



**Environmental  
Protection Agency**

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

August 13, 2012

RE: LORAIN COUNTY  
EATON HOMES WWTP  
CEI / NOV  
NPDES NO. 3PH00023

**CERTIFIED MAIL**

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

Dear Commissioners:

On July 12, 2012, a meeting was held at the Lorain County Engineer's Office, with Messrs. Jack Jannuzzi and Steve Hicks, of the Lorain County Engineer's Office; Mr. Richard Greenwood of KE McCartney & Associates; Mr. John Sabo, of the Lorain County Health Department; and this writer, of the Ohio EPA. The purpose of the meeting was to discuss the continuing non-compliance of the Eaton Homes wastewater treatment plant (WWTP) with its National Pollutant Discharge Elimination System (NPDES) permit to discharge, as well as the other three Lorain County owned and operated WWTP's.

Items discussed with Messrs. Jannuzzi, Hicks, and Greenwood include the following:

- 1) A list of all numeric effluent violations for Eaton Homes, and the three other Lorain County owned and operated WWTPs, was presented for discussion.
- 2) Discussed was the fact that the Eaton Homes WWTP is subject to Inflow and/or Infiltration (I/I) during periods of heavy precipitation. The I/I to the WWTP is considered to be the major cause of the episodes of non-compliance with NPDES permit effluent limit violations.
- 3) Also discussed were the past improvements made at the Eaton Homes WWTP, which were constructed to correct prior NPDES permit effluent violations.
- 4) In an attempt to reduce or eliminate the I/I to the Eaton Homes WWTP, the County had the entire sanitary sewer collection system tributary to the Eaton Homes WWTP relined by the Insituform Company. Manhole covers in the streets were also replaced with solid lids, if not already present.
- 5) Sanitary sewer laterals from the street to each individual home were not part of the sewer lining project. The County is now focusing its I/I reduction efforts on the sanitary laterals, and testing of the laterals to determine which, if any, are sources of I/I.
- 6) Smoke testing of the sanitary laterals has been conducted in the Eaton Homes development. In March 2012, any residence in which smoke was observed to be coming from downspouts or yard drains was sent a letter by the County, requiring

correction of the connection. The letter indicated the resident had until June 30, 2012, to correct the I/I problem found at their property.

- 7) Mr. Jannuzzi indicated that, for all four County owned WWTPs, a total of approximately 122 residences were sent the formal notices of required correction. Approximately 75% of all properties which were sent the letters in March 2012 have become compliant with the requested downspout removal or correction.
- 8) The County will continue to pursue correction of the remaining non-compliant properties found to have downspout problems.

Utilizing monthly operating data submitted for the Eaton Homes WWTP, the facility has been determined to be in significant non-compliance (SNC) for total suspended solids and CBOD. The attached document details the parameters in SNC for the last six-month period (December 2011 through May 2012).

As a reminder, SNC is defined by the USEPA as a 40% exceedance of specific conventional pollutant limits (1.4 x parameter effluent limit), or a 20% exceedance of toxic pollutant limits (1.2 x parameter effluent limit), at a given discharge point for any two or more months, during any two consecutive quarter period reviewed.

Conventional pollutants include: BOD/CBOD; total suspended solids; nutrients such as nitrogen (ammonia) and phosphorus; and oil & grease. Toxic pollutants include: total chlorine residual; heavy metals; and cyanide.

As discussed in the July 12<sup>th</sup> meeting, the County has been diligently continuing its efforts to address the SNC violations at the Eaton Homes WWTP. It was felt that locating, and correcting, sources of I/I tributary to the sanitary collection system would eliminate the cause SNC violations. Final results of the downspout I/I reduction program will be studied, and evaluated as to its effectiveness in the overall SNC reduction effort.

The County was asked during the meeting to submit an SNC Compliance Plan Report to the Ohio EPA, detailing their efforts in the removal of I/I from the collection system. The report should include such information as: the number of connections; length of sewer in the system; length of sewer relined; number of residences smoke tested; number of residences found to be in need of lateral repair or downspout disconnection; number of residential laterals repaired, and number still in need of repair; approximate amount of money spent on the itemized repairs and studies of the collection system.

A table of precipitation events, including dates and precipitation amounts, should be included in the report. It should also be determined if there is a correlation to the amount of rainfall received and for what duration, versus any NPDES permit excursions experienced.

The SNC Compliance Plan Report should also include further planned alternatives to correcting the non-compliance at the WWTP, and a tentative schedule for implementation of the alternatives.

Following the meeting, a Compliance Evaluation Inspection (CEI) was conducted on the Eaton Homes Wastewater Treatment Plant (WWTP). Present during the Eaton Homes WWTP inspection were Messers. Jannuzzi, Hicks, Greenwood, Sabo, and this writer.

The July 12<sup>th</sup> inspection was conducted to evaluate the present operation and maintenance conditions at the WWTP. The last compliance evaluation inspection conducted at the Eaton Homes WWTP was on August 11, 2011.

At the time of the July 12<sup>th</sup> inspection, the following observations were made:

- 1) The eastern extended aeration tank contents were dark brown in color, and were well aerated. The suspended solids (MLSS) concentration appeared to be in a higher than normal operating concentration, and return sludge to the eastern aeration tank was medium brown in color. According to Mr. Hicks, the 30-minute settling test for the eastern aeration tank contents resulted in approximately 770 ml/1000 ml (77%).
- 2) The western extended aeration tank contents were also dark brown in color, and were well aerated. The suspended solids (MLSS) concentration also appeared to be in a higher than normal operating concentration, and return sludge to the eastern aeration tank was medium brown in color. According to Mr. Hicks, the 30-minute settling test for the western aeration tank contents resulted in approximately 750 ml/1000 ml (62.5%).
- 3) The settling tank contents were clear for a depth of several feet, and there was a slight amount of what appeared to be grease floating on the water surface. Settling tank effluent troughs were clean and free of solids, but there was an algal growth on the outside of the trough weirs. Effluent leaving the settling tanks was visually clear and free of solids, and the sludge scraper flights were operational. The settling tank contents are manually skimmed, if needed, during an operator's shift.
- 4) Both tertiary drum filters were operational and in the 'AUTO' mode at the time of the inspection.
- 5) Disinfection of the final effluent was being performed with chlorine gas, and dechlorination of the chlorinated effluent is performed with a 38% sodium bisulfite solution. The chemicals are fed based upon flow rates at the WWTP, and approximately six to seven lbs/day of chlorine gas is used.

The chlorine contact tank contained a considerable amount of floating grease on the water surface, behind the initial baffles in the tank.



- 6) The Sludge Holding tank contents were brown in color, and were being well aerated. Sludge is hauled a couple times per year to the French Creek WWTP for treatment and disposal.

- 7) WWTP effluent was colorless, and visually free of solids or foam. The effluent is post-aerated prior to discharge.
- 8) The on-site standby generator is tested every Monday.
- 9) Effluent samples are collected by two operators at the Eaton Homes 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.

The parameters of pH, DO, and temperature are analyzed by Lorain County Engineers personnel at the WWTP; the remainder of required samples is analyzed by the French Creek WWTP lab.

- 10) The receiving stream was observed in the area of discharge. The inspection found what was suspected to be two separate effluent discharge locations. When questioned, none of the representatives knew of the source of water in the second discharge, which appeared to be an area exposed by cave-in of soil around a broken clay pipe.

Mr. Jannuzzi introduced a tracing dye into the effluent from the WWTP chlorine contact tank. Within several minutes' time, the dye was observed discharging from both of the pipes, into the receiving stream.



Western (Unpermitted) Effluent  
Discharge Location

Eastern (Permitted) Effluent  
Discharge Location

- 11) The County needs to locate the source of the unpermitted discharge, and seal the discharge, ensuring all treated effluent is directed to the receiving stream via the approved NPDES effluent discharge location.

A review of the electronic Discharge Monitoring Report (eDMR) data submitted for the Eaton Homes WWTP has been conducted. A review of the data for the period of August 1, 2011, through August 1, 2012, found the following numeric effluent violations:

**EATON HOMES WWTP  
NPDES PERMIT NO. 3PH00023  
EFFLUENT LIMIT VIOLATIONS  
(8/1/11 – 8/1/12)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
August 2011	Total Suspended Solids	30D Qty	9.1	12.4789	8/1/2011
August 2011	Total Suspended Solids	7D Qty	13.6	21.1083	8/1/2011
August 2011	CBOD 5 day	30D Qty	7.57	9.64283	8/1/2011
August 2011	CBOD 5 day	7D Qty	11.40	14.0048	8/1/2011
August 2011	Dissolved Oxygen	1D Conc	6.0	5.96	8/26/2011
September 2011	Total Suspended Solids	30D Qty	9.1	10.0909	9/1/2011
September 2011	Nitrogen, Ammonia (NH3-N)	7D Qty	1.74	1.79454	9/1/2011
September 2011	CBOD 5 day	30D Qty	7.57	8.29022	9/1/2011
September 2011	CBOD 5 day	7D Qty	11.40	11.6943	9/1/2011
October 2011	Total Suspended Solids	30D Conc	12	15.125	10/1/2011
October 2011	Total Suspended Solids	30D Qty	9.1	13.2961	10/1/2011
October 2011	pH	1D Conc	6.5	6.49	10/4/2011
October 2011	Total Suspended Solids	7D Qty	13.6	18.2790	10/8/2011
October 2011	Total Suspended Solids	7D Conc	18	18.5	10/15/2011
October 2011	Total Suspended Solids	7D Qty	13.6	25.8568	10/15/2011
October 2011	Total Suspended Solids	7D Conc	18	19.05	10/22/2011
November 2011	Total Suspended Solids	30D Conc	12	23.6	11/1/2011
November 2011	Total Suspended Solids	7D Conc	18	38.9	11/1/2011
November 2011	pH	1D Conc	6.5	6.42	11/1/2011
November 2011	Total Suspended Solids	7D Conc	18	24.	11/15/2011
November 2011	Total Suspended Solids	7D Qty	13.6	16.8826	11/15/2011
December 2011	Total Suspended Solids	30D Conc	12	23.7666	12/1/2011
December 2011	Total Suspended Solids	7D Conc	18	43.95	12/1/2011
December 2011	Total Suspended Solids	30D Qty	9.1	24.4957	12/1/2011
December 2011	Total Suspended Solids	7D Qty	13.6	59.1312	12/1/2011
December 2011	CBOD 5 day	30D Conc	10	12.8666	12/1/2011
December 2011	CBOD 5 day	7D Conc	15	18.5	12/1/2011
December 2011	CBOD 5 day	30D Qty	7.57	12.4133	12/1/2011
December 2011	CBOD 5 day	7D Qty	11.40	24.8916	12/1/2011
December 2011	Total Suspended Solids	7D Conc	18	34.45	12/8/2011
December 2011	Total Suspended Solids	7D Qty	13.6	13.6684	12/8/2011
December 2011	CBOD 5 day	7D Conc	15	22.65	12/8/2011
December 2011	Total Suspended Solids	7D Qty	13.6	17.1237	12/22/2011
January 2012	Total Suspended Solids	30D Qty	9.1	11.6792	1/1/2012
January 2012	Total Suspended Solids	7D Conc	18	24.15	1/15/2012
January 2012	Total Suspended Solids	7D Qty	13.6	33.9809	1/15/2012
March 2012	Total Suspended Solids	7D Qty	13.6	21.6857	3/15/2012
May 2012	Total Suspended Solids	30D Conc	12	19.72	5/1/2012
May 2012	Total Suspended Solids	30D Qty	9.1	9.21717	5/1/2012
May 2012	Total Suspended Solids	7D Conc	18	25.65	5/8/2012
May 2012	Total Suspended Solids	7D Qty	13.6	25.1343	5/8/2012
May 2012	Total Suspended Solids	7D Conc	18	44.25	5/15/2012

The Lorain County Sanitary Engineers should continue with their efforts in locating and correcting sources of I/I to the Eaton Homes WWTP. The County should also operate and maintain the WWTP in such a manner as to consistently meet its NPDES permit limits.

The SNC Compliance Plan Report should be prepared and submitted to the Northeast District Office of the Ohio EPA no later than October 1, 2012.

If there are any comments or questions concerning this document, you may contact me at (330) 963-1110.

Respectfully,



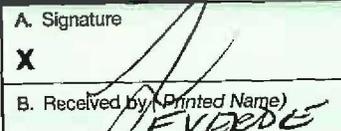
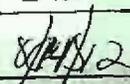
Charles E. Allen  
Environmental Engineer  
Division of Surface Water

CEA/cs

Attachment

cc: Mr. Ken Carney, P.E., County Engineer, Lorain County Engineer's Office

File: MUNI/Lorain/Eaton Homes P&C

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"><li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li><li>Print your name and address on the reverse so that we can return the card to you.</li><li>Attach this card to the back of the mailpiece, or on the front if space permits.</li></ul>	A. Signature <b>X</b>  <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee
1. Article Addressed to:  Lorain County Commissioners Administration Building 216 Middle Avenue Elyria, OH 44035	B. Received by (Printed Name) <b>F. VERDE</b> C. Date of Delivery <b>8/15/12</b>
2. Article Number (Transfer from service label)	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No
PS Form 3811, February 2004	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.
Domestic Return Receipt	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
102595-02-M-1540	7010 3090 0000 3937 8484 DSW 

**Eaton Homes WWTP**  
**NPDES No. 3PH00023**  
**SNC Violations**  
**(12/11 – 5/12)**

Facility	Report Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
Eaton Homes WWTP	Dec 2011	Total Suspended Solids	7D Qty	13.6	59.1312	12/1/2011
Eaton Homes WWTP	Dec 2011	Total Suspended Solids	7D Conc	18	43.95	12/1/2011
Eaton Homes WWTP	Dec 2011	Total Suspended Solids	30D Conc	12	23.7666	12/1/2011
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Eaton Homes WWTP	Dec 2011	Total Suspended Solids	7D Qty	13.6	17.1237	12/22/2011
Eaton Homes WWTP	Jan 2012	Total Suspended Solids	30D Qty	9.1	11.6792	1/1/2012
Eaton Homes WWTP	Jan 2012	Total Suspended Solids	7D Qty	13.6	33.9809	1/15/2012
Eaton Homes WWTP	Jan 2012	Total Suspended Solids	7D Conc	18	24.15	1/15/2012
Eaton Homes WWTP	Mar 2012	Total Suspended Solids	7D Qty	13.6	21.6857	3/15/2012
Eaton Homes WWTP	May 2012	Total Suspended Solids	30D Qty	9.1	9.21717	5/1/2012
Eaton Homes WWTP	May 2012	Total Suspended Solids	30D Conc	12	19.72	5/1/2012
Eaton Homes WWTP	May 2012	Total Suspended Solids	7D Qty	13.6	25.1343	5/8/2012
Eaton Homes WWTP	May 2012	Total Suspended Solids	7D Conc	18	25.65	5/8/2012
Eaton Homes WWTP	May 2012	Total Suspended Solids	7D Conc	18	44.25	5/15/2012
Eaton Homes WWTP	Dec 2011	CBOD 5 day	7D Conc	15	18.5	12/1/2011
Eaton Homes WWTP	Dec 2011	CBOD 5 day	30D Conc	10	12.8666	12/1/2011
Eaton Homes WWTP	Dec 2011	CBOD 5 day	30D Qty	7.57	12.4133	12/1/2011
Eaton Homes WWTP	Dec 2011	CBOD 5 day	7D Qty	11.40	24.8916	12/1/2011
Eaton Homes WWTP	Dec 2011	CBOD 5 day	7D Conc	15	22.65	12/8/2011

