GM Sustainable Workplaces
GM Global Technical Center-Service Engineering Bldg.
31266 Alfred Sloan Road
Warren, MI 48092-2047

October 14, 2022 (Revised October 21, 2022)

Peter Ramanauskas
U.S. EPA Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604-3590

Dear Mr. Ramanauskas:

Re: RCRA Corrective Action Administrative Order on Consent (AOC)
Progress Report 83, April 2022 through October 2022
GM Casting Operations Bedford Facility, ID 006036099, Docket No. RCRA 05 2017 0011
Bedford, Indiana

This Progress Report is submitted by General Motors LLC (GM) in accordance with the GM Bedford Casting Operations (BCO) 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 from April 2022 through September 2022 for the RCRA Corrective Action (CA) Project at the GM BCO – Bedford Facility (Facility) and select surrounding properties (Site), Bedford, Indiana.

The next RCRA progress report covering October 2022 through March 2023 will be submitted on or before April 15, 2023.

1. List of Completed Activities

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

1. The Groundwater Treatment Plant (GWTP) collected and treated water from the Pilot Trench, Vault sumps, and wet wells during April 2022 through September 2022. An estimated 0.30 pounds of PCBs were removed during the reporting period through collection and treatment of the groundwater. A summary of the volumes and sample results used for this calculation is provided in Table 1. Operational and compliance samples were collected quarterly. Monthly discharge monitoring reports have been submitted to the State of Indiana in conformance with the National Pollutant Discharge Elimination System (NPDES) Permit Number IN0064424. A total of 15,550,511 gallons of treated groundwater were discharged during the reporting period.
2. Absorbent socks were removed and replaced from CH-5, MW-X209Y053, and CAMW-3 monthly from April 2022 through September 2022 with the exception of August 2022. The August exchange was scheduled for the last week of August, but due to field personnel illness, the event was postponed to September 2022. Table 2 summarizes oil removal (based on disposal weights) from the AOI-8 area.

3. Progress Report 82 covering activities from October 2021 through March 2022 was submitted to U.S. EPA on April 14, 2022.
4. U.S. EPA approved responses to comments on the Phase II Perimeter Groundwater Trench Collection System Design Report on April 4, 2022.
5. U.S. EPA provided comments on the initial Corrective Measures Proposal (CMP) responses to comments on April 12, 2022.
6. U.S. EPA provided comments on the initial Long Term Operation, Monitoring and Maintenance Plan (LTOMMP) responses to comments on April 12, 2022.
7. GM provided the EI CA750 Second Half 2021 sampling event summary on April 15, 2022.
8. U.S. EPA provided comments on the EI CA750 Second Half 2021 sampling event summary on April 21, 2022.
9. The Former Clarifier Area oil recovery test was initiated on April 25, 2022.
10. GM provided a second round of response to CMP comments on May 13, 2022.
11. GM notified U.S. EPA on May 19, 2022, that due to a miscommunication, monthly sampling attempts of the leachate collection system (LCS) and leak detection system (LDS) had not resumed following the initial deferment of sampling following the onset of COVID-19 and the business disruption it caused (see Section 2.1 for additional information).
12. Landfill cover system mowing was conducted May 14, 2022.
13. GHD conducted the semi-annual cap inspection on May 24, 2022. Copies of the field inspection form and photos are provided in Attachment A.
14. GM provided the Residential Well Survey Pork Plan to U.S.EPA on June 21, 2022. U.S. EPA provided comments on the Residential Well Survey Work Plan the same day.
15. GM provided a revised Residential Well Survey Work Plan, incorporating responses to U.S.EPA comments, on June 29, 2022.
16. U.S. EPA provided comments on the GM's second set of responses to CMP comments on June 30, 2022.
17. U.S. EPA requested additional clarification of the Residential Well Survey Work Plan on June 30, 2022. Responses were provided the same day and agreed to by U.S.EPA. The final work plan was submitted.
18. GM provided responses to comments on EI CA750 Second Half 2021 sampling event summary on July 1, 2022.
19. U.S. EPA requested additional clarification on the EI CA750 Second Half 2021 sampling event summary on July 5, 2022.
20. GM provided responses to additional comments on the EI CA750 Second Half 2021 sampling event summary on July 7, 2022.
21. GM provided the revised (red-lined) Phase II Bedrock Trench Design Report to U.S. EPA on July 13, 2022.
22. GM provide the 2021 TSCA Annual Vault Report on July 14, 2022.
23. U.S. EPA provided comments on the 2021 TSCA Annual Vault Report on July 20, 2022.
24. U.S. EPA approved the Phase II Bedrock Trench Design Report on July 21, 2022.
25. GM submitted the final Phase II Bedrock Trench design report to U.S. EPA on July 29, 2022.
26. Pilot Trench performance groundwater quality monitoring was conducted the week of August 1, 2022.
27. Bid documents for the Phase II Bedrock Trench construction were issued on August 2, 2022.

28. U.S. EPA and IDEM were notified on an unexpected increase in the volume of leachate collected within the LCS on August 9, 2022. U.S. EPA requested additional clarification on the situation on the same date (see Section 2.2 for additional information).
29. Pre-bid meeting for the Phase II Bedrock Trench construction was held on August 11, 2022.
30. GM provided second round of response to U.S. EPA's LTOMMP comments on August 19, 2022.
31. GM provided responses to comments on the 2021 TSCA Annual Vault Report on September 1, 2022.
32. Quarterly groundwater level monitoring was conducted the week of September 5, 2022.
33. GM provided additional clarification on the reporting of the increase in LCS collection volumes on September 19, 2022.
34. GM provided the mass PCB removal summary (October 2021-August 2022) on September 16, 2022.
35. GM provided the First Half 2022 EI CA 750 sampling event summary on September 22, 2022.
36. U.S. EPA provided comments on the second LTOMMP responses to comments on September 23, 2022.
37. GM received bids for the Phase II Trench construction from Sevenson Environmental Services and the construction services division of GHD on September 23, 2022.
38. GM and U.S.EPA held the annual project update meeting on September 29, 2022.
39. GM hosted a public meeting on September 29, 2022.
40. Routine project meetings updates were held with U.S.EPA and IDEM on April 21, May 19, June 16, July 21, August 18, and September 15, 2022.

2. Summaries of Problems and Planned Resolutions

2.1 LCS and LDS Sampling

As part of a project task review on May 2022, it was discovered that attempts to collect samples from the LCS and LDS at the frequency required by the procedures in the August 2016 Post-Closure Plan for the TSCA Vault had not been occurring. According to the plan, GM is required to inspect the LCS and LDS each month and collect a water sample, however, there is often insufficient water present in those systems to be able to collect the sample. Therefore, many inspections do not result in a sample collection from these systems. During the on-set of COVID-19 and the business disruption it caused, U.S. EPA agreed that this monthly LCS/LDS sampling procedure could be deferred from April to June of 2020 and resumed starting in July of 2020. The GWTP operator who performs these tasks misunderstood the instruction for this temporary change and believed instead that the sampling frequency had been changed permanently to an annual event each July. Samples were collected during July of 2020, but the lack of sample results in subsequent months (other than July of 2021) was not recognized because the trend of decreasing and irregular water production in these units did not seem unusual. For example, in the 6 years before the pandemic disruption, the LCS and/or LDS held sufficient water to be sampled during only a fraction of those monthly inspections. When samples could be collected, the result was often non-detect for PCBs and the frequency of non-detect results has been increasing over time.

Upon discovery, the GWTP operator was instructed to immediately resume the monthly LCS and LDS sampling frequency, subject to a sufficient water level to collect a sample. In addition, GHD

and the GWTP operator reviewed post-closure sampling requirements to ensure adherence to these provisions.

2.2 LCS Increased Volume

Between July 29, 2022, and August 8, 2022, an unexpected volume of leachate, totaling 40,361 gallons, was removed from the LCS. The operator first identified that a larger than expected volume of water was removed from the LCS during the last week of July and reported the condition to GHD. The weekly manual LCS reading collected on July 25, 2022, indicated the leachate level was below the elevation required for leachate removal. The following Friday (July 29, 2022), the operator noted the reading on the SCADA system (from the transducer in the sump) indicated the sump level was above the maximum depth and required leachate removal. As the SCADA readings have been sporadic, the operator confirmed the SCADA reading with a second manual measurement. Based on the manual readings, the water level in the LCS rose approximately 3 feet in four days. The operator removed a total of 20,837 gallons of water on July 29 and 31. An additional 19,524 gallons were removed between August 1 and 8, 2022.

During this time period that was no buildup of water in the LDS nor a higher water table outside the Vault, although the site received roughly 3 inches of rain in the two days preceding the initial increased LCS water depth. The area around the landfill was inspected and no obvious depressions, degraded cover or ponding of water were observed.

Although this higher inflow of water to the system is somewhat unexpected, it is likely a normal redistribution of water inside the LCS. Additional monitoring was conducted to verify this theory including:

a. Additional surface inspections were completed to identify signs that the cover system may have been compromised; for example, areas of slumping, surface depressions, standing or water or saturated soil. There were no signs of a cover system failure.
b. The liner around the vault was inspected. A small portion of the liner has pulled away from the restraining band where the liner is booted to the LCS sump. This will be fixed but would not contribute to the increase in leachate volume.
c. Leachate volume removed and leachate water levels were compared with precipitation events. No correlation was found.
d. Leachate data quality was compared with historical data and found to be consistent.
e. The LCS sump was resurveyed to determine if there has been localized settlement. There has been less than 0.5 inches of settlement.
f. Monitoring of water levels in the LCS have stabilized.

GM will summarize the findings in a separate technical memo.

2.3 Concrete Sealing Upstream of Confluence

During a walkthrough of the Spring 018 area in June 2022. GHD and GM noticed that a portion of the concrete placed in 2012/2013 as part of the creek sealing activities had broken and shifted within the creek channel. The impacted area is limited to the section of Bailey's Branch Creek between Tributary 2 and 3. To prevent this condition from progressing further downstream, the afflicted area will be repaired as part of the overall Spring 018 Area decommissioning plan.

3. Projected Work for the Next Reporting Period

Work anticipated for the next reporting period includes:

1. Continue OMM for the GWTP
2. Continue GWTP discharge reporting under the NPDES permit
3. Collect monthly transducer data from the Pilot Trench monitoring location
4. Prepare the draft Pilot Trench Performance Monitoring Report
5. Finalize the 2021 TSCA Vault Annual Report upon U.S. EPA approval of responses to comment
6. Summarize findings of the former clarifier oil recovery assessment
7. Mow the East Plant Area cover system
8. Conduct the semi-annual cover system inspection
9. Respond to U.S. EPA comments on the CMP and LTOMMP
10. Review horizontal well installation options for gravel underdrain system (GUS)
11. Conduct pilot trench performance groundwater monitoring (re-sample)
12. Conduct the second half 2022 EI CA750 monitoring and the first quarter 2023 static water level gauging
13. Provide U.S. EPA and IDEM project updates via emails and/or telephone calls
14. Launch the updated public-facing project web site
15. Prepare the Spring 018 Area Decommissioning Plan
16. Update the groundwater treatment plant operations monitoring and maintenance plan
17. Update the site source control operations, monitoring and maintenance plan
18. Submit the updated cost estimate to support the 2023 Financial Assurance
19. Select a construction contractor for the Phase II Bedrock Trench construction
20. Begin construction of the Phase II Bedrock Trench
21. Submit the second half 2022 EI CA 750 sampling summary memo.

Please feel free to call me at 313-506-9465 if you have any questions concerning this information or otherwise regarding the GM BCO Project.

Sincerely,

Ed Peterson
Project Manager, Eco-Restorers
GM Sustainable Workplaces

Encl.

Lg/LTR-8

cc: Corey Peaslee; U.S. EPA
Chris Myer; IDEM
Ed Peterson; General Motors
Nathan Milliman; General Motors
John Maher; General Motors
Katie Kamm; GHD
Julie Luzwick; GHD
Bill Steinmann; GHD
Francis Ramacciotti; GHD

Table 1

GWTP PCB Mass Removal Estimate
GM BCO Facility
Bedford, Indiana

	Groundwater Treatment Plant (GWTP) Treated Volume (gallon)	PCB Influent Concentration [1,3] (µg/L)	Mass PCB Treated [2] (pound)
January 2019	5,467,881	0.71	0.032
February 2019	5,393,116	ND	0.000
March 2019	4,916,870	0.92	0.038
April 2019	5,547,708	1.5	0.069
May 2019	3,670,000	1.3	0.040
June 2019	5,542,417	1.2	0.056
July 2019	1,743,512	1.6	0.023
August 2019	930,385	1.1	0.009
September 2019	753,569	1.6	0.010
October 2019	977,015	1.5	0.012
November 2019	2,104,042	2.2	0.039
December 2019	3,099,964	1.4	0.036
January 2020	4,690,161	0.68	0.027
February 2020	3,642,899	1.1	0.033
March 2020	4,853,095	0.96	0.039
April 2020	2,681,548	1.4	0.031
May 2020	3,767,813	1.2	0.038
June 2020	2,295,164	0.96	0.018
July 2020	1,465,351	1.6	0.020
August 2020	2,109,119	0.89	0.016
September 2020	822,061	1.5	0.010
October 2020	1,663,537	1.24	0.017
November 2020	2,798,824	1.1	0.026
December 2020	2,045,106	1.1	0.019
January 2021	3,375,573	1.3	0.037
February 2021	4,192,610	1.2	0.042
March 2021	4,665,579	0.96	0.037
April 2021	3,035,075	0.7	0.018
May 2021	2,937,213	0.7	0.017
June 2021	1,746,454	0.7	0.010
July 2021	3,136,451	0.8	0.021
August 20201	1,148,478	0.8	0.008
September 2021	1,835,041	0.8	0.012
October 2021	2,261,232	2.3	0.043
November 2021	2,187,172	2.3	0.042
December 2021	4,396,238	2.3	0.084
January 2022	3,940,451	2.7	0.089
February 2022	5,937,720	2.7	0.134
March 2022	4,885,636	2.7	0.110
April 2022	4,175,292	1.3	0.045
May 2022	4,726,177	1.3	0.051
June 2022	2,092,135	1.3	0.023
July 2022	1,898,948	4.7	0.074
August 2022	1,721,448	4.7	0.068
September 2022	936,511	4.7	0.037

Total Estimated Volume of Water Treated During Reporting Period (gallons)	15,550,511
Total Estimated Mass of PCB Treated During Reporting Period (pounds)	0.30
Total Estimated Mass of PCB Treated, Since January 2019 (pounds)	1.66

Notes:

1 PCB concentration based on an average of parent and duplicate sample, if duplicate sample was collected. Quarterly influent sampling began in February 2021.

2 Mass removed = $\frac{treated\ volume\ (gallons) x\ PCB\ concentration(\frac{ug}{L})\ x\ 3.7854}{453.59 \times 1{,}000{,}000}$

3 Influent sampling reduced from to monthly to quarterly in April 2021.

Table 2

AOI-8 Oil Removal
GM BCO Facility
Bedford, Indiana

Date	Well	Oil Mass (lbs)	PCB Content (mass %)	PCB Mass (lbs) [1]
10/31/2018	CH-5	2.16	11%	0.24
11/5/2018	CH-5	2.28	11%	0.25
11/23/2018	CH-5	2.09	11%	0.23
12/4/2018	CH-5	2.81	11%	0.31
1/9/2019	CH-5	2.22	11%	0.24
1/23/2019	CH-5	2.16	11%	0.24
2/11/2019	CH-5	2.3	11%	0.25
2/26/2019	CH-5	2.33	11%	0.25
3/7/2019	CH-5	2.18	11%	0.24
3/18/2019	CH-5	2.29	11%	0.25
4/1/2019	CH-5	2.39	11%	0.26
7/15/2019	CH-5	2.85	11%	0.31
7/31/2019	CH-5	1.88	11%	0.21
8/22/2019	CH-5	1.1	11%	0.12
11/20/2019	CH-5	1.2	11%	0.13
12/17/2019	CH-5	2.5	11%	0.27
1/20/2020	CH-5	3	11%	0.33
2/13/2020	CH-5	2	11%	0.22
4/24/2020	CH-5	1.5	11%	0.16
7/16/2020	CH-5	1.25	11%	0.14
8/12/2020	CH-5	2.75	11%	0.30
9/24/2020	CH-5	2	11%	0.22
11/19/2020	CH-5	2	11%	0.22
12/21/2020	CH-5	3	11%	0.33
1/25/2021	CH-5	1.65	11%	0.18
2/24/2021	CH-5	2	11%	0.22
3/16/2021	CH-5	2	11%	0.22
4/20/2021	CH-5	2.48	11%	0.27
5/27/2021	CH-5	1.98	11%	0.22
6/21/2021	CH-5	1.98	11%	0.22
7/29/2021	CH-5	0.98	11%	0.11
8/26/2021	CH-5	0.48	11%	0.05
9/17/2021	CH-5	1.48	11%	0.16
10/28/2021	CH-5	0.98	11%	0.11
11/18/2021	CH-5	0.98	11%	0.11
12/9/2021	CH-5	0.48	11%	0.05
1/27/2022	CH-5	0.98	11%	0.11
2/16/2022	CH-5	1.23	11%	0.13
3/30/2022	CH-5	0.73	11%	0.08
4/25/2022	CH-5	1.73	11%	0.19
5/25/2022	CH-5	1.73	11%	0.19
6/29/2022	CH-5	0.98	11%	0.11
7/15/2022	CH-5	0.73	11%	0.08
9/8/2022	CH-5	0.48	11%	0.05
Total PCB Removed from CH-5 (LNAPL) [3]				**8.49**

Table 2

AOI-8 Oil Removal
GM BCO Facility
Bedford, Indiana

Date	Well	Oil Mass (lbs)	PCB Content (mass %)	PCB Mass (lbs) [1]
3/25/2019	MW-X209Y053	24.21	40%	9.68
7/15/2019	MW-X209Y053	2.45	40%	0.98
7/31/2019	MW-X209Y053	1.98	40%	0.79
8/22/2019	MW-X209Y053	1.1	40%	0.44
1/20/2020	MW-X209Y053	2.1	40%	0.84
2/13/2020	MW-X209Y053	1	40%	0.40
4/24/2020	MW-X209Y053	1	40%	0.40
7/16/2020	MW-X209Y053	1.0	40%	0.40
9/24/2020	MW-X209Y053	1.6	40%	0.62
11/19/2020	MW-X209Y053	1.0	40%	0.40
12/21/2020	MW-X209Y053	2.8	40%	1.10
1/25/2021	MW-X209Y053	0.8	40%	0.32
2/24/2021	MW-X209Y053	1.5	40%	0.60
3/16/2021	MW-X209Y053	1.0	40%	0.40
4/20/2021	MW-X209Y053	1.48	40%	0.59
5/27/2021	MW-X209Y053	1.23	40%	0.49
6/21/2021	MW-X209Y053	0.73	40%	0.29
7/29/2021	MW-X209Y053	1.48	40%	0.59
8/26/2021	MW-X209Y053	1.48	40%	0.59
9/17/2021	MW-X209Y053	0.48	40%	0.19
10/28/2021	MW-X209Y053	0.73	40%	0.29
11/18/2021	MW-X209Y053	0.53	40%	0.21
12/9/2021	MW-X209Y053	0.48	40%	0.19
1/27/2022	MW-X209Y053	0.48	40%	0.19
2/16/2022	MW-X209Y053	0.73	40%	0.29
3/30/2022	MW-X209Y053	0.73	40%	0.29
4/25/2022	MW-X209Y053	0.98	40%	0.39
5/25/2022	MW-X209Y053	0.98	40%	0.39
6/29/2022	MW-X209Y053	0.73	40%	0.29
7/15/2022	MW-X209Y053	0.48	40%	0.19
9/8/2022	MW-X209Y053	0.00	40%	0.00
Total PCB Removed from MW-X209Y053 (DNAPL) [2,4]				**22.87**
3/28/2019	CH-2A (solar sipper)	74.05	58%	42.95
2/11/2021	CH-2A (solar sipper)	159.72	58%	92.64
Total PCB Removed from CH-2A (DNAPL) [2,5]				**135.59**
3/16/2021	CAMW-3	1	31%	0.31
4/20/2021	CAMW-3	2.0	31%	0.61
5/27/2021	CAMW-3	0.7	31%	0.23
6/21/2021	CAMW-3	1.5	31%	0.46
7/29/2021	CAMW-3	0.5	31%	0.15
8/26/2021	CAMW-3	0.18	31%	0.06
9/17/2021	CAMW-3	1.48	31%	0.46
10/28/2021	CAMW-3	1.48	31%	0.46

Table 2

AOI-8 Oil Removal
GM BCO Facility
Bedford, Indiana

Date	Well	Oil Mass (lbs)	PCB Content (mass %)	PCB Mass (lbs) [1]
11/18/2021	CAMW-3	0.48	31%	0.15
12/9/2021	CAMW-3	0.98	31%	0.30
1/27/2022	CAMW-3	0.48	31%	0.15
2/16/2022	CAMW-3	0.73	31%	0.23
3/30/2022	CAMW-3	0.48	31%	0.15
4/25/2022	CAMW-3	1.23	31%	0.38
5/25/2022	CAMW-3	0.98	31%	0.30
6/29/2022	CAMW-3	0.73	31%	0.23
7/15/2022	CAMW-3	0	31%	0.00
9/8/2022	CAMW-3	0.23	31%	0.07
4/25/2022	CAMW-2 upper NAPL	26.61	16%	4.26
5/23/2022	CAMW-2 lower NAPL	86.33	31%	26.76
Total PCB Removed from CAMW-2 during test [8, 9, 10]				**31.02**

Table 2

AOI-8 Oil Removal
GM BCO Facility
Bedford, Indiana

Date	Well	Oil Mass (lbs)	PCB Content (mass %)	PCB Mass (lbs) [1]

Notes:

[1] PCB weight based on average of analytical data

Location	Sample Date	PCB (mg/kg)	Average (mg/kg)
CH-5	9/19/2005	224,500	109,067
	8/16/2011	89,700	
	4/9/2014	13,000	
MW-X209Y053	9/19/2006	400,000	400,000
CH-2A	11/5/2008	380,000	580,000
	4/9/2014	780,000	
CAMW-2 (lower)	11/21/2019	310,000	310,000
CAMW-2 (upper)	11/21/2019	160,000	160,000

[2] PCB weight from solar sipper and the initial removal from MW-X209Y053 (3/25/2019) is based on an approximate gallons of oil removal. DNAPL density of 1.16 g/cc used when converting volume (gallons) to mass (pounds). Density value determined by laboratory analysis from the 4/19/2014 sampling event.

[3] CH-5 Mass (lbs)= $\frac{Sock\ net\ weight\ (lbs) x\ 109{,}067 (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

[4] MW-X209Y053 Mass(lbs) = $\frac{Sock\ net\ weight\ (lbs) x\ 400{,}000\ (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

3/25/2019 mass removal calculated based on removal of 2.5 gallons of NAPL

[5] CH-2A Mass (lbs) = $\frac{Liquid\ weight\ (lbs) x\ 580{,}000\ (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

[6] CAMW-3 Mass (lbs)= $\frac{Sock\ net\ weight\ (lbs) x\ 310{,}000 (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

[7] PCB concentration at CAMW-2 used for removal calculations as no data is available for CAMW-3 and the two locations are in close proximity.

[8] PCB weight from CAMW-2 is based on an approximate gallons of oil removal during the oil recovery test. Upper and lower NAPL density of 1.18 g/cc and 1.15 g/cc, respectively, used when converting volume (gallons) to mass (pounds). Density value determined by laboratory analysis from the 11/21/2019 sampling event.

[9] CAMW-2 (upper) Mass (lbs) = $\frac{Liquid\ weight\ (lbs) x\ 160{,}000\ (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

[10] CAMW-2 (lower) Mass (lbs) = $\frac{Liquid\ weight\ (lbs) x\ 310{,}000\ (mg/kg)}{1{,}000{,}000\ (mg/kg)}$

Attachment A

Cover System Inspection Forms

TABLE D.1

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

Date of Inspection: 5/24/22 **Weather:** Sunny

Inspector: Scott Sholar **Temperature:** 60F

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	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	✔				
		- EXPPOSURE OF LINER	✔				
		- EROSION	✔				
		- LOCALIZED SETTLEMENT/SLUMPING	✔				
		- PONDING OF WATER/DRAINAGE	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect EV2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- 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	NOTES	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	✔				
		- EXPPOSURE OF LINER	✔				
		- EROSION	✔				
		- LOCALIZED SETTLEMENT/SLUMPING	✔				
		- PONDING OF WATER/DRAINAGE	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect EV4	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EXPPOSURE OF LINER	✔				
		- EROSION	✔				
		- LOCALIZED SETTLEMENT/SLUMPING	✔				
		- PONDING OF WATER/DRAINAGE	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect EV5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EXPPOSURE OF LINER	✔				
		- EROSION	✔				
		- LOCALIZED SETTLEMENT/SLUMPING	✔				
		- PONDING OF WATER/DRAINAGE	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES		✔		Near ES6	

TABLE D.1

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GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	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	✔				
		- EXPPOSURE OF LINER	✔				
		- EROSION		✔			
		- LOCALIZED SETTLEMENT/SLUMPING	✔				
		- PONDING OF WATER/DRAINAGE	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect EV7	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS		✔			
		- EXPPOSURE OF LINER		✔			
		- EROSION		✔			
		- LOCALIZED SETTLEMENT/SLUMPING		✔			
		- PONDING OF WATER/DRAINAGE		✔			
		- SIGNS OF BURROWING BY ANIMALS		✔			
		- ROOTING OF TREES		✔			
	Transect EV8	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS		✔			
		- EXPPOSURE OF LINER		✔			
		- EROSION		✔			
		- LOCALIZED SETTLEMENT/SLUMPING		✔			
		- PONDING OF WATER/DRAINAGE		✔			
		- SIGNS OF BURROWING BY ANIMALS		✔			
		- ROOTING OF TREES		✔			

TABLE D.1

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

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	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	✔				
		- EXPPOSURE OF LINER	✔				
		- EROSION	✔				
		- LOCALIZED SETTLEMENT/SLUMPING	✔				
		- PONDING OF WATER/DRAINAGE	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				11/12/2020
	Transect WV1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EXPPOSURE OF LINER					
		- EROSION	✔				
		- LOCALIZED SETTLEMENT/SLUMPING	✔				
		- PONDING OF WATER/DRAINAGE	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				

TABLE D.1

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

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	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		✔		Slight cracking.	
	Transect EA2	- QUALITY OF ASPHALT COVER	✔				
		- PRESENCE OF CRACKING OR DISCOLORATION		✔			
	Transect WA1	- QUALITY OF ASPHALT COVER	✔				
		- PRESENCE OF CRACKING OR DISCOLORATION		✔			
ACCESS ROAD							
	ACCESS ROAD	- EROSION		✔		Slight erosion along edge.	
		- OBSTRUCTIONS/DEBRIS	✔				
		- POTHOLES		✔			
		- DAMAGE CAUSED BY VEHICULAR TRAFFIC		✔			

TABLE D.1

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ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	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	✔				
		- EROSION		✔		Slight erosion along West edge	
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES		✔	Remove saplings		
	Transect ES2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔			1 sapling identified	
	Transect ES3	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				

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

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	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	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect ES5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect ES6	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EROSION		✔			
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES		✔	Removal		

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			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	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect ES8	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EROSION		✔			
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect ES9	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				

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			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	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES	✔				
	Transect ES11	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- 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		✔			
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES		✔			

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GM CET BEDFORD FACILITY
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			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	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES		✔			
	Transect ES13 (ES14)	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- EROSION	✔				
		- OBSTRUCTIONS	✔				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✔				
		- SIGNS OF BURROWING BY ANIMALS	✔				
		- ROOTING OF TREES		✔			

Photo 1 ES1 looking west

Photo 2 ES6 looking northeast

Photo 3 ES6/EV2 looking south

Photo 4 ES6/EV2 looking south

Photo 5 ES1 Looking southwest

Photo 6 EV6 looking east

Photo 7 Site facing north

Photo 8 ES14 looking northeast