

# **Water Pollution Control Plant Monthly Report**



**October, 2011**

## **OVERVIEW AND HIGHLIGHTS**

During the month of October the WPCP experienced numerous periods of heavy rainfall events. The plant performed well during these events primarily due to the new plant equipment design. Secondary clarifier energy dissipating ports have helped to prevent the solids washout in the treatment process. Operator decisions with the grit pumping during these events have reduced the plugging of the grit tanks. Over all the high flows have been treated well and future control parameters designed into the SCADA system will make operational controls more effective.

In preparation for the winter season approaching the replacement of the 2<sup>nd</sup> floor windows and doors in the administration building have been completed. The new double pane windows and doors will assist the building's energy efficiency during the winter months and reduce energy costs.

No. 4 tertiary filter has been completely retrofitted with new valves in the past couple of months. The new valves have permitted the automation of the filter controls with the SCADA system. All the effluent valves have been replaced on all four filters and one of the influent valves has been replaced on No. 4 filter.

Plant staff has begun to meet with vendors and engineers to decide upon the best and most economical way of replacing the sludge digester heaters. The options we are currently considering is the typical construction project of hiring an engineer to perform preliminary design, final design and bidding vs. a design build project that would have engineering performed by the equipment manufacturer or a construction company performing the minimal engineering. The digester heaters are being replaced due to age and poor performance. New design will have improved efficiency and will allow easier servicing by maintenance staff.

## **WPCP MONTHLY STAFF MEETING AND DISCUSSION**

### **UNITED WAY PRESENTATION** – David Whitaker and Jean

#### ● Operations

1. Tertiary Treatment – No. 4 filter is back on line. We replaced the surface wash piping with new. Surface wash nozzles and arms are fully operational. New valves on influent and effluent piping. Working on No. 2 tertiary tank, new surface wash piping completed. Will continue to replace valves in influent and effluent piping.
2. Aeration Blower Filters – We have replaced the filters on No. 1 and No. 2 Blowers. The new filters have metal (aluminum) grids that replace the old paper filters. We believe that the new filters will operate more efficiently than the old paper filters and allow for more air movement through the blowers.
3. Chlorination – The chlorination season finishes this week. We had a very good season of fecal coliform results and thanks to everyone on the sampling and analysis of residuals and coliform analysis. We had zero violations of our NPDES permit.
4. Tertiary Screw Pumps – No. 1 screw pump is back in operation. We replaced the lower coupling on the screw.
5. Pump Station Screen (SCADA) – Have Joe Jackson review the screen with operators.

6. Digester Heater and Boiler Replacement Project – Beginning the selection phase for the engineering of the new digester heater. Select the engineer based upon experience, ability to get started on the project, staffing, price.
7. Truck update – arriving this week (bed)
8. Issue 2 – Get the facts and vote accordingly
9. Ferric Chloride – piping installation to plant headworks
10. Pump Station Controls – ordering two new pump control systems to replace copper phone lines.

#### ***OCTOBER EVENTS AND MEETINGS***

1. On October 12, 2011 the WPCP held its monthly safety meeting to discuss department safety plans and issues.
2. Arrow Glass replaced the front entrance door and windows with new energy efficient glass and frames.
3. Terry Haffey and Kevin Aiken, Safety Coordinator attended the Ashtabula County Safety Conference in Jefferson, OH on October 14, 2011.
4. The Lake Erie College Environmental class toured the WPCP on October 17, 2011.
5. The Lake Erie College Environmental class toured the WPCP on October 18, 2011.
6. The NEOWEA section held a Seminar for Supervisors on October 24, 2011. The event was attended by Joe Elliot, Joe Jackson, Jeff Tressel and Kevin Aiken.
7. Randy Bruback attended the monthly Utility Department Supervisors meeting with Rita McMahon, City Manager on October 26, 2011.
8. The sales representative for Alfa Laval sludge digester heaters, Fred Monago, met with Randy Bruback and Joe Jackson on October 27, 2011 to discuss the heater replacement project.
9. WPCP staff attended the United Way luncheon on October 31, 2011 at the City's Fire Station. Food and entertainment was outstanding and much appreciated by all.

#### ***GOALS AND ACCOMPLISHMENTS***

1. Replaced the 2<sup>nd</sup> floor administration windows and doors with new. This project is in line with the City's goal of maintaining the buildings infrastructure.
2. Plant staff attended two seminars that dealt with Safety and Supervisor training. Both events had presentations that provide continuing education credits for the operator's license renewal.

### **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**

### **Results**

|                           | <b><u>This Month</u></b> | <b><u>Last Month</u></b> |
|---------------------------|--------------------------|--------------------------|
| Avg. Daily Flow           | 4.74 MGD                 | 3.61 MGD                 |
| Flow Treated              | 149.93 Mill. Gal.        | 108.29 Mill. Gal.        |
| Raw PO                    | 2.50 Mg/L                | 2.85 Mg/L                |
| Final PO                  | 0.46 Mg/L                | 0.68 Mg/L                |
| % Removed                 | 81.6 %                   | 76.1 %                   |
| PO to River               | 0.282 Tons               | 0.307 Tons               |
| Raw C-BOD                 | 105 Mg/L                 | 116 Mg/L                 |
| Final C-BOD               | 1 Mg/L                   | 1 Mg/L                   |
| % Removed                 | 99.0 %                   | 99.1 %                   |
| C-BOD to River            | 0.61 Tons                | 0.45 Tons                |
| Raw Suspended Solids      | 176 Mg/L                 | 177 Mg/L                 |
| Final Suspended Solids    | 2 Mg/L                   | 2 Mg/L                   |
| % Removed                 | 98.9 %                   | 98.9 %                   |
| Suspended Solids to River | 1.23 Tons                | 0.90 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 156.93 million gallons flow. The Lubrizol meter recorded 7,814,121 gallons flow.

### **Detritors**

2.24 tons of grit was removed during the month.

### **Comminutors**

0.96 tons of screenings was removed during the month.

### **Chemical Treatment**

21,000 pounds of alum was required at a cost of \$3,150.00 for the removal of 2499.8 pounds of phosphorus. Cost of phosphorus removal for the month was \$1.26/pound.

### **Primary Clarifiers**

The primary clarifiers operated satisfactorily during the month, removing 499,647 gallons of raw sludge containing 4.4% solids.

### **Anaerobic Digesters**

The primary digesters operated satisfactorily during the month, transferring 548,697 gallons of raw sludge for pressing containing 3.5 % solids.

### **Secondary Treatment**

The secondary clarifiers operated satisfactorily during the month.

### **Tertiary Treatment**

The tertiary filters operated satisfactorily during the month.

### **Hypo-chlorination**

1796 pounds of salt was used in the production of 605 pounds of available CL<sub>2</sub> to meet the chlorine demand in disinfecting the final effluent. The average residual was 0.02 mg/l CL<sub>2</sub>. The maximum effluent residual was 1.13 mg/l CL<sub>2</sub> and the minimum effluent residual was 0.54 mg/l CL<sub>2</sub>. Cost of chlorination for the month was \$191.24 or \$0.316 per pound of available CL<sub>2</sub>.

### **Dechlorination**

1020 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 \$168.30.

### **Liquid Sludge**

The filter press processed 609,403 gallons of liquid sludge producing 311.25 tons of wet cake including 60,706 gallons of water plant sludge containing 24.3% solids or 74.09 tons of dry solids. 918.5 pounds of polymer were used at a cost of \$953.40. Cost of disposal at the Lake County Landfill was \$9,433.50.

### **Digester and Greenhouse Heating**

The anaerobic digesters consumed 29,119 cubic ft. of generated methane and 108,195 cubic ft. of purchased gas.

### **Pump Stations**

Erie Street pumps recorded 207.03 hours and pumped 1,242,180 gallons of wastewater.

Fern Drive pumps recorded 48.46 hours and pumped 639,672 gallons of wastewater.

Poplar Lane pump recorded 141.10 hours and pumped 4,656,300 gallons of wastewater.

Jackson Street pump recorded 40.40 hours and pumped 739,320 gallons of wastewater.

Recreation Park pump recorded 156.00 hours and pumped 2,808,000 gallons of wastewater.

Sanford Street pump recorded 135.40 hours and pumped 2,031,000 gallons of wastewater.

Valley View pumps recorded 28.30 hours and pumped 305,640 gallons of wastewater.

Brookstone flow meter recorded 1,138,485 gallons of sewer flow.

The Seven (7) pump stations pumped 12,422,112 gallons of wastewater and 32 man-hours were required in maintenance.

Respectfully Submitted,



Randy Bruback

Superintendent  
Water Pollution Control Plant