

Water Pollution Control Plant Monthly Report



September, 2011

OVERVIEW AND HIGHLIGHTS

The replacement of the second floor windows in the administration building during the month of September took place over the first couple of weeks. The new windows are part of the city's building and property improvement committee's goal in keeping our infrastructure, specifically buildings, within predetermined guidelines. The new windows, double paned, replace the old single pane windows and will improve the heating and cooling of the administration building.

The final segment of the WPCLF capital improvements is continuing in the tertiary treatment building. Replacing of the tertiary filter tank valves, influent and effluent, took place during the month. The valves will allow the filters to be controlled automatically from the SCADA system, which operates the tertiary process. The old valves had deteriorated to the point that they could no longer be relied upon. Plant maintenance staff is performing the work and as we go through the replacement process we clean and replace other equipment that assures us that the process will perform properly.

During the month we have replaced both belts on the belt filter press. This action took place because we had been experiencing problems with the operation of belt pressing plant and water plant solids. The belts have been blinded by the water plant sludge due to its sludge properties faster than anticipated. The alum in the sludge is more difficult to remove with our current spray cleaning equipment and we may have to upgrade this system to clean the belts.

Per the agreement in the Union contract new t-shirts were purchased and distributed to the union employees at the WPCP.

Through the month, plant staff continued work on the radio communications at the sewage pump stations. By the end of the month four pump stations were in full operation with the new communication system. Those four old ATT phone lines have been discontinued and subsequently the \$200 per month fees for each has been eliminated. At the start of 2012 new upgrades in the pump station communication systems will be upgraded and the phone lines will be disconnected.

The Recreation department was provided our 6 inch trash pump to pump down the pond at Recreation Park for a couple of weeks. The pump allowed the pond to be lowered and new shoring was planned for construction on the banks.

We have begun a program to reduce the peak demand on our plant electrical billing. The procedure will entail the backwashing of the tertiary filters during the non-peak hours of plant operation. This period has been identified on the midnight work shift when the electric demand is low due to lower flows and cooler temperatures. Specifically the blowers that force air into the activated sludge process operate at a lower electrical demand during the 11 PM to 7 AM period, thus the backwashing of the filters will take place during this period, reducing our cost for electrical consumption.

Attending the Ohio Water Environment conference in Columbus, OH in the last part of the month was beneficial to our future at the WPCP. I learned that new legislation has affected the renewal of wastewater plants NPDES permits. The disinfection of effluent wastewater has new sampling and analysis that involve E Coli testing. This testing involves new procedures and may result in higher cost for disinfection, preliminary numbers by other plants in Ohio have indicated higher cost in meeting this new test. Future new limits for phosphorus have been included in many new permits and the lower values have had resulted in chemical cost increases for many Ohio facilities. The City of Painesville will be in the

process of renewing its NPDES permit in the first quarter of 2013 and we can expect the changes being implemented statewide. The new values will result in increases of chemicals with the permit renewal.

The department's budget was reviewed with Rita McMahon, City Manager and Andy Unetic, Finance Director on September 26. The new budget is in line with the Finance departments request to reduce cost. Our goal is to reduce cost in our utility budget, specifically electrical and natural gas fees. We will implement new operation procedures to attempt to accomplish this goal. The reduction in staff will continue to proceed according to plan by not re-hiring plant staff that retires. The reduction in staff remains the primary goal that effectively reduces department cost over a long period of time.

WPCP MONTHLY STAFF MEETING AND DISCUSSION

● Operations

1. Pump Station Radios and Communications –
2. Tertiary Filters Repairs and Valve Replacements – Work continues on valve replacement and the re-hab of filter no. 4.
3. Safety Concerns – Hardhats, side shields, gloves, face shields, etc.
4. Tertiary Filter Backwashes – In an effort to reduce our peak demand, we will only backwash the tertiary filters when the blower system has stabilized during the night shift, 11 PM to 7 AM. Help to reduce energy cost.
5. Administration Windows and Doors – All the long windows have been replaced. Doors and hall window remain.
6. Discussed the budget for the department in 2012.
7. Discussed the capital budget for the WPCP in 2012.
8. Plant staff asked about personnel cuts for 2012 and how they might be affected. I informed them that per union contract all reductions in staff is based upon seniority within the union.

SEPTEMBER EVENTS AND MEETINGS

1. Arrow Glass was at the WPCP replacing windows beginning on September 1, 2011. The windows (17) on the second floor of the Administration Building are being replaced with new double pane windows.
2. Taste of Painesville on September 1, 2011 was worked by Randy Bruback. The event was well attended by the community and the food was great.
3. Randy Bruback attended the department head meeting on September 7, 2011.
4. On September 8, 2011 Jeff Tressel and Randy Bruback met with Eckart America, at the WPCP, to discuss the future plans of reducing copper violation events from this industrial facility.
5. Bob DeWitt, AMP Ohio, met with Randy Bruback and Rita McMahon, City Manager to discuss the opportunities for testing and analysis of electrical usage at the WPCP on September 9, 2011.
6. Joe Jackson and Terry Haffey attended an Industrial and Electrical Equipment show at the IX Center in Cleveland, OH on September 22, 2011.
7. Randy Bruback met with Andy Unetic, Finance Director and Rita McMahon, City Manager on September 26, 2011 to review the proposed sewer budget for 2012.
8. On September 28 and September 29, 2011 Randy Bruback attended the Ohio Water Environment Operations and Laboratory seminar in Columbus, OH. The event is held annually to train and review current and future operation and laboratory issues and regulatory concerns.

GOALS AND ACCOMPLISHMENTS

1. Completed four sewage pump station radio communication systems during the month. As a result four ATT phone lines were disconnected reducing our phone bill by \$800 per month.
2. Replaced the windows on the second floor of the administration building during the month. The new windows will reduce the heating and cooling cost at the WPCP.

Mission Statement

The mission of the Water Pollution Control Plant is to provide the most effective customer oriented wastewater collection and treatment to the citizens of Painesville.



**Grand River
Painesville, OH**

<u>Results</u>	<u>This Month</u>		<u>Last Month</u>	
Avg. Daily Flow	3.61	MGD	3.34	MGD
Flow Treated	108.29	Mill. Gal.	103.56	Mill. Gal.
Raw PO	2.85	Mg/L	3.23	Mg/L
Final PO	0.68	Mg/L	0.63	Mg/L
% Removed	76.1	%	80.5	%
PO to River	0.307	Tons	0.272	Tons
Raw C-BOD	116	Mg/L	134	Mg/L
Final C-BOD	1	Mg/L	1	Mg/L
% Removed	99.1	%	99.3	%
C-BOD to River	0.45	Tons	0.43	Tons
Raw Suspended Solids	177	Mg/L	230	Mg/L
Final Suspended Solids	2	Mg/L	1	Mg/L
% Removed	98.9	%	99.6	%
Suspended Solids to River	0.90	Tons	0.43	Tons

Meters

The Total Plant Flow meter was calibrated weekly, and found to be correct. The Lubrizol meter is checked weekly. The Total Plant Flow meter recorded 108.29 million gallons flow. The Lubrizol meter recorded 7,004,379 gallons flow.

Detritors

2.75 tons of grit was removed during the month.

Comminutors

1.08 tons of screenings was removed during the month.

Chemical Treatment

20,300 pounds of alum was required at a cost of \$3,045.00 for the removal of 1959.8 pounds of phosphorus. Cost of phosphorus removal for the month was \$1.55/pound.

Primary Clarifiers

The primary clarifiers operated satisfactorily during the month, removing 399,494 gallons of raw sludge containing 3.8% solids.

Anaerobic Digesters

The primary digesters operated satisfactorily during the month, transferring 387,275 gallons of raw sludge for pressing containing 3.2 % solids.

Secondary Treatment

The secondary clarifiers operated satisfactorily during the month.

Tertiary Treatment

The tertiary filters operated satisfactorily during the month.

Hypo-chlorination

1574 pounds of salt was used in the production of 530 pounds of available CL₂ to meet the chlorine demand in disinfecting the final effluent. The average residual was 0.02 mg/l CL₂. The maximum effluent residual was 0.77 mg/l CL₂ and the minimum effluent residual was 0.33 mg/l CL₂. Cost of chlorination for the month was \$167.64 or \$0.316 per pound of available CL₂.

Dechlorination

820 pounds of sodium bisulfite was used to maintain a maximum residual chlorine of 0.030 mg/l as per our N.P.D.E.S. Permit. Cost of dechlorination for the month was \$135.30 or \$0.165/lb.

Liquid Sludge

The filter press processed 424,895 gallons of liquid sludge producing 159.36 tons of wet cake including 37,620 gallons of water plant sludge containing 21.9% solids or 35.92 tons of dry solids. 671.5 pounds of polymer were used at a cost of \$697.02. Cost of disposal at the Lake County Landfill was \$4,895.70.

Digester and Greenhouse Heating

The anaerobic digesters consumed 21,550 cubic ft. of generated methane and 74,907 cubic ft. of purchased gas.

Pump Stations

Erie Street pumps recorded 116.89 hours and pumped 701,340 gallons of wastewater.

Fern Drive pumps recorded 45.53 hours and pumped 574,596 gallons of wastewater.

Poplar Lane pump recorded 122.60 hours and pumped 4,045,800 gallons of wastewater.

Jackson Street pump recorded 34.11 hours and pumped 624,213 gallons of wastewater.

Recreation Park pump recorded 78.96 hours and pumped 1,421,280 gallons of wastewater.

Sanford Street pump recorded 93.67 hours and pumped 1,405,050 gallons of wastewater.

Valley View pumps recorded 23.68 hours and pumped 255,744 gallons of wastewater.

Brookstone flow meter recorded 998,434 gallons of sewer flow.

The Seven (7) pump stations pumped 9,028,023 gallons of wastewater and 36 man-hours were required in maintenance.

Respectfully Submitted,



Randy Bruback
Superintendent
Water Pollution Control Plant