Third Quarter 2016 Progress Report 62

GM CET – Bedford Facility
105 GM Drive
Bedford, Indiana
EPA ID# IND006036099
AOC Docket No. RCRA 05 2014 0011

GHD | 651 Colby Drive Waterloo Ontario N2V 1C2 Canada

013968 | Report No 402 | October 15 2016

Global Environmental
Compliance & Sustainability

October 15, 2016 Reference No. 013968

Mr. Peter Ramanauskas
Project Manager for IND 0060306099
Waste, Pesticide and Toxins Division
U.S. EPA Region 5
77 West Jackson Blvd. (DW-8J)
Chicago, IL 60604-3590

Dear Mr. Ramanauskas:

Re: RCRA Corrective Action Administrative Order on Consent (AOC)
Progress Report 62, Third Quarter 2016
GM CET – Bedford Facility, IND 006036099, Docket No. RCRA 05-2014-0011
Bedford, Indiana

Please find enclosed the Progress Report 62 (Third Quarter 2016) for the Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) project at the GM Castings, Engines, and Transmissions (CET; formerly Powertrain) Bedford Facility (Facility) at 105 GM Drive in Bedford, Indiana, and select surrounding properties (Site). This report is being submitted in accordance with the Administrative Order on Consent, effective August 4, 2014 (United States Environmental Protection Agency (U.S. EPA) Docket No. RCRA 05-2014-011).

The next RCRA quarterly progress report covering the Fourth Quarter of 2016 will be submitted on or before January 15, 2017.

Should you have any questions regarding this document, please do not hesitate to contact me at (313) 510-4328.

Yours truly,

General Motors LLC

Cheryl R. Hiatt
Project Manager

PG/lc/164
Encl.

c.c.: See Attached Distribution List

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GM Bedford Distribution List

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1. Introduction

This Progress Report is submitted by General Motors LLC (GM) in accordance with the GM Bedford Castings, Engines, Transmissions (CET) Facility Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent (AOC – United States Environmental Protection Agency [U.S. EPA] Docket No. RCRA 05-2014-0011), executed on August 4, 2014. This report covers the period of the third calendar quarter of 2016 for the RCRA Corrective Action (CA) Project at the GM CET (formerly Powertrain) – Bedford Facility (Facility) and select surrounding properties (Site), Bedford, Indiana.

The next RCRA progress report covering the fourth quarter of 2016 will be submitted on or before January 15, 2017.

2. List of Completed Activities

The following activities took place and the following documents were prepared and distributed during this quarter:

- Results for samples collected from Spring 018 during the quarter are presented in Table 2.1. Sample results for the monthly sampling were previously emailed to U.S. EPA and Indiana Department of Environmental Management (IDEM) as they became available. As of the end of September 2016 sampling, the 12-month rolling average concentration of polychlorinated biphenyls (PCBs) in the Spring 018 discharge is 0.13 micrograms per liter (μg/L). Regular monthly sampling was conducted on July 13, August 11, and September 14. An additional sample was collected September 19 after receiving results of high concentrations for PCBs following the September 14 sample. An opportunistic sample was collected on July 6, 2016, following a rainfall event of greater than 1 inch in 24-hours. The regular samples collected on July 13, and August 11, in addition to the July opportunistic sample were non-detect for PCBs. The regular sample collected on September 14, 2016 and resulted in detectable concentrations of 0.34 μg/L and 0.32 μg/L for PCBs (analyzed by TestAmerica). A third bottle collected on September 14, 2016, and submitted to Pace Analytical (formerly TriMatrix) had a detectable result of 0.34 μg/L. Confirmation samples were collected on September 19 which were non-detect (TestAmerica) and 0.41 μg/L PCBs (Pace). Due to the contradictory results of the September 19 sample, an additional confirmatory sample was collected on September 27 and analyzed at Test America with a result of non-detect for PCBs.
- The 300 gallons per minute (gpm) design capacity (Site Source Control [SSC]) and new groundwater (1,000 gpm design capacity, the new groundwater treatment plant) water treatment plants (WTPs) collected and treated approximately 6,713,000 gallons of water this past quarter. An estimated 0.19 pounds of PCBs were removed during the third quarter of 2016 through collection and treatment of the groundwater and an estimated 0.50 pounds of PCBs in the 12 months inclusive of September 2016. A summary of the volumes and sample results used for this calculation is provided in Table 2.2.

- The revised Additional Soil Investigation for Unsampled Areas Work Plan was approved by U.S. EPA on March 29, 2016.
  - The finalized work plan was submitted on April 1, 2016.
  - Sampling activities under this plan began July 11, 2016.
- GHD submitted the revision 1 Post Closure Plan, and Vault Certification based on the U.S. EPA approved responses to previous comments on August 25, 2016.
  - GHD submitted the East Plant Area TSCA Vault Annual Report for the 2015 calendar year on July 15, 2016.
  - GHD responded to the comments from U.S. EPA regarding the 2014 Vault Report on August 5, 2016.
- The third quarter 2016 EI CA750 monitoring of static groundwater levels was completed during the week of August 8, 2016.
  - The validated results for the first half 2016 semi-annual groundwater quality sampling completed during the week of April 27, 2016 were reported and submitted September 13, 2016.
- The Pilot Perimeter Groundwater Collection Trench Study (Pilot Trench) work plan was submitted to the U.S. EPA and IDEM on December 2, 2014.
  - SES continued operation of the temporary construction WTP.
    i) Batch testing of the treated effluent water from the SES temporary WTP was initiated on November 2015. Table 2.3 presents a summary of the sample results from the batch testing, including effluent results for the third quarter.
    ii) In July 2016, the temporary WTP plant was switched over from the Pilot Trench water to a standby mode for treating water in the Stormwater Pond to maintain water levels during the dredging. The temporary WTP is currently operational and treating water on an as-needed basis.
  - GM and GHD are currently developing a pilot test interim groundwater monitoring program ("the Pilot Trench") study to collect operational data and monitor the impact of the pilot trench to groundwater. The pilot test interim groundwater monitoring plan is set to be submitted during the fourth quarter of 2016.
- The new GWTP is treating all groundwater from the Pilot Trench and sumps and wet wells.
- The Area of Interest (AOI) 8 Groundwater Source Collection System Interim Measure was submitted to the U.S. EPA and IDEM on December 31, 2014.
  - Approval of the AOI 8 IM Work Plan with additional U.S. EPA Comments was received on July 1, 2015.
  - GHD is currently working on the design and finalizing the Work Plan to be completed within the fourth quarter 2016.
- Formal monitoring of the East Plant, West Plant and Vault cover systems for the Third Quarter was completed on September 30, 2016.

- The Parcel 400 Sampling Plan (covering Parcels 400, 430, and 431) was approved with modifications by the U.S. EPA.
  - The plan is anticipated to be reviewed by the property owners and U.S. EPA in the fourth quarter of 2016.
- The 30% Design Report Stormwater Pond Sediment Remediation; AOI 10 Interim Measure was submitted to U.S. EPA and IDEM on July 4, 2016.
  - GHD received comments from the U.S. EPA regarding the 30% Design Report on July 12, 2016. GHD responded to the comments on July 19, 2016.
  - Mobilization was completed mid-July and dredging began during the third week of August.
  - As part of the transition for the SES temporary WTP, additional piping was installed, a second MGT was added to increase capacity of the plant. The piping will be used to transfer water from the upstream Facility sources while completing dry dredging at the base of the pond.
  - Wet dredging will be completed in October 2016.
- The next Public meeting to provide an update on the project and address questions and concerns from local residents is tentatively scheduled for December on a date to be determined.
- Conference calls were held with U.S. EPA and IDEM on July 14 and 29, August 18 and 30, and September 15, 2016, to discuss items related to the project.
- With the resumption of daily construction activities related to the construction of a new groundwater treatment plant and construction of the Pilot Trench, on-Site construction meetings for the reporting period have been held informally daily and formally as needed. Formal construction meetings during this quarter were held on July 6, 13, 20, and 27, August 3, 10, 17, 24, and 31, and September 14, 21, and 28.
- The RCRA/CERCLA Quarterly Progress Report #61, covering the second quarter of 2016, was submitted to the U.S. EPA and IDEM on July 15, 2016.

3. Summaries of all Problems and Planned Resolutions

- Additional concrete sealing may be completed for a swallet identified, upgradient of Spring 018, in what is known as Pool 2. It is thought that a further reduction in surface water infiltration to the epikarst supplying Spring 018 may provide further stabilization of the PCB detections at the spring. Monthly monitoring continues.
- The 2nd Quarter 2016 Progress Report discussed an issue with the pumps in the Leachate Collection System (LCS) sump. In summary, the pumps in the LCS failed and the riser pipe had become sufficiently corroded to prevent direct replacement pumps from working. A temporary pump was purchased from a local hardware store and left in place to allow pumping as needed based on manual measurements.

It was proposed to use the temporary pump as the new permanent pumping solution (tying it into the automated systems), however, at the end of September an issue was identified where this new LCS pump was unable to pump leachate to the new groundwater treatment plant. The pump was unable to clear water from the LCS although the operator could hear the pump running.

The temporary pump has enough pumping pressure (head) to pump the LCS water to the equalization (EQ) tank at the Site Source Control (SSC) WTP, but has insufficient head to pump water further to the EQ tank of the newer GWTP which is up hill again from the SSC WTP. In the interim the leachate in the LCS was pumped to the EQ tank at the SSC WTP to maintain water level at the LCS. At this time GHD is examining the system to calculate the total pumping head required to reach the new GWTP from the LCS (i.e., accounting for line losses) to find a suitable pump replacement. Time between pumping periods in the LCS based on the water levels in the sump has been approximately every 3 months.

4. Summaries of all Changes Made in the Corrective Action (CA) During the Reporting Period

There were no changes made in the CA during the reporting period.

5. Community Relations

The telephone number for public contact is 812-277-8956 (Katie Kamm, GHD, formerly Conestoga-Rovers & Associates [CRA]). Individual meetings can be arranged to discuss project progress with residents as requested.

The next public meeting is tentatively planned to be held in early December on a date yet to be determined. The next meeting will combine the CLP and public meeting into one evening meeting for all to attend. Presentations for past meetings are posted on the GM website at: www.bedfordpowertraincorrectiveaction.com

The document repository continues to be located at the Bedford Public Library, with relevant project related documents available on compact disc (CD) in PDF format. Information will be updated periodically, as new documents become available. All data located in the Library repository can also be found on the aforementioned website.

6. Changes in Personnel During the Reporting Period

GHD oversight and SES personnel for on-going maintenance operations (e.g., stormwater and SSC water treatment, wet wells, Vault sumps etc.) and construction (e.g., Pilot Trench, GWTP) remain unchanged. On-Site staffing levels are expected to remain the same as construction work on the Stormwater Pond and GWTP operation commences and final programming is completed.

7. Projected Work for the Next Reporting Period

Work anticipated for the next reporting period includes:

- Completing and submitting the Stormwater Pond sediment removal design (100%) and completing sediment removal and liner construction in the Stormwater Pond (Area of Interest [AOI] 10).
- Completing repairs to the LCS sump system.
- Completing outstanding responses to comments on documentation and/or finalize reports for the following:
  - AOI 8 Groundwater Source Collection System IM and Design
- Completion of the Pilot Trench Monitoring Plan and Construction Certification Report.
- Continuing monitoring Spring 018 on a monthly basis and collection of an "opportunistic" sample if weather conditions dictate (a rainfall event of greater than 1 inch in 24-hours).
- Submission of the CFR 761.61(c) request for disposal for the off-Site fill properties west of the Facility (Parcels 400, 430, and 431)
- Finalizing the proposed CERCLA Administrative Order on Consent for Removal Action.

8. Copies of Daily Reports, Inspection Reports, Laboratory/Monitoring Data

Table 2.1 presents the quarterly results from Spring 018 sampling. Table 2.2 presents the estimated PCB mass removal for the SSC systems for the past 12 months. Table 2.3 presents the quarterly results from the batch testing of treated effluent water from the SES temporary WTP.

Appendix A includes the field monitoring forms for the cover system inspections and a photographic log:

1. Weeds or clover growth was noted at most Transects in the East Plant Area and the West Plant Area, which is also typically accompanied by some bare patches.
2. Small animal burrow holes, likely attributed to moles are present over parts of the East Plant cover system. GHD contacted the liner companies and the small animals do not burrow deep enough to damage the liner and so the vegetation will continue to be monitored, however, there is no immediate risk to the Cover.
3. There is also evidence of larger burrowing animals, which is believed to be attributed to woodchucks, near EV6 during the fourth quarter 2015 inspection. Indiana Department of Natural Resources (IDNR) has been consulted on identifying, and subsequently live trapping and relocating the animal(s), if necessary. Traps were placed this spring and summer during the third quarter and checked daily while deployed with no success. It is thought the animals may have moved on. Soil and vegetation repairs will be made as necessary.

4. Light erosion was identified again along EV4, EV5, and in ES6. These areas will be monitored and re-seeded again in the third or fourth quarter during the less dry season to promote new growth.

5. There are some erosion ruts along the east side of GM Drive, outside the cover system area adjacent to power poles. This does not appear to be due to any on-Site RCRA activities, but could have an impact on the liner system in the ditch. Work is still to be conducted on power poles in this area by the utility company. Repairs will be addressed after the power pole work is completed.

6. Minor cracks had previously formed along some of the seams in the asphalt cover system and repairs to fire hydrants in the West Plant area had caused some disturbances to the cover there in earlier quarters. The cracks did not extend the full depth of the asphalt thickness. SES repaired the asphalt in the East and West Plant Areas in July 2016.

Additional packages of analytical data have been, and will continue to be submitted to U.S. EPA as the validated data becomes available.

Table 2.1

Spring 018 Sampling Results - July/August/September 2016
GM CET Bedford Facility
Bedford, Indiana

Sample Location:		Spring 018C	Spring 018C	Spring 018C	Spring 018C	Spring 018C	Spring 018C	Spring 018C	Spring 018C
Sample ID:		SW-015-070616-MC-40445	SW-015-071316-GS-40453	SW-015-081116-GS-40455	SW-015-091416-MC-40501[1]	SW-015-091416-MC-40502[1]	SW-015-091916-MC-40506[1]	SW-015-091916-MC-40507[1]	SW-015-092716-MC-40524[1]
Sample Date:		7/6/2016	7/13/2016	8/11/2016	9/14/2016	9/14/2016	9/19/2016	9/19/2016	9/27/2016
Laboratory:		TestAmerica	TestAmerica	TestAmerica	TestAmerica	Pace	TestAmerica	Pace	TestAmerica
Parameters	**Units**								
PCBs									
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U Dup 0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U Dup 0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U Dup 0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.19 U	0.34 Dup 0.32	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U Dup 0.19 U	0.34	0.19 U	0.40	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U Dup 0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U Dup 0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	0.34 Dup 0.32	0.34	ND	0.40	ND
Wet									
Total suspended solids (TSS)	µg/L	6200	6900	25000	18000	-	27000	-	7000

Notes:

1 Sample result is not validated.
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.
ND Non-Detect for total PCBs.
12-month rolling average (October 2015 – September 2016) is 0.13 µg/L PCBs.

Table 2.2

300 gpm Design Capacity Water Treatment System PCB Mass Removal Estimate
GM Bedford CET Facility
Bedford, Indiana

	300 gpm Design Capacity System Treated Volume (gallon)	Groundwater Treatment Plant (GWTP) Treated Volume (gallon)	PCB Influent Concentration (µg/L)	Mass PCB Treated (pound)
October 2015	347,000	-	5.6	0.016
November 2015	1,196,000	-	4.8	0.048
December 2015	1,545,000	-	ND (0.19U)[1]	0.001
January 2016	1,840,000	-	1.5 p / 1.2 p	0.021
February 2016	1,296,000	-	5	0.054
March 2016[2]	2,422,000	-	3.8	0.077
April 2016	2,336,000	-	1.1	0.021
May 2016	1,947,000	-	1.4	0.023
June 2016	608,000	-	9.3	0.047
July 2016	410,000	1,950,000	3.3	0.065
August 2016	-	3,223,000	3.3	0.089
September 2016	-	1,130,000	4.3	0.041

Total Estimated Volume of Water Treated, Third Quarter 2016 (gallons)	6,713,000
Total Estimated Mass of PCB Treated, Third Quarter 2016 (pounds)	0.19
Total Estimated Mass of PCB Treated, Since July 2015 (pounds)	0.50

Notes:

1 Used half of the detection limit value at the associated limit to calculate the mass PCB treated.
2 Influent not sampled March 2016, so used average of previous 12 months inclusive of March 2015.
P-TestAmerica: The %RPD between the primary and confirmation column/detector is >40%.
The lower value has been reported.
The 300 gpm water treatment system did not run after July 11, when groundwater sources were shifted to the new GWTP.

Table 2.3

SES WWTP Batch Sampling Results – July/August/September 2016
GM CET Bedford Facility
Bedford, Indiana

Area		**P216**	**P216**	**P216**	**P216**	**P216**	**P216**	**P216**
Sample Location:		**SES WWTP Tag 1**	**SES WWTP Tag 1**	**SES WWTP Tag 1**	**SES WWTP Tag 1**	**SES WWTP Tag 1**	**SES WWTP Tag 1**	**SES WWTP Tag 3**
Sample ID:		**WW-216-071116-PB-40452**	**WW-216-082416-PB-40465**	**WW-216-083116-PB-40478**	**WW-216-090116-PB-40484**	**WW-216-090216-PB-40489**	**WW-216-091216-PB-40497**	**WW-216-071116-PB-40450**
Sample Date:		**7/11/2016**	**8/24/2016**	**8/31/2016**	**9/1/2016**	**9/2/2016**	**9/12/2016**	**7/11/2016**
		General Motors LLC - System Influent From Modutank	**General Motors LLC - System Influent From Modutank**	**General Motors LLC - System Influent From Modutank**	**General Motors LLC - System Influent From Modutank**	**General Motors LLC - System Influent From Modutank**	**General Motors LLC - System Influent From Modutank**	**General Motors LLC - Sand Filter #1 Effluent**
Parameters	**Units**							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.26	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND	ND	0.26	ND

Note:

U Not detected at the associated reporting limit.

Table 2.3

SES WWTP Batch Sampling Results – July/August/September 2016
GM CET Bedford Facility
Bedford, Indiana

Area		**P216**	**P216**	**P216**	**P216**	**P216**	**P216**	**P216**
Sample Location:		**SES WWTP Tag 3**	**SES WWTP Tag 3**	**SES WWTP Tag 3**	**SES WWTP Tag 3**	**SES WWTP Tag 3**	**SES WWTP Tag 3**	**SES WWTP Tag 5**
Sample ID:		**WW-216-071116-PB-40451**	**WW-216-082416-PB-40464**	**WW-216-083116-PB-40477**	**WW-216-090116-PB-40483**	**WW-216-090216-PB-40488**	**WW-216-091216-PB-40496**	**WW-216-071116-PB-40449**
Sample Date:		**7/11/2016**	**8/24/2016**	**8/31/2016**	**9/1/2016**	**9/2/2016**	**9/12/2016**	**7/11/2016**
		Duplicate						
		General Motors LLC - Sand Filter #1 Effluent	**General Motors LLC - Sand Filter #1 Effluent**	**General Motors LLC - Sand Filter #1 Effluent**	**General Motors LLC - Sand Filter #1 Effluent**	**General Motors LLC - Sand Filter #1 Effluent**	**General Motors LLC - Sand Filter #1 Effluent**	**General Motors LLC - Carbon Unit #1 Effluent**
Parameters	**Units**							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.25	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND	ND	0.25	ND

Note:

U Not detected at the associate reporting limit.

Table 2.3

SES WWTP Batch Sampling Results – July/August/September 2016
GM CET Bedford Facility
Bedford, Indiana

Area		**P216**	**P216**	**P216**	**P216**	**P216**	**P216**	**P216**
Sample Location:		**SES WWTP Tag 5**	**SES WWTP Tag 5**	**SES WWTP Tag 5**	**SES WWTP Tag 5**	**SES WWTP Tag 5**	**SES WWTP Tag 6**	**SES WWTP Tag 6**
Sample ID:		**WW-216-082416-PB-40463**	**WW-216-083116-PB-40476**	**WW-216-090116-PB-40482**	**WW-216-090216-PB-40487**	**WW-216-091216-PB-40495**	**WW-216-071116-PB-40448**	**WW-216-082416-PB-40462**
Sample Date:		**8/24/2016**	**8/31/2016**	**9/1/2016**	**9/2/2016**	**9/12/2016**	**7/11/2016**	**8/24/2016**
		General Motors LLC - Carbon Unit #1 Effluent	**General Motors LLC - Carbon Unit #1 Effluent**	**General Motors LLC - Carbon Unit #1 Effluent**	**General Motors LLC - Carbon Unit #1 Effluent**	**General Motors LLC - Carbon Unit #1 Effluent**	**General Motors LLC - Carbon Unit #2 Effluent**	**General Motors LLC - Carbon Unit #2 Effluent**
Parameters	**Units**							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.20 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND	ND	ND	ND

Note:

U Not detected at the associate reporting limit.

Table 2.3

SES WWTP Batch Sampling Results – July/August/September 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 6	SES WWTP Tag 6	SES WWTP Tag 6	SES WWTP Tag 6	SES WWTP Tag 6	SES WWTP Tag 8	SES WWTP Tag 8
Sample ID:		WW-216-083116-PB-40475	WW-216-090116-PB-40480	WW-216-090116-PB-40481	WW-216-090216-PB-40486	WW-216-091216-PB-40494	WW-216-071116-PB-40447	WW-216-082416-PB-40460
Sample Date:		8/31/2016	9/1/2016	9/1/2016 Duplicate	9/2/2016	9/12/2016	7/11/2016	8/24/2016
		General Motors LLC - Carbon Unit #2 Effluent	General Motors LLC - Carbon Unit #2 Effluent	General Motors LLC - Carbon Unit #2 Effluent	General Motors LLC - Carbon Unit #2 Effluent	General Motors LLC - Carbon Unit #2 Effluent	General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter
Parameters	**Units**							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.19 U	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.20 U	0.19 U	0.20 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND	ND	ND	ND

Note:

U Not detected at the associate reporting limit.

Table 2.3

SES WWTP Batch Sampling Results – July/August/September 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 8	SES WWTP Tag 8	SES WWTP Tag 8	SES WWTP Tag 8	SES WWTP Tag 8
Sample ID:		WW-216-082416-PB-40461	WW-216-083116-PB-40474	WW-216-090116-PB-40479	WW-216-090216-PB-40485	WW-216-091216-PB-40493
Sample Date:		8/24/2016 Duplicate	8/31/2016	9/1/2016	9/2/2016	9/12/2016
		General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter
Parameters	**Units**					
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND	ND

Note:

U Not detected at the associate reporting limit.

Appendices

Appendix A
Third Quarter 2016 Cover System Inspection: Field Logs, Transect Figures, and Photograph Log

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

Date of Inspection: 9/30/2016 sunny

Inspector: mike curtis 67 degrees F

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
VEGETATED SOIL COVER SYSTEM						
	Transect EV1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
VEGETATED SOIL COVER SYSTEM (CONTINUED)						
	Transect EV3	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV4	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION	X		slight erosion	
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION	X		slight erosion	
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS				
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
VEGETATED SOIL COVER SYSTEM (CONTINUED)						
	Transect EV6	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		groundhog hole	
		- ROOTING OF TREES				
	Transect EV7	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV8	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
VEGETATED SOIL COVER SYSTEM (CONTINUED)						
	Transect EV9	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect WV1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS				
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED		DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
HARD SURFACE COVER SYSTEMS							
	Transect EA1	- QUALITY OF ASPHALT COVER					
		- PRESENCE OF CRACKING OR DISCOLORATION	X		fill cracks,sealcoat		
	Transect EA2	- QUALITY OF ASPHALT COVER					
		- PRESENCE OF CRACKING OR DISCOLORATION	X		fill cracks,sealcoat		
	Transect WA1	- QUALITY OF ASPHALT COVER					
		- PRESENCE OF CRACKING OR DISCOLORATION	X		fill cracks,sealcoat		
ACCESS ROAD							
	ACCESS ROAD	- EROSION	X		fill with gravel		
		- OBSTRUCTIONS/DEBRIS					
		- POTHOLES	X		fill with gravel		
		- DAMAGE CAUSED BY VEHICULAR TRAFFIC	X		fill with gravel		

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
SWALE/DRAINAGE DITCHES						
	Transect ES1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	trees need cut
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	trees need cut
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES3	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
SWALE/DRAINAGE DITCHES (CONTINUED)						
	Transect ES4	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES6	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION	X		slight erosion	
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
SWALE/DRAINAGE DITCHES (CONTINUED)						
	Transect ES7	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES8	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES9	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
SWALE/DRAINAGE DITCHES (CONTINUED)						
	Transect ES10	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES11	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS				
		- ROOTING OF TREES				
	Transect ES12	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS				
		- ROOTING OF TREES				

TABLE D.1

COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
SWALE/DRAINAGE DITCHES (CONTINUED)						
	Transect ES13	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES13	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS				
		- ROOTING OF TREES				

N

0 40 80ft

403
402
373
377
378
379
401
216
215
416
415
414
209
15

NORTH JACKSON STREET
BRECKENRIDGE ROAD
BAILEY SCALES ROAD
GM DRIVE

ES9
ES10
ES8
ES7
ES6
ES5
ES4
ES3
ES2
ES1
EV1
EV2
EV3
EV4
EV5

DETENTION BASIN 1
DETENTION BASIN 2
DETENTION BASIN 3
DETENTION BASIN 4
DETENTION BASIN 5

PROPOSED WET WELL
WET WELL 3
FORCEMAIN FROM WET WELL 3 TO WTP

GUS
LDS MANHOLE
LCS MANHOLE
VAULT

WEST PLANT PARKING LOT
WV1
WA1

STORMWATER LAGOON

LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- EXISTING FENCE LINE
- EXISTING RAILROAD TRACKS
- EXISTING DIRT ROADS
- EXISTING ROADS / PAVED AREAS
- EXISTING ELECTRICAL POWER LINE
- EXISTING FORCEMAIN TO TREATMENT FACILITY
- EXISTING OVERHEAD ELECTRICAL POWER LINE
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE GM PROPERTY BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING STORM SEWER
- WEST PLANT COVER LIMIT
- VAULT LIMIT
- EAST PLANT COVER LIMIT
- DRAINAGE DITCH
- ASPHALT PAVEMENT AREA
- LOW FLOW CHANNEL
- EAST PLANT AREA
- GM LLC OWNED RESIDENTIAL
- EAST PLANT COVER SYSTEM
- FINAL VAULT COVER SYSTEM AT SURFACE
- FINAL VAULT COVER SYSTEM BURIED BY EAST PLANT AREA COVER SYSTEM
- GRAVEL BED
- PAVED COVER SURFACE
- PROPOSED PILOT TRENCH
- GUS VAULT GROUNDWATER UNDERDRAIN SYSTEM SUMP
- LDS LEAK DETECTION SYSTEM SUMP
- LCS LEACHATE COLLECTION SYSTEM SUMP
- TRANSECT

TRANSECT LABELING

E	EAST PLANT COVER
V	VEGETATIVE COVER
A	ASPHALT COVER
W	WEST PLANT COVER
S	SWALE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

GM CET BEDFORD FACILITY
BEDFORD, INDIANA

INTERIM OPERATIONS, MAINTENANCE AND MONITORING PLAN
EAST PLANT COVER SYSTEM

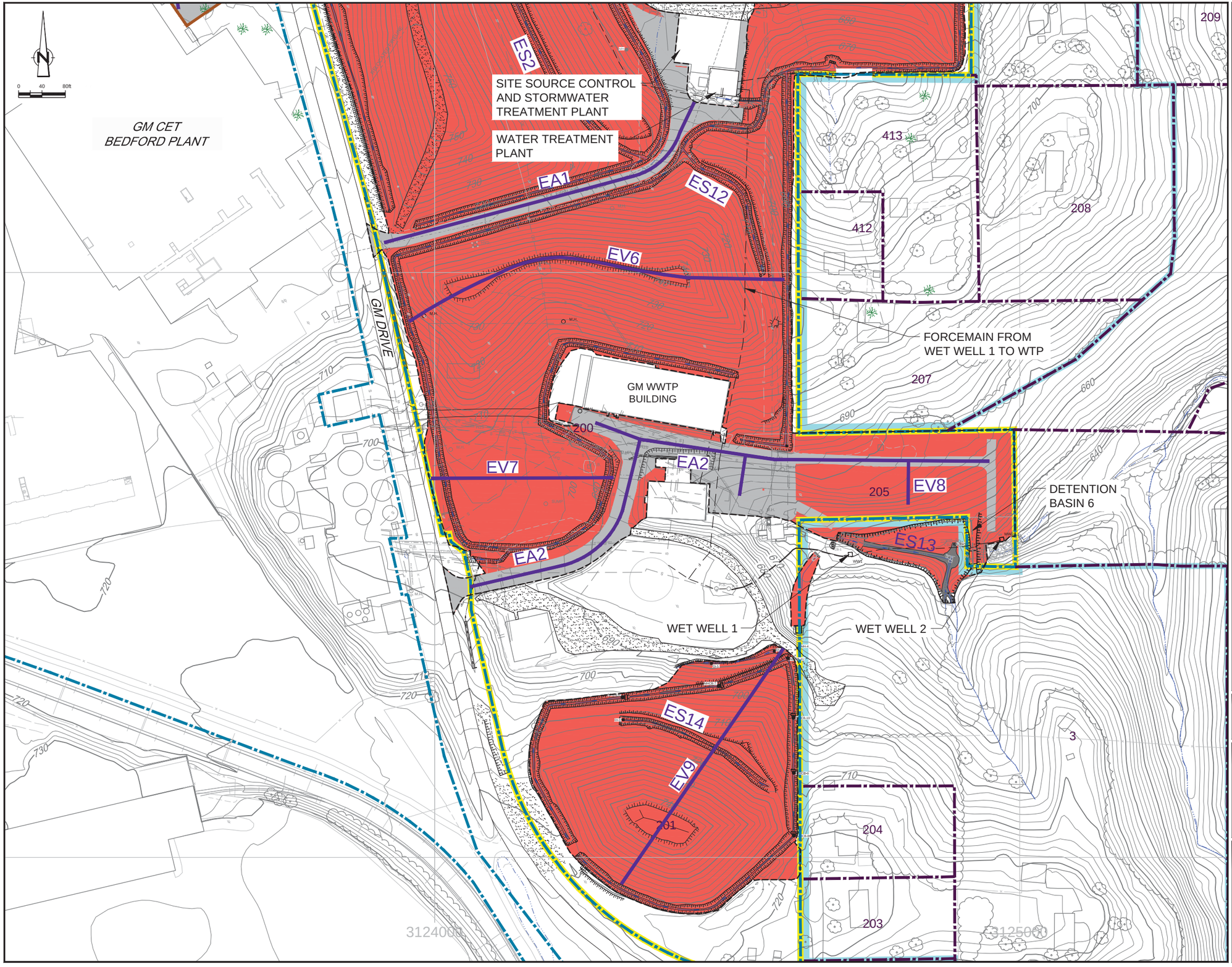
EAST PLANT COVER SYSTEM INSPECTIONS NORTHERN SECTION AND WEST PLANT COVER SYSTEM INSPECTIONS

GHD

Source Reference:
BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI, APRIL 2001 AND CRA SURVEYS 2002 TO 2008

Project Manager:	Reviewed By:	Date:	
J.M.	P.G.	October 2016	
Scale: 1:80	Project N°: 13968-00	Report N°: 402	Drawing N°: figure D.1

13968-00(402)GN-WA007 OCT 12/2016



LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- EXISTING FENCE LINE
- EXISTING RAILROAD TRACKS
- EXISTING DIRT ROADS
- EXISTING ROADS / PAVED AREAS
- EXISTING ELECTRICAL POWER LINE
- EXISTING FORCEMAIN TO TREATMENT FACILITY
- EXISTING OVERHEAD ELECTRICAL POWER LINE
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE GM PROPERTY BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING STORM SEWER
- WEST PLANT COVER LIMIT
- VAULT LIMIT
- EAST PLANT COVER LIMIT
- DRAINAGE DITCH
- ASPHALT PAVEMENT AREA
- LOW FLOW CHANNEL
- EAST PLANT AREA
- GM LLC OWNED RESIDENTIAL
- EAST PLANT COVER SYSTEM
- FINAL VAULT COVER SYSTEM AT SURFACE
- FINAL VAULT COVER SYSTEM BURIED BY EAST PLANT AREA COVER SYSTEM
- GRAVEL BED
- PAVED COVER SURFACE
- PROPOSED PILOT TRENCH
- GUS — VAULT GROUNDWATER UNDERDRAIN SYSTEM SUMP
- LDS — LEAK DETECTION SYSTEM SUMP
- LCS — LEACHATE COLLECTION SYSTEM SUMP
- TRANSECT

TRANSECT LABELING

E	EAST PLANT COVER
V	VEGETATIVE COVER
A	ASPHALT COVER
W	WEST PLANT COVER
S	SWALE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

GM CET BEDFORD FACILITY
BEDFORD, INDIANA

INTERIM OPERATIONS, MAINTENANCE AND MONITORING PLAN
EAST PLANT COVER SYSTEM

EAST PLANT COVER SYSTEM INSPECTIONS SOUTHERN SECTION

Source Reference:

BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI, APRIL 2001
AND CRA SURVEYS 2002 TO 2008

Project Manager:	Reviewed By:	Date:	
J.M.	P.G.	October 2016	
Scale: 1:80	Project N°: 13968-00	Report N°: 402	Drawing N°: figure D.2

13968-00(402)GN-WA007 OCT 12/2016