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April 6, 2011

LORAIN COUNTY
GENERAL HEALTH DISTRICT

LORAIN COUNTY
SHEFFIELD VILLAGE
SHEFFIELD-SHEFFIELD LAKE
SCHOOLS WWTP INSPECTION
(NPDES NO. 3PT00088)

Mr. Will Folger, Superintendent
Sheffield-Sheffield Lake City Schools
1824 Harris Road
Sheffield Village, OH 44054

Dear Mr. Folger:

On February 15, 2011, a Compliance Evaluation Inspection (CEI) was conducted at the Sheffield-Sheffield Lake Schools wastewater treatment plant (WWTP). Present during the inspection was Ms. Christina Douglas of Uni-Tech, representing the school system; Mr. John Sabo of the Lorain County Health Department; and this writer, of the Ohio EPA.

The purpose of the visit was to inspect the completed surface sand filters; to evaluate the facility's operation and maintenance, and discuss the WWTP compliance with NPDES Permit effluent limits. The most recent inspection of the WWTP was November 29, 2007.

At the time of the February 15th inspection, the following items were observed at the WWTP:

- 1) Contents of the aeration tank were being well aerated, and were light to medium brown in color, with a slight white foam present on the surface. The return sludge lines were operating, returning a light brown liquid.
- 2) Settling tank contents contained a slight floating scum, with some duckweed on the water surface behind the inlet baffle. Ms. Douglas indicated the return lines have a chronic plugging problem.

The western and middle settling tank effluent troughs contained some solids, and the eastern settling tank contents had a partial layer of ice on the surface.

- 3) The pumps in the dosing station were on 'AUTO'. When tested manually, the Number 2 pump did not operate. The high level alarm was functional when manually tested.
- 4) All 4 surface sand filter cells were online, and the cells were snow covered.
- 5) The tablet chlorinator / dechlorinator units were not in use, as disinfection is not required from November 1st through April 30th. The effluent was being post aerated.

During the period November 1, 2007 through February 1, 2011, the Sheffield-Sheffield Lakes WWTP reported the following NPDES Permit effluent violations in their monthly operating reports (MORs):

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Sheffield Lake City Schools
NPDES Permit No. 3PT00088
Effluent Limits Violations
(Nov. 1, 2007 through Feb. 1, 2011)

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
December 2007	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	4.475	12/1/2007
December 2007	Nitrogen, Ammonia (NH3-N)	30D Qty	0.28	.42345	12/1/2007
December 2007	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	17.7	12/13/2007
December 2007	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	1.67486	12/13/2007
January 2008	Total Suspended Solids	1D Conc	18	22.	1/23/2008
January 2008	Total Suspended Solids	1D Qty	1.70	2.08175	1/23/2008
February 2008	Total Suspended Solids	30D Conc	12	13.	2/1/2008
February 2008	Total Suspended Solids	30D Qty	1.14	1.23013	2/1/2008
February 2008	Total Suspended Solids	1D Conc	18	33.	2/28/2008
February 2008	Total Suspended Solids	1D Qty	1.70	3.12263	2/28/2008
February 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	8.9	2/28/2008
February 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	.84216	2/28/2008
February 2008	CBOD 5 day	1D Conc	15	18.	2/28/2008
February 2008	CBOD 5 day	1D Qty	1.42	1.70325	2/28/2008
February 2008	Dissolved Oxygen	1D Conc	6.0	5.5	2/28/2008
March 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	5.75	3/6/2008
March 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	.54409	3/6/2008
March 2008	Dissolved Oxygen	1D Conc	6.0	5.6	3/6/2008
April 2008	Nitrogen, Ammonia (NH3-N)	30D Qty	0.28	.28269	4/1/2008
April 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	6.8	4/3/2008
April 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	.64345	4/3/2008
April 2008	Dissolved Oxygen	1D Conc	6.0	5.2	4/3/2008
April 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	4.95	4/16/2008
April 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	.46839	4/16/2008
May 2008	Nitrogen, Ammonia (NH3-N)	30D Conc	2.0	4.1	5/1/2008
May 2008	Nitrogen, Ammonia (NH3-N)	30D Qty	0.19	.38796	5/1/2008
May 2008	Fecal Coliform	30D Conc	1000	7200.	5/1/2008
May 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	3.0	6.65	5/8/2008
May 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.28	.62926	5/8/2008
May 2008	Dissolved Oxygen	1D Conc	6.0	5.5	5/8/2008
May 2008	Fecal Coliform	1D Conc	2000	7200.	5/30/2008
June 2008	Total Suspended Solids	30D Conc	12	16.	6/1/2008
June 2008	Total Suspended Solids	30D Qty	1.14	1.514	6/1/2008
June 2008	Nitrogen, Ammonia (NH3-N)	30D Conc	2.0	3.445	6/1/2008
June 2008	Nitrogen, Ammonia (NH3-N)	30D Qty	0.19	.32598	6/1/2008
June 2008	Total Suspended Solids	1D Conc	18	22.	6/5/2008
June 2008	Total Suspended Solids	1D Qty	1.70	2.08175	6/5/2008
June 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	3.0	5.58	6/5/2008
June 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.28	.52801	6/5/2008

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
June 2008	Dissolved Oxygen	1D Conc	6.0	4.1	6/5/2008
August 2008	Total Suspended Solids	1D Qty	1.70	1.8168	8/28/2008
September 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	3.0	4.5	9/4/2008
September 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.28	.42581	9/4/2008
December 2008	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	3.228	12/1/2008
December 2008	Nitrogen, Ammonia (NH3-N)	30D Qty	0.28	.30545	12/1/2008
December 2008	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	15.6	12/11/2008
December 2008	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	1.47615	12/11/2008
December 2008	Dissolved Oxygen	1D Conc	6.0	5.2	12/11/2008
February 2009	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	4.95	2/27/2009
February 2009	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	.46839	2/27/2009
March 2009	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	5.	3/13/2009
March 2009	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	.47313	3/13/2009
September 2009	Nitrogen, Ammonia (NH3-N)	1D Conc	3.0	5.45	9/3/2009
September 2009	Nitrogen, Ammonia (NH3-N)	1D Qty	0.28	.51571	9/3/2009
November 2009	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	3.57	11/1/2009
November 2009	Nitrogen, Ammonia (NH3-N)	30D Qty	0.28	.33781	11/1/2009
November 2009	Total Suspended Solids	1D Conc	18	28.	11/5/2009
November 2009	Total Suspended Solids	1D Qty	1.70	2.6495	11/5/2009
November 2009	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	11.45	11/5/2009
November 2009	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	1.08346	11/5/2009
November 2009	Dissolved Oxygen	1D Conc	6.0	5.1	11/5/2009
December 2009	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	9.05	12/2/2009
December 2009	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	.85636	12/2/2009
January 2010	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	14.7325	1/1/2010
January 2010	Nitrogen, Ammonia (NH3-N)	30D Qty	0.28	1.39406	1/1/2010
January 2010	Total Suspended Solids	1D Conc	18	28.	1/7/2010
January 2010	Total Suspended Solids	1D Qty	1.70	2.6495	1/7/2010
January 2010	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	15.7	1/7/2010
January 2010	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	1.48561	1/7/2010
January 2010	CBOD 5 day	1D Conc	15	19.	1/7/2010
January 2010	CBOD 5 day	1D Qty	1.42	1.79788	1/7/2010
January 2010	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	32.	1/14/2010
January 2010	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	3.028	1/14/2010
January 2010	Dissolved Oxygen	1D Conc	6.0	5.5	1/14/2010
January 2010	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	11.15	1/21/2010
January 2010	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	1.05507	1/21/2010
March 2010	Total Suspended Solids	30D Conc	12	15.	3/1/2010
March 2010	Total Suspended Solids	30D Qty	1.14	1.41938	3/1/2010
March 2010	Nitrogen, Ammonia (NH3-N)	30D Conc	3.0	10.3866	3/1/2010
March 2010	Nitrogen, Ammonia (NH3-N)	30D Qty	0.28	.98284	3/1/2010
March 2010	Total Suspended Solids	1D Conc	18	30.	3/10/2010
March 2010	Total Suspended Solids	1D Qty	1.70	2.83875	3/10/2010
March 2010	Nitrogen, Ammonia (NH3-N)	1D Conc	4.5	29.75	3/10/2010

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
March 2010	Nitrogen, Ammonia (NH3-N)	1D Qty	0.43	2.81509	3/10/2010
July 2010	Nitrogen, Ammonia (NH3-N)	30D Conc	2.0	2.405	7/1/2010
July 2010	Nitrogen, Ammonia (NH3-N)	30D Qty	0.19	.22757	7/1/2010
July 2010	Fecal Coliform	30D Conc	1000	1320.	7/1/2010
July 2010	Nitrogen, Ammonia (NH3-N)	1D Conc	3.0	8.95	7/23/2010
July 2010	Nitrogen, Ammonia (NH3-N)	1D Qty	0.28	.84689	7/23/2010
October 2010	Nitrogen, Ammonia (NH3-N)	30D Conc	2.0	2.15	10/1/2010
October 2010	Nitrogen, Ammonia (NH3-N)	30D Qty	0.19	.20344	10/1/2010
October 2010	Fecal Coliform	30D Conc	1000	7000.	10/1/2010
October 2010	Nitrogen, Ammonia (NH3-N)	1D Conc	3.0	3.6	10/6/2010
October 2010	Nitrogen, Ammonia (NH3-N)	1D Qty	0.28	.34065	10/6/2010
October 2010	Fecal Coliform	1D Conc	2000	7000.	10/28/2010

Discussed during the inspection were the following items:

- 1) The gratings on some of the aeration tanks need side support rails replaced / installed, as they are currently rusted off and are unsupported in some areas. This represents a safety hazard should someone step on the grating, as they could fall into an aeration tank.
- 2) Since the last inspection the main air header and all aeration tank diffusers have been replaced.
- 3) It was observed that all four filter cells still are being dosed concurrently, and the ability to segregate the 4 filter cells individually is still recommended for better O&M control. It is recommended that a means of segregating the cells be implemented, either by plumber's plugs, or slide gates.
- 4) Since the last inspection, post aeration was added in the chlorine contact tank, prior to discharge. Addition of the post aeration has reduced the number of dissolved oxygen effluent violations, but not totally eliminated them.
- 5) Currently Ms. Douglas is estimating the average daily flow and reporting the estimated flows on Monthly Operating Reports. This practice does not meet the intent of the NPDES Permit, and needs to be corrected as soon as possible with the installation of a continuous reading flow meter. According to Ms. Douglas, a flow meter was purchased in November 2010, but has yet to be installed.
- 6) As per the NPDES Permit, samples collected for total suspended solids, CBOD₅, and ammonia nitrogen, are to be composite samples. According to Ms. Douglas, the samples collected and reported for these parameters are grab samples, which may not be totally representative of the wastewater being discharged. An automated composite sampler still needs to be installed to collect the required composite samples.

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- 7) Daily communication between WWTP maintenance personnel and Ms. Douglas is strongly recommended, and still needs to be improved. Potential effluent violations may be prevented if operation and maintenance problems are acted upon quickly.
- 8) The electrical box in the blower room is open and has no panel cover. Electrical wiring is exposed, and presents a severe shock hazard. The panel cover should be replaced as soon as possible.
- 9) In order to meet NPDES permit requirements, an operator's logbook needs to be kept at all permitted facilities, and there was an operator's logbook located in the blower building at the WWTP. There are specific record keeping criteria which need to be included in the logbook, of which a major requirement is log in / log out times for the WWTP operator. The operator log in / log out times were not observed to be present.
- 10) The included list of numeric effluent violations were discussed with Ms. Douglas. Ammonia violations are the majority of the excursions. The probable cause of the ammonia violations, and the actions being taken to correct the violations, is requested in writing.

A copy of this inspection report is being forwarded to Uni-Tech and Mr. Sabo. If you have any comments or questions about this document, you may contact me at (330) 963-1110.

Respectfully,



Charles E. Allen
Environmental Engineer
Division of Surface Water

CEA/mt

pc: Christina Douglas, Uni-Tech
John Sabo, Lorain County Health Dept.

File: SP/Sheffield/Sheffield Schools