



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

January 11, 2013

Mr. Robert Leventry  
Butler County Water and Sewer Department  
130 Hugh Street  
Hamilton, Ohio 45011

**RE: Butler County, Upper Mill Creek WWTP, Compliance Evaluation Inspection**

Dear Mr. Leventry:

On November 29, 2012, I conducted a Compliance Evaluation Inspection at the Upper Mill Creek WWTP (NPDES Permit No. OH0072087; OEPA Permit No. 1PK00016\*LD). Representing this Facility were Jack Thornsberry, Brain Custer, Todd Madden, Jeremy Hamel, Sue Vance, Adam Sackenheim, Mark Smith and you. Alyssa Jenkins and Cheryl Shields with Hazen and Sawyer also attended this inspection. A copy of my inspection report is enclosed.

The Effluent / Receiving Water section was rated unsatisfactory due to the effluent phosphorus violations. The Facility has been in significant noncompliance with the phosphorus limits for past seven months. The County is in the process of determining the reasons for these violations. Ohio EPA is very concerned about facilities that are in significant noncompliance of their effluent limits. To address these violations, the county is required to comply with the following requirements:

1. The County is required to continue to investigate the sources of the increase of the influent phosphorus loads and the possible treatment system bio inhibitors. These sources should be controlled as much as possible. The County must also investigate possible WWTP process changes or upgrades that may be necessary to comply with the phosphorus limits.
2. By August 31, 2013, the County is required to submit, if necessary, a Permit to Install application for any necessary WWTP upgrades or modifications (i.e., new filter system or treatment tanks).
3. By October 31, 2013, the County is required to start construction, if necessary, of any required WWTP upgrades or modifications.
4. By December 31, 2013, the County is required to complete construction, if necessary, of any required WWTP upgrades or modifications and comply with the final phosphorus permit limits (1.0 mg/l total phosphorus (monthly) and 1.5 mg/l total phosphorus (weekly)).

5. Until final compliance is achieved for phosphorus (i.e., three consecutive months of compliance with phosphorus limits), the county is required to submit a monthly status report addressing work completed toward final compliance. These reports must be received by the 1<sup>st</sup> of each month.

The County is required to confirm, in writing, by February 1, 2013 of their intent to comply with these requirements. This response should also include the monthly reporting requirements addressed in this letter.

If you have any questions, please call me at (937) 285 - 6096.

Sincerely,



Ned Sarle  
Environmental Specialist 2  
Division of Surface Water – Permits Section

NS/tb

Enclosure

ec: Brian Custer, Butler County Water and Sewer Department  
Todd Madden, Butler County Water and Sewer Department



State of Ohio Environmental Protection Agency  
Southwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PK00016*LD	OH0072087	11/29/2012	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Butler County Upper Mill Creek WWTP 6055 Centre Park Drive West Chester, OH 45069	9:40 A.M.	2/1/2011
	Exit Time	Permit Expiration Date
	11:40 A.M.	7/31/2012
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Robert Leventry, Director	(513) 887-5616	
Jack Thornsberry, Division Head of Operations	(513) 887-3929	
Brain Custer, Field Superintendent	(513) 887-5552	
Todd Madden, Chief Operator	(513) 785-5281	
Jeremy Hamel, WW Operator III	(513) 887-3686	
Sue Vance, Technical Services Superintendent	(513) 887-3686	
Adam Sackenheim, Regulatory Compliance Manager	(513) 887-3686	
Mark Smith, Industrial Services Manager	(513) 887-5573	
Name, Address and Title of Responsible Official	Phone Number	
Robert Leventry, Director 130 High Street Hamilton, Ohio 45011	(513) 887-5616	

Section C: Areas Evaluated During Inspection					
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)					
S	Permit	N	Flow Measurement	N	Pretreatment
S	Records/Reports	N	Laboratory	S	Compliance Schedule
S	Operations & Maintenance	U	Effluent/Receiving Waters	S	Self-Monitoring Program
S	Facility Site Review	N	Sludge Storage/Disposal	N	Other
N	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)	
See Attached Summary of Findings / Comments.	
Inspector	Reviewer
 Ned Sarle Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
11/29/13 Date	11/11/13 Date

Permit #: 1PK00016\*LD

NPDES #: OH0072087

Sections E thru K: Complete on all inspections as appropriate

**Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated**

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**Section E: Permit Verification**

Inspection observations verify the permit

- (a) Correct name and mailing address of permittee ..... Y
- (b) Flows and loadings conform with NPDES permit..... Y
- (c) Treatment processes are as described in permit application... Y
- (d) All discharges are permitted..... Y
- (e) Number and location of discharge points are as described  
in permit..... Y
- (f) Storm water discharges properly permitted..... Y

Comments/Status:

Facility has coverage under a general Industrial Storm Water NPDES Permit.

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**Section F: Compliance**

- (a) Any violations since the last inspection..... Y
- (b) Appropriate Non-compliance notification of violations..... Y
- (c) Permittee is taking actions to resolve violations..... Y
- (d) Permittee has a compliance schedule..... Y
- (e) Compliance schedule contained in...NPDES Permit Compliance Schedule
- (f) Permittee is in compliance with schedule..... Y
- (g) Has biomonitoring shown toxicity in discharge since last inspection Y

Comments/Status:

See Attached Summary of Findings / Comments.

Section G: Operation & Maintenance

**Treatment Works:**

Treatment facility properly operated and maintained

(a) Standby power available.....generator  or dual feed ..... N/E

i. What does the back-up power source operate.....

ii. How often is the generator tested under load.....

(b) Which components have an alarm system available for power or equipment failures.....

(c) All treatment units in service other than backup units..... Y

(d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....

(e) Any major equipment breakdown since last inspection..... N

(f) Operation and maintenance manual provided and maintained..... N/E

(g) Any plant bypasses since last inspection..... N/E

(h) Any plant upsets since last inspection..... Y

Comments/Status:

See Attached Summary of Findings / Comments.

Permit #: 1PK00016\*LD

NPDES #: OH0072087

**Section G: Operation & Maintenance con't**

**Record Keeping/Operator of Record:**

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... IV
- (b) Operator of Record holds unexpired license of class required by Permit..... Y
- (c) Copy of certificate of Operator of Record displayed on-site..... N/E
- (d) Has the Operator of Record submitted an ORC Notification form. N/E
- (e) Minimum operator staffing requirements fulfilled (OAC 3745-7).... N/E
- (f) If a Staffing Reduction plan has been approved, are the stipulations of the plan being met.....N/E
- (g) Operator of Record log book provided..... N/E
- (h) Format of log book (e.g. computer log, hard bound book)
- (i) Log book kept onsite (in an area protected from weather)..... N/E
- (j) Log book contains the following:
  - I. Identification of treatment works..... N/E
  - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... N/E
  - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... N/E
  - iv. Laboratory results (unless documented on bench sheets)... N/E
  - v. Identification of person making entries..... N/E
- (k) Has the Operator of Record submitted written notifications to the permittee, Ohio EPA and, if applicable, any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred..... Y

**Comments/Status:**

None.

Section G: Operation & Maintenance con't

Collection System:

- (a) Are there pump stations in the collection system..... N/E
  - i. How many publicly-owned pump stations equipped with permanent standby power or equivalent.....4
  - ii. How many pump stations have telemetered alarms.....12
  - iii. How many pump stations have operable alarms.....12
  
- (b) Any chronic collection system overflows since last inspection..... N/E
- (c) Regulatory agency notified of all overflows..... N/E
- (d) Are there CSOs in the collection system..... N/A  
if so, what is the LTCP status.....
  
- (e) How are CSOs monitored (chalk, block, level sensor, etc.).....
  
- (f) Portable pumps available for collection system maintenance..... N/E
- (g) RDII Program established and active..... N/E
- (h) Any WIB complaint received since last inspection..... N/E
- (i) Is there a WIB response plan..... N/E
- (j) Is any portion of the collection system at or near dry weather capacity..... N/E

Comments/Status:

None.

**Section H: Sludge Management**

- (a) Method of Sludge Disposal...  Land Application  
 Haul to Another NPDES Permittee  
 Haul to a Mixed Solid Waste Landfill

\*if one of the selected methods is land application, complete applicable charts.

**Class A - Exception Quality Sewage Sludge (monitoring station 584)**

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options							
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 – Aerobic Bench Scale Analysis	Option 4 – Specific Oxygen Uptake Rate	Option 5 – Aerobic Time and Temperature	Option 6 – Alkali Addition	Option 7 – >75% Percent Solids without Unstabilized Solids	Option 8 - >75% Percent Solids with Unstabilized Solids
Alternative 1 – Time and Temperature Regime (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 – High pH and High Temperature (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 – Other Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 4 – Unknown Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Composting (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Heat Drying (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Heat Treatment (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Thermophilic Aerobic Digestion (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Beta Ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Gamma ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 – Pasteurization (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 6 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Class B Sewage Sludge (monitoring station 581)**

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options									
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 – Aerobic Bench Scale Analysis	Option 4 – Specific Oxygen Uptake Rate	Option 5 – Aerobic Time and Temperature	Option 6 – Alkali Addition	Option 7 – >75% Percent Solids without Unstabilized	Option 8 - >75% Percent Solids with Unstabilized	Option 9 – Land Injection	Option 10 – Immediate Incorporation
Alternative 1 - Geometric Mean of Seven Fecal Samples (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Aerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Air Drying (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Anaerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 – Composting (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Lime Treatment (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 – Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (b) Has amount of sludge generated changed significantly since the last inspection..... N/E
- (c) How much sludge storage is provided at the plant.....
- (d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... N/E
- (e) Any complaints received in last year regarding sludge..... N/E
- (f) 5/8" screen at headworks for facilities that land apply sludge..... N/E
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... N/E
- (h) Is a contractor used for sludge disposal..... N/E  
 If so, what is the name of the contractor.....

**Comments/Status:**

None.

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**Section I: Self-Monitoring Program**

**Flow Measurement:**

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):
- (b) Flow meter calibrated annually ..... N/E  
(Date of last calibration: 8/31/2011)
- (c) 24-hour recording instruments operated and maintained..... N/E
- (d) Flow measurement equipment adequate to handle full range of flows..... N/E
- (e) All discharged flow is measured..... N/E

**Comments/Status:**

None.

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**Section I: Self-Monitoring Program (con't)**

**Sampling:**

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y  
(see GLC page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

**Comments/Status:**

None.

**Section I: Self-Monitoring Program (con't)**

**Laboratory:**

*General*

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... N/E
- (b) Do SOP's include the following if applicable..... N/E
  - Title
  - Scope and Application
  - Summary
  - Sample Handling and Preservation
  - Interferences
  - Apparatus and Materials
  - Reagents
  - Procedure
  - Calculations
  - Quality Control
  - Maintenance
  - Corrective Action
  - Reference (Parent Method)

*Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.*

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. N/E
- (d) If alternate analytical procedures are used, proper approval has been obtained..... N/E
- (e) Analyses being performed more frequently than required by permit. N/E
- (f) If (e) is yes, are results in permittee's self-monitoring report..... N/E
- (g) Satisfactory calibration and maintenance of instruments/equipment. N/E (see score from GLC page)
- (h) Commercial laboratory used..... N/E  
Parameters analyzed by commercial lab:

Lab name:

*Discharge Monitoring Report Quality Assurance (DMRQA)*

- (a) Participation in latest USEPA quality assurance performance sampling..... N/E  
Date:
- (b) Were any parameters "Unsatisfactory"..... N/E
- (c) Reasons for "Unsatisfactory" parameters.....

**Comments/Status:**

Permit #: 1PK00016\*LD  
NPDES #: OH0072087

**Section J: Effluent/Receiving Water Observations**

Outfall # 001

Outfall Description: Effluent pipe

Receiving Stream: East Fork Mill Creek

Receiving Stream Description: No adverse impacts were noted.

**Comments/Status:**

None.

**Section K: Multimedia Observations**

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

If any of the above are observed, ask the following questions:

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

**Comments/Status:**

None.

Permit #: 1PK00016\*LD  
 NPDES #: OH0072087

### Summary of Findings / Comments

A review of the Discharge Monitoring Reports (DMRs) for November 2010 through November 2012 indicated numerous NPDES Permit violations. These violations are as follows:

Reporting Period	Parameter	Limit Type	Units	Limit	Reported Value
July 2011	Phosphorus	Monthly	mg/l	1.0	1.3
July 2011	Phosphorus	Weekly	mg/l	1.5	1.6
December 2011	TSS	Weekly	kg/day	1090.1	2370.6
December 2011	Phosphorus	Monthly	mg/l	1.0	1.04
December 2011	Phosphorus	Weekly	mg/l	1.5	1.6
December 2011	Nitrite + Nitrate	Weekly	kg/day	454.2	607.1
May 2012	TSS	Weekly	mg/l	18	25
May 2012	TSS	Weekly	kg/day	1090.1	2022.5
May 2012	Phosphorus	Monthly	mg/l	1.0	1.1
May 2012	Phosphorus	Weekly	mg/l	1.5	2.2
June 2012	TSS	Weekly	mg/l	18	20
June 2012	Phosphorus	Monthly	mg/l	1.0	1.2
June 2012	Phosphorus	Weekly	mg/l	1.5	1.7
July 2012	Phosphorus	Weekly	mg/l	1.5	1.7
September 2012	Phosphorus	Monthly	mg/l	1.0	1.9
September 2012	Phosphorus	Weekly	mg/l	1.5	2.1
September 2012	Phosphorus	Weekly	mg/l	1.5	2.5
October 2012	Phosphorus	Monthly	mg/l	1.0	1.7
October 2012	Phosphorus	Weekly	mg/l	1.5	1.6
October 2012	Phosphorus	Weekly	mg/l	1.5	1.6
October 2012	Phosphorus	Weekly	mg/l	1.5	2.3
November 2012	Phosphorus	Monthly	mg/l	1.0	1.2
November 2012	Phosphorus	Weekly	mg/l	1.5	2.1
November 2012	Phosphorus	Weekly	mg/l	1.5	1.7

The facility has been in significant noncompliance due to the monthly and weekly phosphorus limit violations for May through November 2012. Significant noncompliance occurred when the violations exceeded 1.4 times the limits for two months in the six month period. The Ohio EPA is very concerned about facilities that are in significant noncompliance of their effluent limits. All future violations must continue to be reported as required by the NPDES Permit as detailed in Part III.12 titled "Noncompliance Notification."

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The reasons for the phosphorus violations are still not completely clear to the county. The influent phosphorus loads are variable but appear to have increased significantly over the past several years. The source of these new loads has not been found at this time. The county also believes that sulfate reducing bacteria levels have increased while the polyphosphate accumulating bacteria levels have decreased. This change in the WWTP biology may be due to the influent sulfate and/or TDS level increases. The county is investigating possible sources of these increases. The biological treatment may also have been inhibited due to industrial discharges containing high levels of quaternary ammonia. The known sources of quaternary ammonia are being controlled as much as possible through the County's pretreatment program.

The county is also not sure if other wastewater characteristics are contributing to these WWTP upsets. Extensive WWTP and collection system sampling has been and will be conducted to try and pinpoint the source of these violations. Past efforts to address the phosphorus discharge have been to work with local industries to reduce their discharge loads, industries are billed for high strength loads, surcharges are levied for high concentrations and loadings, and WWTP operational changes have been investigated. To address the recent violations, the county has hired Hazen and Sawyer to assist in finding and reducing the phosphorus influent loads and to model the phosphorus treatment. The current chemical addition system is being repaired. The county is also continuing to reseed the WWTP with activated sludge from another treatment system.

The WWTP is designed for an average daily flow of 16.0 MGD and a peak daily flow of 40.0 MGD. A review of the DMRs for this period indicated that the average daily flow was 8.60 MGD. The peak daily flow was 38.2 MGD and occurred on December 6, 2011.

The treatment system consists of a bar rack, vortex grit tank, anaerobic selector tank, anoxic tank, oxidation ditch, secondary clarifier, ultraviolet disinfection and cascade aeration. A flow equalization tank is also provided. Waste activated sludge is immediately pressed using a centrifuge sludge press and then hauled from the site.