



State of Ohio Environmental Protection Agency

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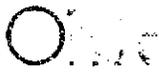
1PK0000520100405

HAMILTON SYCAMORE CREEK WWTP

JACKSON, JOSHUA 2010/04/05

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

MSD Sycamore Creek WWTW
Corresp.



**Environmental
Protection Agency**

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korfusik, Director

April 5, 2010

Hamilton County Board of Commissioners
138 E. Court Street, Room 603
Cincinnati, OH 45202

**RE: MSD Sycamore Creek WWTW / Compliance Evaluation Inspection
NPDES Permit No. OH0025488 / OEPA PERMIT NO. 1PK00005*ID**

Gentlemen:

On March 19, 2010, I conducted an NPDES Compliance Evaluation Inspection at the Metropolitan Sewer District of Greater Cincinnati (MSDGC) Sycamore Creek wastewater treatment works (WWTW). Tom Kutcher, Barb Browne, Keith Heffner, Paul Weber, Ed Ewbank and John Neumann with MSDGC, were present during the inspection. The purpose of the inspection was to evaluate compliance with the terms and conditions of the NPDES Permit.

A copy of the Compliance Evaluation Inspection report is enclosed. All evaluated areas received "Satisfactory" ratings with the exception of two. **Please pay close attention to the "items requiring correction" shown in bold type.**

Thank you and your staff for the time extended during the inspection process. If you have any questions, please feel free to contact me by phone at (937) 285-6029 or by e-mail at joshua.jackson@epa.state.oh.us.

Respectfully,

Joshua Jackson
Environmental Specialist II
Division of Surface Water

Cc: Barb Browne, MSDGC
Ed Ewbank, MSDGC

Enclosure





State of Ohio Environmental Protection Agency
Southwest District Office

NPDES Compliance Inspection Report

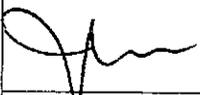
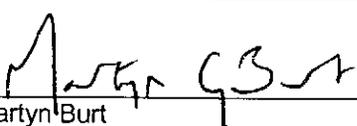
Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PK00005*ID	OH0025488	3/19/2010	C	S	11

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
MSD Sycamore Creek WWTW 9273 Old Remington Road Hamilton County	9:00 a.m.	3/1/2005
	Exit Time	Permit Expiration Date
	12:00 p.m.	2/28/2010
Name(s) and Title(s) of On-Site Representatives		Phone Number(s)
Tom Kucher, Plant Superintendent Barb Brown, Sr. Plant Supervisor		513-791-3508
Name, Address and Title of Responsible Official		Phone Number
James A. Parrott, MSD Executive Director 1600 Gest Street Cincinnati, OH 45204		513-244-1300

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

Section D: Summary of Findings (Attach additional sheets if necessary)

See Attached Report.

Inspector	Reviewer
 Joshua Jackson Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
Date 4-1-10	Date 4/5/10

Sections E thru K: Complete on all inspections as appropriate
Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

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:

I instructed staff to investigate the checklist for the "No Exposure Certification" (storm water). If MSD is able to certify, this wastewater facility would be excluded from storm water requirements for industrial activity.

Section F: Compliance

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

Comments/Status:

In part I.C (E) of the permittee NPDES permit (compliance schedule), the permittee was required to do the following items:
1. Beginning in the year 2006 and continuing until the year 2009, the permittee shall submit an annual status report on its actions to achieve compliance with the final effluent limits for silver at station number 1PK 00005001. The report shall be submitted as part of the permittee's annual pretreatment report, which is due on April 15 of each year.

Ohio EPA does not have documentation showing that this item was completed.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

(a) Standby power available.....generator or dual feed Y

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

Two back-up generators power the entire facility

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

1/week (every Thursday)

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

Sycamore Creek WWTW is equipped with a SCADA system. Operations staff can view/change component setpoints at the operator's station located in the Administration building or some of the individual units.

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

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

Maximo software/database - Predictive Maintenance Program

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

(f) Operation and maintenance manual provided and maintained..... Y

(g) Any plant bypasses since last inspection..... Y

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

Comments/Status:

Tertiary sand filters have been out of service since September 18, 2009. MSD will be replacing these filter with disc filters this summer.
Between January 1, 2009, and March 1, 2010, the Chemically Enhance High Rate Treatment (CEHRT) system treated and discharged a portion of the WWTW influent on 89 different days. According to MSD staff, this was due to lessened biological treatment capacity as a result of WWTW construction. The design "trigger" point of CEHRT use is 18 MGD; however, during WWTW construction this trigger point was reduced. Since the Sycamore WWTW can now take 18 MGD through secondary treatment, the instances of CEHRT use should be greatly reduced. The original design anticipated utilizing the CEHRT 8-10 days/year. In 2009, influent flows exceeded 18 MGD only 6 times. The CEHRT has been used 2 different days since biological treatment for the WWTW is fully operational.

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
- (d) Has the Operator of Record submitted an ORC Notification form.. Y
- (e) Minimum operator staffing requirements fulfilled (OAC 3745-7).... Y
- (f) If a Staffing Reduction plan has been approved, are the stipulations of the plan being met..... Y
- (g) Operator of Record log book provided..... Y
- (h) Format of log book (e.g. computer log, hard bound book)

eOPS (electronic operations) - long term storage, reporting and data entry.
Each operator has their own log-in and password.
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
 - I. Identification of treatment works..... Y
 - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... Y
 - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... Y
 - iv. Laboratory results (unless documented on bench sheets)... N
 - v. Identification of person making entries..... Y
- (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:

At the time of the inspection, Barb Browne and Larry Scanlan (both Class IV wastewater operators) are listed as Operators of Record for the Sycamore Creek WWTW. According to MSDGC staff, Mr. Scanlan does not operate at the Sycamore Creek WWTW any longer. **An Operator of Record Notification form should be submitted to Ohio EPA requesting that Mr. Scanlan be removed as one of the Operators of Record. This should be done without delay.**

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.....
 - ii. How many pump stations have telemetered alarms.....
 - iii. How many pump stations have operable alarms.....

- (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/E
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:

Section H: Sludge Management

- (a) Method of Sludge Disposal...
 - Land Application
 - Haul to Another NPDES Permittee
 - Haul to a Mixed Solid Waste Landfill
- (b) Has amount of sludge generated changed significantly since the last inspection..... N
- (c) How much sludge storage is provided at the plant.....

Two holding tanks with a total capacity of ~ 780,000 gallons. Liquid Sludge is hauled to the MSD Little Miami WWTW
- (d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y
- (e) Any complaints received in last year regarding sludge..... N
- (f) 5/8" screen at headworks for facilities that land apply sludge..... N/A
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... N/A
- (h) Is a contractor used for sludge disposal..... N
If so, what is the name of the contractor.....

Comments/Status:

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):

Accusonic (in an open channel)
- (b) Flow meter calibrated annually N
(Date of last calibration: None since installation)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... N/E
- (e) All discharged flow is measured..... Y

Comments/Status:

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:

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).. Y
- (d) If alternate analytical procedures are used, proper approval
has been obtained..... N/A
- (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..... Y
Parameters analyzed by commercial lab: Bioassays

Lab name: Stantec

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:

Parameters other than temp., pH, DO and bioassays are tested at the Polk Run WWTW lab or at the lab at the Mill Creek WWTW (metals)

Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: Effluent was clear with small quantities of foam that dissipated 10-20 yards from the discharge location

Receiving Stream: Sycamore Creek

Receiving Stream Description: No observable solids attributed to the WWTW on the stream bed.

Comments/Status:

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:

Inspection Findings

The Metropolitan Sewer District of Greater Cincinnati (MSDGC) Sycamore Creek wastewater treatment works (WWTW) is permitted to treat and discharge an average daily design flow of 9.0 MGD with a peak biological treatment capacity of 18 MGD. When influent flows exceed 18 MGD, excess flow pumps begin routing wastewater to the chemically enhanced high rate treatment (CEHRT) units at a minimal rate of 3.2 MGD each. Both CEHRTs are designed to treat a total of 32 MGD (16 MGD each) of excess wastewater before recombining with treated secondary/tertiary effluent prior to disinfection/post aeration and discharge to Sycamore Creek. The total wet weather capacity of WWTW is 50 MGD.

Phases 1-4 of the Sycamore Creek WWTW upgrades (approved under PTI#s 05-13810 and 608699) are nearly completed. MSD will be submitting additional permit to install application(s) in the upcoming weeks to also include: conversion of two existing primary clarifiers to anaerobic selector tanks that will be utilized for biological phosphorus removal and rehabilitation of the existing sand filters to disc filtration (as well as other ancillary changes). These improvements will not increase the permitted treatment capacity of the WWTW, but rather give the operation staff more tools to consistently achieve compliance with the NPDES permit.

Ohio EPA is in the process of renewing the NPDES permit for the MSDGC Sycamore Creek WWTW. As part of the renewal, Ohio EPA will be applying all concentration and loading limitations for the WWTW effluent after UV disinfection/post aeration (monitoring station 1PK00005003). This is also after the point where the CEHRT recombines with secondary/tertiary effluent.

MSDGC Sycamore Creek WWTW EFFLUENT LIMIT VIOLATIONS (Period of Review: January 2009 – February 2010)

7D = Weekly 30D = Monthly
 1D = Daily Conc. = Concentration (mg/l) Qty. = Quantity (Kg/Day)

Reporting Period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value
June 2009	002	00610	Nitrogen, Ammonia (NH3)	7D Conc	2.0	2.39143
June 2009	001	00610	Nitrogen, Ammonia (NH3)	7D Conc	2.0	2.25714
June 2009	001	00610	Nitrogen, Ammonia (NH3)	7D Qty	68	74.2735

*Self-notification letters were submitted to Ohio EPA to explain the violations shown above.

Rain Derived Inflow & Infiltration

It has been well documented that MSD has excessive rain-derived inflow & infiltration (RDII) in the collection system tributary to the Sycamore Creek WWTW. **Please submit a report to the Ohio EPA Southwest District Office no later than May 15, 2010, that documents completed RDII remediation projects within the sewershed in calendar year 2009. This report shall describe the work performed with each project and estimated impact in removing clean water from the collection system.**

Quality Assurance & Standard Operating Procedures

The foundation of the NPDES permitting program is the reliability of data "self-reported" by wastewater dischargers under permit. Part III, 3., of the NPDES permit requires "All wastewater treatment works shall be operated in a manner consistent with the following: At all times, the permittee shall maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee necessary to achieve compliance with the terms and conditions of this permit. *Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures...*" Part III, 5., goes on to say, "Test procedures for the analysis of pollutants shall conform to regulation 40 CFR 136... The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to insure accuracy of measurements."

The federal regulatory benchmark for all water and wastewater sampling/laboratory procedures is 40 CFR 136. This rule lists acceptable sampling and laboratory procedures published in "Standard Methods for the Examination of Water and Wastewater" (Standard Methods) among other resources such as the American Society for Testing and Materials (ASTM). Standard Methods is a comprehensive reference widely used throughout the industry and is cooperatively published by the American Water Works Association, Water Environment Federation and the American Public Health Association.

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". *Without a QA program, the City is without defensible data showing compliance with the NPDES permit.* Standard Methods goes on to require the inclusion of Standard Operating Procedures (SOP) for each analytical method within the QA manual. The SOP should include the following applicable categories:

- Title
- Scope and Application
- Summary
- Sample Handling and
- Procedure
- Calculations
- Quality Control (calibration)
- Maintenance

- Preservation
- Interferences
- Apparatus and Materials
- Reagents
- Corrective Action
- Reference (Parent Method)

As follow-up, this office provided Sycamore Creek WWTW staff an example SOP for pH (utilized by Ohio EPAs laboratory). **It is expected that MSDGC develop SOPs for the following analytical procedures (at a minimum) by no later than June 1, 2010: pH, temperature, dissolved oxygen and sample collection. Each of the SOPs should comply with the analytical methods outlined in Standard Methods.** Even though the pH, temperature and dissolved oxygen meters are automated, SOPs should still be developed.

Calibration of Primary Flow Meter

According to the manufacturer of the Accusonic effluent flow meter (from emails provided by MSDGC staff), the meter does not need annual calibration.

Accurate discharge flow monitoring is one of the foundational requirements of the NPDES permitting program; pollutant loading-based limitations are discharge flow driven, as are waste load allocations to meet Ohio water quality standards. Therefore, it is paramount that all NPDES-permitted facilities report accurate and defensible data to Ohio EPA. Annual calibration of flow monitors goes towards re-validating discharge flow data.

MSDGC shall develop a procedure to certify the effluent flow data is true and accurate. This certification should be done annually and be made available to Ohio EPA upon request. The procedure shall be developed no later than June 1, 2010.