



**Environmental
Protection Agency**

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



1PD0000220080718

GREENE

FAIRBORN WATER RECLAMATION CENTER

LEIBFRITZ, SANDRA 2008/07/18



State of Ohio Environmental Protection Agency

Southwest District Office

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July 17, 2008

Mayor and Council
City of Fairborn
44 West Hebble Avenue
Fairborn, OH 45324

**RE: Fairborn WRC – NPDES No. 1PD00002*LD/OH0025062
Compliance Evaluation Inspection – Greene County**

Dear Mayor and Council:

On July 8, 2007, Sandra Leibfritz conducted an inspection at Fairborn's Water Reclamation Center located at 6920 Upper Valley Pike, Huber Heights, Ohio. Tony Branham and Frank Barosky were representing the facility. All areas that were evaluated were rated as satisfactory. An inspection report for the facility is enclosed.

Due to the completion of upgrades to the wastewater treatment plant and to operational changes, Fairborn's operation and maintenance manual needs to be updated. Revisions must include how Fairborn will comply with staffing requirements as per OAC 3745- 7-04, an organizational chart with position descriptions and a formal training program. No later than August 8, 2008, provide a timeline for updating the operations and maintenance manual.

Currently, the generator only supplies power to the main lift station. All critical components that are necessary for treatment, such as pumps and blowers, must receive power during power outages, mandatory power reductions, or uncontrolled emergency conditions. The objective of emergency operation is to prevent the discharge of raw or partially treated wastewater to any waters and to protect human health by preventing back-up of wastewater to basements, streets and other public or private property. Fairborn's current generator does not meet this criterion. Ohio EPA recommends that wastewater treatment plants be sized for full load. No later than August 8, 2008, provide a timeline for installing a generator to meet at least critical load.

If you should have any questions about the inspection, please call Ms. Leibfritz at (937) 285-6104 or me at (937) 285-6034.

Sincerely,

Martyn G. Burt
Environmental Supervisor
Division of Surface Water

cc: Tony Branham, WRC Technical Supervisor



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
1PD00002*LD	OH0025062	06/06/08	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
City of Fairborn WRC 6920 Upper Valley Pike Huber Heights, OH 45324	9:00 a.m.	December 1, 2007
	Exit Time	Permit Expiration Date
	12:20 p.m.	July 31, 2010
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Anthony Branham Water Reclamation Center, Technical Supervisor and Operator of Record tony.branham@ci.fairborn.oh.us	(937) 754-3075 Fax: (937) 8797024	
Name, Address and Title of Responsible Official	Phone Number	
Mayor & Council City of Fairborn 44 West Hebble Avenue Fairborn, OH 45324	(937) 754-3075	

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

Section D: Summary of Findings (Attach additional sheets if necessary)	
See attached report.	
Inspector	Reviewer
 Sandra D. Leibfritz Division of Surface Water Southwest District Office Date: 7/18/08	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office Date: 7/18/08

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) Correct name and location of receiving waters..... Y
- (c) Product(s) and production rates conform with permit application (Industries)..... N/A
- (d) Flows and loadings conform with NPDES permit..... Y
- (e) Treatment processes are as described in permit application... Y
- (f) New treatment process(es) added since last inspection..... N
- (g) Notification given to State of new, different or increased discharges..... N/A
- (h) All discharges are permitted..... Y
- (i) Number and location of discharge points are as described in permit..... Y

Comments/Status:

(d) The WWTP is designed to serve an average daily hydraulic flow of 6 MG. During the period from January 2007 through December 2007, the WWTP discharged an average daily flow of 4.5 MG.
 (e) On September 26, 2005, Ohio EPA issued Fairborn a PTI (No. 05-14110) for wastewater upgrades. The upgrades consists of the following: a new perforated screen replaced the east screen, two new grit pumps, a new cyclone, a classifier, two new blowers and new air headers were installed in the grit system, a new screening press and a new slide gates will be installed downstream of the screens. These upgrades are complete.
 (f) Fairborn is in the process of investigating future upgrades of the Northwest lift station, including upgrading the forcemain from the lift station to the plant, addition of a third clarifier, and upgrades to the uv disinfection system.

Section E: Permit Verification

- (a) Any significant violations since the last inspection..... N
- (b) Permittee is taking actions to resolve violations..... N/A
- (c) Permittee has a compliance schedule..... N
- (d) Compliance schedule contained in
- (e) Permittee is meeting compliance schedule..... N/A

Comments/Status:

(a) During the period from January 2007 through May 2008, Fairborn reported one violation of dissolved oxygen (August 2007). Noncompliance notification was given as per Part III, Item 12 of Fairborn's NPDES permit.
 (b) Fairborn replaced the SCADA's modem to address the violation; however, approximately 2 weeks ago the modem was hit by lightning. The modem is on order. In addition, Fairborn will be installing a modem surge protector.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

- (a) Standby power available.....generator or dual feed N
- (b) Adequate alarm system available for power or equipment failures Y
- (c) All treatment units in service other than backup units..... Y
- (d) Wastewater Treatment Works classification (OAC 3745-7)..... III
- (e) Operator of Record holds an unexpired license of class required by Permit - Class: IV..... Y
- (f) Copy of certificate of Operator Record displayed on-site..... Y
- (g) Minimum operator staffing requirements fulfilled (OAC 3745-7)... Y
- (h) Routine and preventative maintenance schedule/performed on time..... Y
- (i) Any major equipment breakdown since last inspection..... Y
- (j) Operation and maintenance manual provided and maintained.... N
- (k) Any plant bypasses since last inspection..... N
- (l) Regulatory agency notified of bypasses..... N/A
 Notified Inspector and/or Spill Hotline (1-800-282-9378)
- (m) Any hydraulic and/or organic overloads since last inspection..... N

Comments/Status:

The wet stream process consists of influent lift station with 2" manual bar racks, 2 screens plus a backup static screen, 2 grit systems, 4 oxidation ditches, 2 clarifiers and uv disinfection. Plant operations and biological balance are controlled by SCADA for flow meters, power, probes (temp., D.O., pH, TSS), ditch blowers, lift stations, return pumps, torque on clarifier's arms and blowers on grit system.

(a) The generator only powers the Main lift station. No other equipment is powered by the generator at the plant; however, Fairborn is planning to purchase a generator that is capable of carrying full load of the plant and all future anticipated loads. The generator is out for repairs. If the power goes out, the uv system is equipped to allow a generator tie-in. Also, SCADA monitors D.O. in the uv channel. If the D.O. drops below 5.5 mg/l, then a blower is put on-line.

(e) Anthony Branham is a Class IV operator. Frank Barosky, Kevin Krejny and Roger Rardain are Class III operators. Robert Smity, Mark Jamison, and Debra Clark are a Class I operators. Mr. Branham, Mr. Barosky, Mr. Krejny and Mr. Rardain are the Operators of Record.

(g) On April 9, 2008, the Director of Ohio EPA approved a 25 hour staffing reduction based on current staffing levels and automation or continuous monitoring. Fairborn uses a bound log book where operators sign in and sign out in pen along with their work hours.

(i) One of the shafts in the oxidation ditch (No. 4) is broken. The shaft is on order and will take approximately 4-6 weeks for delivery.

(j) Fairborn's O&M manual is in need of updating due to changes in the mode of operations and equipment.

Section G: Operation & Maintenance (con't)

Collection System:

- (a) Percent combined system: 0 %
- (b) Any collection system overflows since last inspection..... Y
(CSO and/or SSO)
- (c) Regulatory agency notified of overflows (SSOs)..... Y
- (d) CSO O&M plan provided and implemented..... N/A

- (e) CSOs monitored and reported in accordance with permit..... N/A
- (f) Portable pumps used to relieve system..... Y
- (g) Lift station alarms provided and maintained..... Y
- (h) Are lift stations equipped with permanent standby power
or equivalent..... Y
- (i) Is there an inflow/infiltration problem (separate sewer system),
or were there any major repairs to collection system since
last inspection..... Y
- (j) Any complaints received since last inspection of basement flooding Y
- (k) Are any portions of the sewer system at or near capacity..... N

Comments/Status:

Karen Hawkins, Utilities Superintendent, is responsible for the collection system. Ms. Hawkins has a Class II sewer collection license.

(b) There were 4 SSO events reported during January through December 2007.

(f) There is one portable pump that is used for the Chaplegate lift station. The remaining lift stations are equipped with backup power.

(g) There are six lift stations on Fairborn's collection system (Main, Northwest, Kauffman, Peppertree, Southeast and Chapelgate Estates). Kauffman lift station is slated for replacement due to age and condition of the station. All alarms are relayed to the SCADA system. All lift stations are equipped with two pumps. All alarms and pumps were reported as operational except one pump in the Southeast lift station is out for repair. The Southeast lift station will be upgraded to accommodate growth in the area.

(h) All lift stations are equipped with backup power except Chaplegate.

(i) Fairborn has an ongoing I/I program. Fairborn conducts televising and smoke testing of their sewers based on age and flow. Fairborn does point repairs or lining of sewers when I/I is identified. Fairborn is proposing to install an equalization basin for the backwash from their water treatment plant. Projects that have been investigated for I/I are Maplewood, Ironwood, South Interceptor. Future projects for I/I include Xenia Drive, Old Fairfield, downtown and Rona Hills.

(j) In 2007, there were 3 occurrences of basement flooding due debris in line. Fairborn submitted their Sanitary Sewer Overflow Annual Reports as required by Part II, Item U of their NPDES permit. The lines are on a regular maintenance schedule.

Section H: Sludge Management

- (a) Sludge management plan (SMP)
 Submitted date: _____ Approval #: _____ Not submitted N/A
- (b) Sludge management plan current..... N/A
- (c) Sludge adequately disposed..... Y
 (Method: **landfill**)
- (d) If sludge is incinerated, where is ash disposed of N/A
- (e) Is sludge disposal contracted..... N
 (Name:)
- (f) Has amount of sludge generated changed significantly since
 last inspection..... N
- (g) Adequate sludge storage provided at plant..... Y
- (h) Land application sites monitored and inspected per SMP..... N/A
- (i) Records kept in accordance with State and Federal law..... N/E
- (j) Any complaints received in last year regarding sludge..... N
- (k) Is sludge adequately processed (digestion, pathogen control)..... N/A

Comments/Status:

The solid stream process consists of wasting solids from the clarifier to aerobic digesters with mixers, then the belt press. Fairborn also has sludge thickening tanks; however, Fairborn has not use these units since 1992.

One of the digesters is off-line.

The belt filter press operates 4 days per week at 10 hours a day.

The belt filter press produces a 16 to 17% solids content in the cake. The sludge is then spread onto the concrete floor where it further dries to a solids content of 22-24%.

(a) Sludge requirements as per Chapter 3745-42 of the Ohio Administrative Code have been incorporated into Part II of Fairborn's NPDES permit.

(c) In 2007, Fairborn disposed of sludge at Stoney Hollow landfill.

(f) In 2006, Fairborn disposed of 674 dry tons of sludge in a landfill. In 2007, Fairborn disposed of 667 dry tons of sludge in a landfill.

(g) Fairborn has two areas to store sludge. The cover building with a concrete floor has 2-3 months storage and the concrete pad has approximately 12 months storage. The concrete pad drains to the head of the plant. Debris and other deposits from the jetvac are placed on the old sludge drying beds to dry. The underdrains return to the head of the plant.

(k) Fairborn has the capabilities of producing Class A or B sludge.

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary flow measuring device operated and maintained..... Y
 Type of device: Ultrasonic & Parshall flume Ultrasonic & Weir Weir
 Calculated from influent Other: **Mag Meter**
- (b) Calibration frequency adequate Y
 (Date of last calibration: **December 3, 2007**)
- (c) Secondary instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range
 of flows..... Y
- (e) Actual flow discharged is measured..... N
- (f) Flow measuring equipment inspection frequency
 Daily Weekly monthly other

Comments/Status:

(b) All flow meters are calibrated on a yearly basis by Rawdon Myers located in Milford, OH.
 (c) Information from the SCADA system is downloaded to a disc.
 (d) Flow meters on each of the lift stations have the range from 0 MGD to 10 MGD (total 20 MGD).
 (e) Flow is monitored at the Main lift station and the Northeast lift station. This data is sent to SCADA and reported on the eDMRs. An effluent meter is not used due to the influence and location of the river.
 (f) Flow is continuously monitored and recorded by the SCADA system. Flow is designated as a critical alarm that notifies the operator when low or high flow occurs.

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..... N/E
- (d) Sample collection procedures are adequate..... N/E
 - (i) Samples refrigerated during compositing..... Y
 - (ii) Proper preservation techniques used..... N/E
 - (iii) Containers and sample holding times prior to analysis conform with 40 CFR 136.3..... N/E
- (e) 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)..... N/E
- (f) Adequate records maintained of sampling date, time, location, etc.. Y

Comments/Status:

There are two analysts. Both have their Class IV wastewater analyst license. To maintain their licenses, both pursue CEU.

(a) The influent sample is collected after the grit system. The effluent sample is collected after uv disinfection.

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

Laboratory:

General

- (a) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
 - (b) If alternate analytical procedures are used, proper approval has been obtained..... N/A
 - (c) Analyses being performed more frequently than required by permit. N
 - (d) If (c) is yes, are results in permittee's self-monitoring report..... N/A
 - (e) Commercial laboratory used..... Y
- Parameters analyzed by commercial lab:

Lab name: Test America – TKN, heptachlor epoxide and metals including Hg Alloway - bioassays

Lab name: Fairborn WWTP – Temperature, TSS, NH₃, pH, DO, Fecals, oil & grease and CBOD₅, NO₂/NO₃, P

Quality Control/Quality Assurance

- (f) Quality assurance manual provided and maintained..... Y
 - (g) Satisfactory calibration and maintenance of instruments/equipment. Y
 - (h) Adequate records maintained..... Y
- (i) Results of latest USEPA quality assurance performance sampling program:
 Satisfactory Marginal Unsatisfactory
 Date:

Comments/Status:

(i) The DMRQA was conducted in August 31, 2007. All areas were reported as satisfactory. During the inspection, Fairborn was conducting testing for the 20008 DMRQA..

Section J: Effluent/Receiving Water Observations

Outfall Number	Oil sheen	Grease	Turbidity	Visible Foam	Visible Floating Solids	Color	Other
001	None	None	None	None	None	Clear	

Comments/Status:

The Mad River was greenish both upstream and downstream of Fairborn's outfall (1PD00002001). The effluent discharge to the Mad River was clear and free of odor.

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:

FINAL EFFLUENT VIOLATIONS – OUTFALL 001*

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
August 2007	Dissolved Oxygen	1D Conc	5.0	4.0	8/30/2007

* Violations noted are during the period from January 2007 through May 2008.

General Comments:

The existing Main lift station is rated at 5.5 MGD. Fairborn is proposing to replace and demolish the existing lift station. The new lift station is proposed to be rated at 11 MGD. There are 2" manual racks in the lift station. Debris is dried and placed in a dumpster with ultimate disposal at a landfill. There are 4 pumps in the lift station. Three pumps are rated at 2 MGD and one pump is rated at 1.5 MGD. All pumps and alarm system (SCADA) were reported as operational. Pumps are automatically alternated. The backup pump is switched weekly.

There are two screens; however, only one screen is required during low flows. The second screen is brought on-line when flows reach 9 MGD. In addition, there is a static screen which could be used as a backup. The teeth on screen No. 2 were replaced. Screenings are placed in a dumpster for ultimate disposal at a landfill.

There are two grit systems; however, only one system is used low normal flows. The wastewater in the grit tanks had a reddish color. This was due to the plant receiving backwash from Fairborn's water treatment plant. There is a bypass weir which diverts flows above 10 MD directly to the oxidation ditch.

The influent samples are obtained after the grit system. A new composite sampler (ISCO) was being installed.

Fairborn operates the oxidation ditches in BNR (biological nutrient removal) mode for both nitrogen and phosphorus removal. For nitrogen removal, Fairborn employs a two-step nitrification and denitrification process by creating anoxic and aerobic zones. For phosphorus removal, Fairborn employs a two-step process – anaerobic fermentation zone followed by an aerobic zone. The inner pass of the ditches are anaerobic zones. The secondary ditch is used to create an aerobic zone. Flows above 9 MGD are sent directly to this ditch via a "spiking channel." A percentage of return solids from the anoxic and anaerobic zones are returned to the head of the plant.

Fairborn uses an automatic multi point nutrient analyzer (P, NO₂, NO₃), ChemScan, to monitor and control nitrification and denitrification steps and phosphorus removal in the ditches. As process control, Fairborn uses ORP (oxidation reduction potential) to optimize system performance. Fairborn normally operates No. 1, 3 and 4 ditches during low flows. The MLSS was at 2705 mg/l and was medium brown in color. No. 2 is off line to replace the disc rotors. Discs are made of fiberglass composite that is subject to uv breakdown when exposed to sunlight.

In-line monitoring of suspended solids are analyzed on the RAS line. SCADA sends alarm to operator for low or high solids.

A return pump was replaced and a new WAS pump was installed.

No. 1 clarifier was on line. No. 2 clarifier is off line due to normal flows. The effluent overflowing the weir in the clarifier was clear with a small amount of pin floc. This was attributed to the broken shaft in the oxidation ditch; however, it does not impact compliance with the permit limits. Side wall depth of the clarifier is 15' 8." The clarifier is equipped with a rapid withdraw sludge collector that maintains the sludge blanket at 0 to 6" to prevent the release of ammonia or phosphorus back into the wastewater. The skimmer returns to the head of the plant. During the summer months, the clarifiers are alternated on a bimonthly basis in order to the clean algae from the weirs and perform any preventive maintenance that may be needed.

The uv disinfection system has the capabilities for generator tie-in. Four modules are in use. Channels are cleaned at the beginning of the disinfection season. Fencing was placed over the outfall to prevent fish from swimming into the uv channel and breaking the bulbs.

The effluent sample is collected after the uv channel.

Sump pumps for building footers are sent to the head of the plant.