began to trend downwards reaching 0.71 mg/L on June 26.

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**Plant Rated capacity of 36,000m3/day**

**Total sewage flow to the works during a calendar year divided by the number of days  
which sewage was flowing to the works that year**

Month	Total Monthly Flow m3	Avg Daily Flow /Month m3/day	Avg Daily Flow/ Year m3/day	% of Plant Capacity	CBOD5 mg/L	Total S.S. mg/L	Total Ammonia mg/L	Total P mg/L	pH	E.Coli/100 mL CFU GeoMean	Total Chlorine Residual mg/L
Limits: Dec 15 – Apr 15	None	None	36,000	100	15	15	4.0	0.75	6.0 - 9.5	200	0.01
Limits: Apr 16 – Dec 14	None	None	36,000	100	15	15	3.0	0.75	6.0 - 9.5	200	0.01
Objectives : Dec 15 – Apr 15	None	None	36,000	100	10	10	3.0	0.60	6.0 - 9.5	150	
Objectives : Apr 16 – Dec 14	None	None	36,000	100	10	10	2.0	0.60	6.0 - 9.5	150	
<b>Jan</b>	657,490	21,209			2.0	2.4	0.07	0.22	7.85	11.76	0.01
<b>Feb</b>	615,770	21,992			2.0	2.5	0.07	0.18	7.73	19.17	0.01
<b>Mar</b>	714,720	23,055			2.0	2.5	0.05	0.21	7.74	15.65	0.00
<b>Apr</b>	790,260	26,342			2.0	3.5	0.14	0.42	7.96	21.66	0.00
<b>May</b>	970,910	31,320			2.0	5.2	0.08	0.43	7.97	39.28	0.01
<b>Jun</b>	593,940	19,798			2.0	3.8	0.10	0.82	7.91	73.37	0.01
<b>Jul</b>	512,070	16,518			2.0	3.6	0.10	0.49	7.78	38.68	0.01
<b>Aug</b>	486,660	15,699			2.0	4.0	0.19	0.33	7.88	27.36	0.01
<b>Sept</b>	431,600	14,387			2.0	3.5	0.09	0.24	7.90	83.65	0.01
<b>Oct</b>	495,530	15,985			2.0	2.8	0.09	0.06	7.98	83.86	0.01
<b>Nov</b>	729,910	24,330			2.0	3.5	0.07	0.06	8.07	15.73	0.01
<b>Dec</b>	586,460	18,918			2.0	3.8	0.20	0.09	7.89	14.14	0.01
<b>YEAR</b>			20,782	58							
	Yearly Total Flow m3	Yearly Maximums									
	7,585,320	31,320			2.0	5.2	0.20	0.82	8.07	83.86	0.01