John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

June 20, 2013

RE: LORAIN COUNTY
BRENTWOOD LAKE WWTP
COMPLIANCE EVALUATION INSPECTION
NPDES NO. 3PH00024

Lorain County Commissioners
Administration Building
216 Middle Avenue
Elyria, OH 44035

Dear Commissioners:

On May 29, 2013, a Compliance Evaluation Inspection (CEI) was conducted on the Brentwood Lake Wastewater Treatment Plant (WWTP). Present during the inspection were Mr. Steve Hicks, of the Lorain County Sanitary Engineer's Office; Mr. John Sabo, of the Lorain County Health Department; and this writer, of Ohio EPA.

The purpose of the inspection was to evaluate the operation and maintenance condition of the WWTP, and to evaluate its compliance with the terms and conditions of its current NPDES permit, prior to its renewal.

At the time of the May 29th inspection, the following observations were made:

1) The comminutor was in use and operating satisfactorily.

2) Both north and south extended aeration tank contents were well aerated. The contents of the north aeration tank were grayish brown in color, and contained no foam. The south aeration tank contents were medium brown in color, with a slight foam present in the corners of the tank.

3) The operating range of the mixed liquor suspended solids (MLSS) content of both aeration tanks has been reduced since the last inspection. According to Mr. Hicks, the 30 minute settling test for the north aeration tank is approximately 220 ml/1000 ml (22%) for the north aeration tank, and 250 ml/1000 ml (25%) for the south aeration tank.

4) In both aeration tanks, the return activated sludge line was returning medium brown sludge from the settling tank to the aeration tank. The settling tank skimmer lines were returning clear water from the settling tanks to the aeration tanks.

5) Settling tank contents of both sides were clear, and mechanical sludge scrapers in the tanks were operating.

   Effluent troughs in the settling tanks were clean, and free of solids or algae. Effluent leaving the settling tanks was also clear and visually free of solids.

6) Both tertiary drum Aqua Disk filters were on-line and in the 'AUTO' mode. Backwash of the filter disks is automatically performed approximately every 15 minutes, if they have not automatically backwashed, due to a buildup of pressure head due to solids accumulation.

7) Final effluent is disinfected utilizing chlorine gas, and dechlorination is accomplished with a solution of 38% sodium bisulfite. Approximately 5 lbs/day of chlorine gas is used, and 55 gallons / 2 weeks of 38% (by weight) sodium bisulfite is used.

8) The WWTP final effluent is post aerated prior to discharge. The final effluent was visually clear, colorless, and free of solids or foam.

9) The aerated sludge holding (ASH) tank was 1/2 to 2/3 full, and contents were dark brown and well aerated, with a lighter brown surface foam.

   Sludge is hauled to the French Creek WWTP for disposal approximately 6X per year. Each hauled load is approximately 3000 gallons, and 2 loads were hauled from the WWTP in April 2013.

10) Flow is measured at the Brentwood Lake WWTP by ultrasonic flow meter, which is calibrated twice yearly.

11) Effluent samples are collected by operators at the Brentwood Lake WWTP, and are transported to the French Creek WWTP laboratory for analysis. Chain of Custody forms are utilized as a part of the sample collection/analysis procedure.

12) Lorain County Engineer personnel measure pH, DO, and temperature at the Brentwood Lake WWTP. The remaining sample analysis is conducted by the French Creek WWTP lab.

The last CEI conducted at the Brentwood Lake WWTP was on July 12, 2012. Since the last CEI, the Brentwood Lake WWTP has reported the following NPDES Permit effluent violations in their monthly electronic Discharge Monitoring Reports (eDMR):

***BRENTWOOD LAKE WWTP***
***NPDES PERMIT NO. 3PH00024***
***EFFLUENT LIMIT VIOLATIONS***
***(8/1/12 – 6/1/13)***

| Reporting Period | Parameter | Limit Type | Limit | Reported Value | Violation Date |
|---|---|---|---|---|---|
| August 2012 | Chlorine, Total Residual | 1D Conc | 0.019 | .1 | 8/14/2012 |
| September 2012 | Fecal Coliform | 7D Conc | 2000 | 2600. | 9/15/2012 |
| November 2012 | Total Suspended Solids | 30D Conc | 12 | 13.2625 | 11/1/2012 |
| November 2012 | Total Suspended Solids | 7D Conc | 18 | 18.35 | 11/1/2012 |
| November 2012 | Nitrogen, Ammonia (NH3-N) | 7D Conc | 10.2 | 11.2 | 11/8/2012 |
| November 2012 | Total Suspended Solids | 7D Conc | 18 | 18.4 | 11/15/2012 |
| April 2013 | Total Suspended Solids | 7D Conc | 18 | 19.5 | 4/8/2013 |
| April 2013 | Total Suspended Solids | 7D Qty | 13.6 | 16.3529 | 4/8/2013 |
| April 2013 | pH | 1D Conc | 6.5 | 6.49 | 4/15/2013 |

A review of the eDMRs for the same period also found the following monitoring frequency violations:

***BRENTWOOD LAKE WWTP***
***NPDES PERMIT NO. 3PH00024***
***REPORTING FREQUENCY VIOLATIONS***
***(8/1/12 – 6/1/13)***

| Reporting Period | Station | Parameter | Sample Frequency | Expected | Reported | Violation Date |
|---|---|---|---|---|---|---|
| August 2012 | 001 | Nitrogen, Ammonia (NH3-N) | 1/2Weeks | 1 | 0 | 8/1/2012 |
| August 2012 | 001 | Fecal Coliform | 1/Week | 1 | 0 | 8/8/2012 |
| November 2012 | 001 | Total Suspended Solids | 2/Week | 2 | 1 | 11/22/2012 |
| November 2012 | 001 | CBOD 5 day | 2/Week | 2 | 1 | 11/22/2012 |
| December 2012 | 001 | Total Suspended Solids | 2/Week | 2 | 1 | 12/22/2012 |
| December 2012 | 001 | CBOD 5 day | 2/Week | 2 | 1 | 12/22/2012 |
| January 2013 | 001 | Total Suspended Solids | 2/Week | 2 | 1 | 1/1/2013 |
| January 2013 | 001 | CBOD 5 day | 2/Week | 2 | 1 | 1/1/2013 |
| December 2012 | 601 | Total Suspended Solids | 1/Week | 1 | 0 | 12/22/2012 |
| December 2012 | 601 | CBOD 5 day | 1/Week | 1 | 0 | 12/22/2012 |
| January 2013 | 601 | Total Suspended Solids | 1/Week | 1 | 0 | 1/1/2013 |
| January 2013 | 601 | CBOD 5 day | 1/Week | 1 | 0 | 1/1/2013 |

Items discussed with Mr. Hicks during the May 29th inspection at Brentwood Lake WWTP include the following:

1) Since the last inspection, MLSS concentrations in the aeration tanks have been kept at lower operating levels, and sludge wasting has increased. The number of suspended solids violations has been somewhat reduced, but the Brentwood Lake WWTP is still experiencing problems with suspended solids violations, mostly during times of precipitation events.

2) The County has continued with its efforts in Inflow & Infiltration (I/I) reduction in the Brentwood Lake sanitary sewer system. Sewer main lining, and smoke testing of laterals has been conducted in the development.

3) A total of 222 residences were smoke tested, with 48 found to have illegal connections or lateral repairs needed. Approximately 39 of those needing illegal connections removed, or repairs needed, were made as of October 2012.

4) The forthcoming NPDES permit renewal will contain a few minor changes to the final effluent table (STA 001).

    a. There will be an interim table in effect the first 11 months, in which fecal coliform limits will be kept as in the old permit, and E. coli will be monitored. As of 12 months after the permit effective date, the final table will become effective, and the fecal coliform monitoring will be eliminated, and replaced with E. Coli limits. Also, upstream and downstream fecal coliform monitoring will be replaced with E. coli monitoring.

b) Monitoring for nitrate-nitrite nitrogen, and total dissolved solids, will be required in the final effluent.

c) The renewed NPDES permit will also require posting of a sign at the WWTP outfall, which identifies the discharge as effluent from the WWTP, its permit number, and a contact telephone number.

d) The renewed permit will include additional operator record keeping requirements in the form of an operator's log book. The log book will need to be hardbound, with numbered pages, and at a minimum, contain the following recorded information:

- Date and times of arrival and departure for the operator of record, and another operator in attendance.
- Specific O&M activities performed at the WWTP, which affect, or have the potential to affect the quality or quantity of effluent being produced.
- Results of tests performed, and samples taken, unless documented on a lab sheet.
- Performance of preventative maintenance and repairs, or requests for repairs of equipment, having the potential to affect the quality or quantity of effluent being produced.
- Identification of the persons making entries into the log book for that day.

5) Mr. Hicks indicated he would be retiring from the Lorain County Sanitary Engineers office by the end of June 2013. He was instructed to submit a written notification to this office, indicating when he would no longer be the responsible person in charge of the operation of the WWTP.

6) Upon Mr. Hicks' retirement, the County needs to name a properly licensed person as the Operator of Record for the WWTP, and submit the necessary ORC Form (EPA Form 5121) to this Agency.

The last Brentwood Lake WWTP CEI report to the County (dated August 9, 2012) required the submission of an SNC Compliance Plan Report to the Ohio EPA. The SNC Compliance Plan Report was to address the significant effluent violations at the WWTP caused by the I/I problem in the development; summarize the County's efforts and capital expended to try and correct the I/I problem; and to evaluate if there was a correlation between precipitation events and final effluent limit violations. The required SNC report was received October 16, 2012, and addressed all 4 County WWTPs.

This office is requesting a follow-up meeting, preferably by August 1, 2013, to discuss the continuing effluent violations at the Brentwood Lake WWTP; to discuss the results presented in the SNC Compliance Plan; and to agree upon what additional efforts will be extended by the County to bring the Brentwood Lake WWTP back into continued compliance.

If there are questions or comments regarding this correspondence, please contact this writer at (330) 963-1110.

Respectfully,

Charles E Allen

Charles E. Allen
Environmental Engineer
Division of Surface Water

CEA/cs