



State of Ohio Environmental Protection Agency

Northwest District Office

347 North Dunbridge Rd.
Bowling Green, OH 43402-9398

TELE: (419) 352-8461 FAX: (419) 352-8468
www.epa.ohio.gov

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

Re: Defiance County
GM Powertrain
NPDES Permit

February 23, 2010

Mr. Tom Gallagher
GM Defiance Casting Operations
26427 State Route 281 East
P. O. Box 70
Defiance, Ohio 43512-0070

Dear Mr. Gallagher:

On February 11, 2010, an NPDES permit compliance inspection of GM's Defiance Powertrain facility was conducted by Dana Martin-Hayden. The inspection included a tour of the wastewater treatment plant and completion of an inspection checklist. Mr. Todd Rouse, Environmental Supervisor, and Mr. Eddie Pierce, Utilities Manager, were present and provided information on operations and maintenance at the plant.

During our visit, the only major treatment units in operation were the sand filters and water softening units for the recirculation water. As a result, there was no discharge to the Maumee River from the final effluent outfall 001.

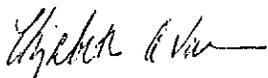
Although general housekeeping was good, GM should invest in sandblasting and painting the building structure and treatment structures. There is visual evidence of excessive corrosion on the influent chamber box, the pH adjustment tank and cat walk, the sludge hopper, and the building's structural frame and piping. One of the sampling pipes drained to a corroded metal sink that should be replaced. Although not utilized, the Maumee River Raw Water Influent Pump Station was in very bad shape for corrosion and appeared to have structural integrity issues associated with the roof. The very large capital investment GM has in this WWTP should be protected as part of the preventive maintenance program.

The plant appeared to be operating satisfactorily. A copy of our completed inspection report is enclosed for your records.

Mr. Tom Gallagher
February 23, 2010
Page 2

If you have any questions please call Dana Martin-Hayden at (419) 373-3067.

Yours truly,



Elizabeth A. Wick, P.E.
Unit Supervisor
Division of Surface Water

Enclosure

pc: ~~---~~ DSW NWDO File w/enclosure

Permit #: 2IN00004
 NPDES #: OH0002666



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
2IN00004	OH0002666	2/11/2010	C	S	2

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
GM Powertrain Division 26427 State Route 281 E PO Box 70 Defiance, OH 43512	10:42	6/30/2009
	Exit Time	Permit Expiration Date
	3:44	10/31/2013
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Todd Rouse, Environmental Supervisor Eddie Pierce, Utilities Manager Michael Hall, WWTP Operator Denny Erford, WWTP Operator	419-784-7403	
Name, Address and Title of Responsible Official	Phone Number	
Mr. Tom Gallaher, Regional Manager GM Defiance Casting Operations 26427 State Route 281 East P.O. Box 70 Defiance, Oh 43512-0070	419-784-7410	

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	S	Laboratory	N	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)			
<p>A pH violation for station 004 was due to a blocked pipe that backed up flow into the ditch. GM has added an annual inspection of this storm water discharge channel to their preventive maintenance program. Besides this event, GM has been able to meet the new pH limit for this outfall.</p> <p>Although general housekeeping was good, GM should invest in sandblasting and painting the building structure and treatment structures. There is visual evidence of excessive corrosion on the influent chamber box, the pH adjustment tank and cat walk, and the sludge hopper, the building's structural frame and piping. One of the sampling locations drained to a corroded metal sink should be replaced. Although not utilized, the Maumee River raw water influent pump station was in very bad shape for corrosion and appeared to have structural integrity issues associated with the roof. The very large capital investment GM has in this WWTP should be protected by the preventive maintenance program.</p>			
Inspector		Reviewer	
 Dana Martin-Hayden Division of Surface Water Northwest District Office		 Elizabeth A. Wick Water Quality Engineer II Division of Surface Water Northwest District Office	
Date		Date	
2/22/10		2/22/10	

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 N
 - (b) Correct name and location of receiving waters..... Y
 - (c) Do Categorical Standards apply?...If yes, list applicable standards.. Y
- Federal Effluent Guidelines Limitations in 40 CFR 464
 "Metal Molding and Casting" Industry Category
- (d) Product(s) and production rates conform with permit application (Industries)..... Y
 - (e) Flows and loadings conform with NPDES permit..... Y
 - (f) Treatment processes are as described in permit application... Y
 - (g) All discharges are permitted..... Y
 - (h) Number and location of discharge points are as described in permit..... N
 - (i) Storm water discharges properly permitted..... Y

Comments/Status:

a & b) in next minor modification need to change name to GM Defiance Casting Operations. Regional plants are the operators of the WWTP and therefore the name on the permit should reflect this. They are owned by General Motors LLC.

f) new soy product will be used "Soy Response" instead of "Zep Big Orange" for dissolving Styrofoam.

h) 002 is being monitored correctly for concentrations and flow, however, it does have two separate latitudes and longitudes for discharge points depending on the height of water in the secondary basin during an emergency discharge situation.

Section F: Compliance

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

Comments/Status:

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.....

West side of building they have a generator. They have a fuel tank that will last for 4 hours.

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

Once a month the maintenance crew does a test under the PM schedule.

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

All systems, including pumps, valves, meters and tank water levels are tied into the central computer control.

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

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

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

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

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

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

Comments/Status:

c) Only the sand filters and softners are on line to send recirculation process water back to facilities heat exchangers. This treatment is done to prevent scaling on thermal unit applications.

e) No major equipment breakdowns. They are replacing the valves on the ionic and softening system as part of their PM.

h) They have not had any issues but they keep a close watch on the flow and the zinc concentrations to make sure they are meeting the new lower Zinc limit. The plant has increased the amount of Zinc used and that has also created the increased process monitoring for this parameter.

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)

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 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"/>

(a) Has amount of sludge generated changed significantly since the

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"/>

- last inspection..... N
- (b) How much sludge storage is provided at the plant.....
 2,000 lbs roll off container is used for the sludge from the filter press
- (c) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y
- (d) Any complaints received in last year regarding sludge..... N
- (e) 5/8" screen at headworks for facilities that land apply sludge..... N/A
- (f) Are sludge application sites inspected to verify compliance with NPDES permit..... N/A

Comments/Status:

Historically, the production of this facility dramatically reduced in October 2008.

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices operated and maintained..... Y
Type of device (e.g. weir with ultrasonic level sensor):

Calibrate discharge meter monthly and routinely done during start up procedures. They do visual checks daily.

- (b) Calibration frequency adequate Y
(Date of last calibration:)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... Y
- (e) Actual flow discharged is measured..... Y
- (f) Flow measuring equipment inspection frequency
Daily Weekly monthly other

Comments/Status:

The new ultrasonic flow meter for the station 001, final effluent, will be calibrated annually by a third party.
--

Section II: 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 (cont)

Laboratory:

General

(a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... Y

(b) Do SOP's include the following if applicable:

- 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

(d) If alternate analytical procedures are used, proper approval has been obtained..... N/A

(e) Analyses being performed more frequently than required by permit. Y

(f) If (e) is yes, are results in permittee's self-monitoring report..... N

(g) Satisfactory calibration and maintenance of instruments/equipment. Y
(see score from GLC page)

(h) Commercial laboratory used..... Y

Parameters analyzed by commercial lab: All parameters are collected according to permit frequency and sent to Test America, a commercial lab. Toxicity is outsourced to Global Environmental Consulting.

Lab name: Test America, Global Environmental Consulting, LLC (toxicity testing)

Discharge Monitoring Report Quality Assurance (DMRQA)

(a) Participation in latest USEPA quality assurance performance sampling..... Y
Date: Fall of 2009

(b) Were any parameters "Unsatisfactory"..... Y

(c) Reasons for "Unsatisfactory" parameters.....

TKN – GM does not monitor for this parameter, however, GM submitted a letter to OEPA, on 12/2/2009, providing the laboratory's corrective action.

Comments/Status:

f) GM does their own laboratory analysis on site for process control, however, they do not use US EPA approved laboratory methods nor do they sample at the exact same locations specified by their NPDES permit.

Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: No discharge occurring from this outfall 001.

Receiving Stream: The Maumee River

Receiving Stream Description: 001 discharges at a structure at the Maumee River that also discharges treated wastewater from the NPA ground water treatment facility. As a result the discharge location was not frozen, although the rest of the Maumee River did have a frozen layer on the surface.

Comments/Status:

Section K: Multimedia Observations

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... Y
- (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:

Permit # : 2IN00004
NPDES # : OH0002666

Although general housekeeping was good, GM should invest in sandblasting and painting the building structure and treatment structures. There is visual evidence of excessive corrosion on the influent chamber box, the pH adjustment tank and cat walk, the sludge hopper, and the building's structural frame and piping. One of the sampling locations drained to a corroded metal sink will need to be replaced. Although not utilized, the Maumee River raw water influent pump station was in very bad shape for corrosion and appeared to have structural integrity issues associated with the roof. The very large capital investment GM has in this WWTP should be protected as part of the preventive maintenance program.

F. GUIDE - VISUAL OBSERVATION - UNIT PROCESS

Form Approved
OMB No. 158-R0035

RATING CODES: S = Satisfactory; U = Unsatisfactory; M = Marginal; IN = In Operation; OUT = Out of Operation

CONDITION OR APPEARANCE		RATING	COMMENTS
General	Grounds	S	
	Buildings	S	
	Potable Water Supply Protection	S	
	Safety Features	S	
	Bypasses	OUT	
	Stormwater Overflows	—	
	Alternate Power Source	S	
Preliminary	Maintenance of Collection Systems	S	
	Pump Station	IN	12 Pumps feed water secondary to reservoir, 4 are always on
	Ventilation	--	
	Bar Screen	IN	
	Disposal of Screenings	—	
	Comminutor	--	
	Grit Chamber	—	
	Disposal of Grit	--	
	Influent Tank	IN	Rusty and peeling on the inside of the tank – needs reconditioning like the sand filters
Primary	Settling Ponds	IN	2 primary and 1 secondary (see secondary basin) that feeds into the reservoir
	Ditch East/West	IN	phosphoric acid & polymer added to east ditch prior to confluence with the west ditch
	Secondary Basin	IN	Settling for storm water. 30 MGD of water is recirculated from the secondary basin and is pumped up to the reservoir that feeds into the WW treatment where it is softened.
			Made up 10% Cupulla cooling water – the other 90% cupulla water is softened & recycled
Sludge Disposal	Digesters		
	Temperature and pH		
	Gas Production		
	Heating Equipment		
	Sludge Pumps		
	Drying Beds		
	Vacuum Filter		
	Disposal of Sludge	S	Secondary basin, E & W ditches & filter press sludge is mixed w/ core butts, (see below)
	Filter Press	OUT	Presses P salt from the WW, landfilled at the residual waste LF on site.
Regeneration Holding Tank	OUT	39,800gal tank where the triple phosphate fertilizer is mixed in	
Other	Flow Meter and Recorder	IN	Calibrate yearly and use manual check daily
	Records	S	
	Lab Controls	S	
	Ion Exchanger	OUT	4 / 4, uses HCL and Caustic to regenerate medium
	Water Softner	S	2 / 4, water treated in the softener only for recycled H2O in the plant -- 90% cupulla WW
	Carbon Tank	OUT	Assists in the removal of Chlorine – Spent Carbon handled by 3 trains and 2 tanks per Train – 6 units (oly on line if high phenol test done weekly or on line if the C12 tests >0.35, C12 test done daily)
Secondary-Tertiary List items as	Caustic Storage Tank	IN	17,000 gallons – containment provided
	Brine Storage Tank	IN	15,000 gallons – containment provided
	Phosphoric Acid Tank	IN	6,000 gallons – containment provided
	HCL Tank	IN	6,000 gallons – containment provided
	Cl generator	OUT	1 Unit for algae growth in the internal recycled water system – minor repair occurring
Disinfection	Effluent	OUT	No Discharge – only recirculation of softened and sand filtered process water
	Disinfection System		
	Effective Dosage		
	Contact Time		
	Contact Tank		
	Dechlorination	OUT	6,000 gallon tank of sodium hypochlorite in containment – recycled water system
pH adjustment tank	OUT	As buffer no acid added – needs coating (rust showing on the walk)	