



July 12, 2018

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

Re: RCRA Corrective Action Administrative Order on Consent (AOC)
Progress Report 69, Second Quarter 2018
GM GPS – Bedford Facility, IND 006036099, Docket No. RCRA 05 2014 0011
Bedford, Indiana

Dear Mr. Ramanauskas:

Please find enclosed the Progress Report 69 (Second Quarter 2018) for the Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) project at the GM Bedford Global Propulsion Systems (GPS) (formerly Castings, Engines, and Transmissions (CET) and formerly Powertrain) 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 Third Quarter of 2018 will be submitted on or before October 15, 2018.

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

Sincerely

Cheryl R. Hiatt
Project Coordinator
General Motors Remediation

YD/aj/179

Encl.

c.c.: See Attached Distribution List



GENERAL MOTORS

GM Bedford Distribution List

Peter Ramanauskas	U.S. EPA, Region 5
Daniel Haag	U.S. EPA, OSC
Chris Myer	IDEM Management
Carl Wodrich	Indiana Department of Natural Resources
Cheryl Hiatt/Ed Peterson	GM WFG Remediation
Lisa LaCouver	GM Bedford Environmental Compliance
James McGuigan	GHD Project Manager
Bill Steinmann	GHD Project Geologist
Katie Kamm	GHD Oversight Engineer
Stephen Song	Ramboll Environ



GENERAL MOTORS



Second Quarter 2018 Progress Report 69

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

GHD | 455 Phillip Street Waterloo Ontario N2L 3X2 Canada
013968 | Report No 419 | July 12, 2018



Table of Contents

1.	Introduction.....	1
2.	List of Completed Activities	1
3.	Summaries of Problems and Planned Resolutions.....	3
4.	Summaries of Changes Made in the Corrective Action (CA) During the Reporting Period.....	4
5.	Community Relations	4
6.	Changes in Personnel During the Reporting Period	4
7.	Projected Work for the Next Reporting Period	5
8.	Copies of Daily Reports, Inspection Reports, Laboratory/Monitoring Data	5

Table Index

Table 2.1	Spring 018 Sampling Results
Table 2.2	Storm Water and Groundwater Water Treatment Plant PCB Mass Removal Estimate

Appendix Index

Appendix A	Second Quarter 2018 Cover System Inspection: Photograph Log, Transect Figures, and Field Log
------------	---



1. Introduction

This Progress Report is submitted by General Motors LLC (GM) in accordance with the GM Bedford Global Propulsion Systems (GPS) 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 second calendar quarter of 2018 for the RCRA Corrective Action (CA) Project at the GM GPS – Bedford Facility (Facility) and select surrounding properties (Site), Bedford, Indiana.

The next RCRA progress report covering the third quarter of 2018 will be submitted on or before October 15, 2018.

2. List of Completed Activities

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

- Results for sample collected from Spring 018 during this quarter are presented in Table 2.1. Sample results for the quarterly sampling were previously emailed to U.S. EPA and Indiana Department of Environmental Management (IDEM) as they became available. As of the end of April 2018 sampling, the 12-month rolling average concentration of polychlorinated biphenyls (PCBs) in the Spring 018 discharge is 0.10 micrograms per liter ($\mu\text{g/L}$). The second quarterly sampling was conducted on April 11, 2018. The routine sample collected was non-detect for PCBs. The next quarterly sampling event is scheduled for July 11, 2018.
- The groundwater water treatment plant (GWTP) collected and treated approximately 7,386,907 gallons of water from the Pilot Trench, Vault sumps, and wet wells during the Second Quarter of 2018. An estimated 0.09 pounds of PCBs were removed during the quarter through collection and treatment of the groundwater. An estimated 0.30 pounds of PCBs have been removed over the last 12 months (July 2017 through June 2018). A summary of the volumes and sample results used for this calculation is provided in Table 2.2.
- The Second Half 2017 EI CA750 groundwater quality sampling was completed during the week of December 4, 2017. Quarterly static groundwater levels were collected during the same event.
 - Responses to U.S. EPA comments on the results memorandum were submitted on April 23, 2018.
- The First Half 2018 EI CA750 static groundwater levels were completed during the week of March 5, 2018.
 - The First Half 2018 EI CA750 groundwater quality sampling was completed during the week of May 21, 2018.
- GM submitted the results of the statistical evaluation of replicate samples collected during the Incremental Sampling Plan implementation to the U.S. EPA on March 28, 2018.



- Responses to U.S. EPA comments on the statistical evaluation were provided to U.S. EPA on June 22, 2018.
- A request to terminate groundwater collection and monitoring of the Gravel Underdrain System (GUS) Sump was submitted by GM to U.S. EPA on January 18, 2017.
 - U.S. EPA responded with clarification questions on February 24, 2017.
 - GM provided a response letter to U.S. EPA's questions on March 21, 2017; letter is under review by U.S. EPA.
- GM and GHD have developed an interim groundwater monitoring program to monitor the impact of the Pilot Trench to groundwater flow.
 - The revised Pilot Trench Performance Monitoring Plan, incorporating agency-agreed upon responses to U.S.EPA comments on the initial plan, was submitted to U.S. EPA on June 20, 2018
 - Pilot Trench monthly static groundwater monitoring was completed on April 30, May 21, and June 25, 2018.
 - Pressure transducers have been installed in selected monitoring wells pursuant to the PMP and are recording head values every 12 hours. These data will be downloaded and reported in future CA750 reports, as well as the Quarterly Progress Reports.
- Phase II Trench Design Report was submitted to U.S. EPA on March 12, 2018.
 - U.S. EPA provided comments on the Phase II Trench Design Report on May 18, 2018.
 - Responses to comments on the Phase II Design Report were submitted to U.S. EPA on June 28, 2018.
- Responses to U.S. EPA comments on the RFI Report were submitted to U.S. EPA on May 17, 2018.
- AOI 8 NAPL Recovery system construction is completed.
 - GM is establishing a new waste profile for disposal of the future recovered oil.
 - GM is re-configuring road access to the solar sipper enclosure to improve safety.

AOI 8 Clarifier Area.

- Final draft of the memorandum summarizing the IWTP clarifier area (former Lagoons 1-3) initial sampling and outlining well installation was sent to U.S. EPA on March 28, 2018.
 - U.S. EPA provided comments on the clarifier memo on April 12, 2018.
 - Responses to comments are being prepared.
- Pilot Trench Construction Completion Report was submitted to U.S. EPA on June 22, 2018.
- Formal monitoring of the East Plant, West Plant and Vault cover systems for the second quarter was completed on June 5, 2018. Photographic log and inspection sheets of the inspection are in Appendix A. Semi-annual cover system inspections will begin in October 2018. The spring inspections will be conducted in April 2019.



- U.S. EPA provided a “No Objection” letter to the 2018 Bedford Site Financial Assurance demonstration via letter dated April 4, 2018. Groundwater treatment plant continued to treat impacted groundwater and vault sump water with discharge under the NPDES permit during the second quarter.
 - Decommissioning of the former groundwater treatment system was coordinated with improvements to the surface water treatment plant. Work was completed.
- Conference calls were held with U.S. EPA and IDEM on April 5, 19, May 17, 31, June 14, and 28, 2018, to discuss items related to the project.
- Tailgate meetings for the reporting period were held daily to discuss safety topics related to on-going maintenance activities.
- RCRA Quarterly Progress Report #68, covering the first quarter of 2018, was submitted to the U.S. EPA and IDEM on April 13, 2018.

3. Summaries of Problems and Planned Resolutions

- The issue with the pumps in the Leachate Collection System (LCS) sump is being resolved. The pumps in the LCS had failed and the riser pipe had become sufficiently corroded to prevent direct replacement pumps from working. A temporary replacement pump has been installed to allow pumping as needed based on manual measurements. Manual monitoring and pumping of the LCS continues. The permanent pump has been ordered. The supplier has advised a delay in delivery of the pump as a result of parts for the pump coming from outside the United States and are being held up by recent tariff constraints. Alternate pumps are being evaluated. As discussed during the bi-weekly calls, the temporary pump within the GUS failed. When attempting to remove the temporary pump for replacement, the temporary pump became wedged in the sump, between the inner and outer casing. It may be possible to remove the original pump within the inner steel well casing (not previously attempted due to a curve in the casing as a result of the outer well casing kink). Due to the requirement of the construction, a crane is required to remove the pump.
 - GUS removal/replacement was put on hold during the second quarter pending U.S. EPA’s review of the Pilot Trench Performance Monitoring Plan. GM has requested the termination of GUS water collection which would negate the need for pump replacement.
 - Monitoring of the LCS continued during the second quarter. Removal and replacement of the LCS was scheduled for June 2018, but has been rescheduled for July pending delivery of the replacement pump (parts from overseas held up). Actively looking for an alternate pump.
- A tear in the liner within the AOI-8 area was detected on April 4, 2018. Preliminary indication is that the tear was caused by upward pressure exerted on the cover system as a result of a damaged air line running below the cover system. U.S. EPA was notified of the situation on the same day as discovery. Cover system inspection and repairs are complete.



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

The following changes made to the CA during the reporting period.

- Response letter regarding the request to terminate groundwater collection and monitoring of the GUS submitted to U.S. EPA on March 21, 2017.
- The RCRA Quarterly Progress Report # 68, covering the first quarter of 2018, submitted to U.S. EPA and IDEM on April 13, 2018.
- Responses to U.S. EPA comments on the Second Half 2017 EI CA750 groundwater quality results memorandum submitted to U.S. EPA on April 23, 2018.
- Responses to U.S. EPA comments on the RFI Report submitted to U.S. EPA on May 17, 2018.
- Responses to comment on the Pilot Trench Performance Monitoring Plan submitted to U.S. EPA on June 20, 2018.
- Responses to U.S. EPA comments on the statistical evaluation provided to U.S. EPA on June 22, 2018.
- Responses to comments on the Phase II Design Report submitted to U.S. EPA on June 28, 2018.

5. Community Relations

The telephone number for public contact is 812-277-8954 (Katie Kamm, GHD). Individual meetings can be arranged to discuss project progress with residents as requested.

The next neighborhood/public meeting is scheduled for July 18, 2018. Presentations for past meetings are posted on the GM Bedford project 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. Data located in the Library repository can also be found on the aforementioned website.

6. Changes in Personnel During the Reporting Period

No changes to report for this quarter.



7. Projected Work for the Next Reporting Period

Work anticipated for the next reporting period includes:

- Replace the pump and stainless steel riser installations at the LCS sump
- Monitor Spring 018 in accordance with the revised schedule
- Collect quarterly groundwater static levels
- Install the southern perimeter fence
- Select a contractor for installation of the balance of the perimeter fence
- Install the proposed monitoring wells along the area of the Pilot Trench
- Conduct the Pilot Trench dye trace study
- Install proposed monitoring wells in the clarifier area
- Collect follow-up soil samples (grab) from the incremental soil sampling program.
- Conduct the July 2018 Public Meeting
- Conduct the Annual Meeting between GM and Agencies (U.S.EPA and IDEM)
- Complete outstanding responses to comments for the Construction Certification Report for Stormwater Pond Sediment Removal

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.

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

1. Weeds or clover growth were noted at most Transects in the East Plant Area and the West Plant Area, which is also typically accompanied by some bare patches.
2. Weed growth and bare spots were identified at Transects EV1, EV2, EV3, EV4, EV5, EV6, EV7, EV8, EV9, WV1, ES1, ES2, ES3, ES4, ES5, ES6, ES7, ES8, ES9, ES10, ES11, ES12, and ES13.
3. Erosion reported at Transects EV4, EV5, and ES6.
 - Re-seeding in the eroded patches will be completed as necessary in early Fall 2018 to optimize germination.

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 - Second Quarter 2018
GM CET Bedford Facility
Bedford, Indiana

Area	P015	
	Spring 018C	
	SW-015-011018-MC-40985	
	1/10/2018	
Sample Location:	P015	
	Spring 018C	
	SW-015-041118-MC-40997	
	4/11/2018	
Sample Identification:		
Sample Date:		
Parameters	Units	
PCBs		
Aroclor-1016 (PCB-1016)	ug/L	0.19 U
Aroclor-1221 (PCB-1221)	ug/L	0.19 U
Aroclor-1232 (PCB-1232)	ug/L	0.19 U
Aroclor-1242 (PCB-1242)	ug/L	0.19 U
Aroclor-1248 (PCB-1248)	ug/L	0.19 U
Aroclor-1254 (PCB-1254)	ug/L	0.19 U
Aroclor-1260 (PCB-1260)	ug/L	0.19 U
Total PCBs	ug/L	ND
Wet		
Total suspended solids (TSS)	ug/L	2200

Notes:

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

Table 2.2

**GWTP PCB Mass Removal Estimate
GM Bedford CET Facility
Bedford, Indiana**

	Groundwater Treatment Plant (GWTP) Treated Volume (gallon)	PCB Influent Concentration (µg/L)	Mass PCB Treated (pound)
July 2017 ¹	1,618,000	0.055 ¹	0.001
August 2017	395,000	1.5	0.005
September 2017 ^{2,3}	459,483	0.055 ¹	0.000
October 2017 ⁴	833,154	1.6	0.011
November 2017	1,627,974	0.74	0.010
December 2017	1,525,264	1.7	0.022
January 2018 ⁵	3,120,854	1.6	0.040
February 2018	4,425,851	2.2	0.081
March 2018	3,850,599	1.5	0.048
April 2018	4,000,022	0.99	0.033
May 2018 ⁶	1,442,112	2.3	0.028
June 2018 ⁷	1,944,773	1.5	0.024
Total Estimated Volume of Water Treated, Second Quarter 2018 (gallons)			7,386,907
Total Estimated Mass of PCB Treated, Second Quarter 2018 (pounds)			0.09
Total Estimated Mass of PCB Treated, Since July 2017 (pounds)			0.30

Notes:

- ¹ Sample results were non-detect. Half of the quantitation limit (max of 0.11 µg/L for both samples) is used to calculate the mass of PCB treated.
- ² Estimate based on average daily flow rate for first fourteen days (6 days operation) of September, projected for a total of 13 days of operation consistent with August treatment.
- ³ PCB concentration based on one value instead of average of two monthly samples.
- ⁴ PCB concentration based on an average of two values for October 2017
- ⁵ PCB concentration based on an average of two values for January 2018
- ⁶ PCB concentration based on an average of two values for May 2018
- ⁷ PCB concentration based on an average of two values for June 2018

Appendix A

Second Quarter 2018 Cover System Inspection: Photograph Log, Transect Figures, and Field Log



Photo 1: Vegetation along EV2 facing west



Cover System Inspection Second Quarter 2018



Photo 2: EV3 East Plant Cover facing south toward pond



Cover System Inspection Second Quarter 2018



Photo 3: Vegetation at ES1 facing northwest



Cover System Inspection Second Quarter 2018



Photo 4: EV3 at ES9 East Plant Cover area facing west



Cover System Inspection Second Quarter 2018



Photo 5: ES2 East Plant Area Cover facing southwest



Cover System Inspection Second Quarter 2018



Photo 6: EV2 East Plant Cover area facing south



Cover System Inspection Second Quarter 2018



Photo 7: Drainage at ES6 facing east at EV5



Cover System Inspection Second Quarter 2018



Photo 8: Vegetation along EV5 East Plant Area Cover facing southwest



Cover System Inspection Second Quarter 2018



Photo 9: Vegetation south of ES6 East Plant Area Cover facing east



Cover System Inspection Second Quarter 2018



Photo 10: EV6 near EA1 East Plant Area Cover facing northwest



Cover System Inspection Second Quarter 2018



Photo 11: Vegetation at EV8 East Plant Cover area facing southwest



Cover System Inspection Second Quarter 2018



Photo 12: Vegetative growth along EV5 East Plant Area facing southwest



Cover System Inspection Second Quarter 2018



Photo 13: Vegetation growth at ES12 East Plant Area Cover facing west



Cover System Inspection Second Quarter 2018



Photo 14: EV7 East Plant Cover facing northeast



Cover System Inspection Second Quarter 2018



Photo 15: EV6 East Plant Area Cover area facing northwest



Cover System Inspection Second Quarter 2018



Photo 16: ES12 East Plant Area Cover facing southeast



Cover System Inspection Second Quarter 2018



Photo 17: EV9 East Plant Area Cover facing northeast



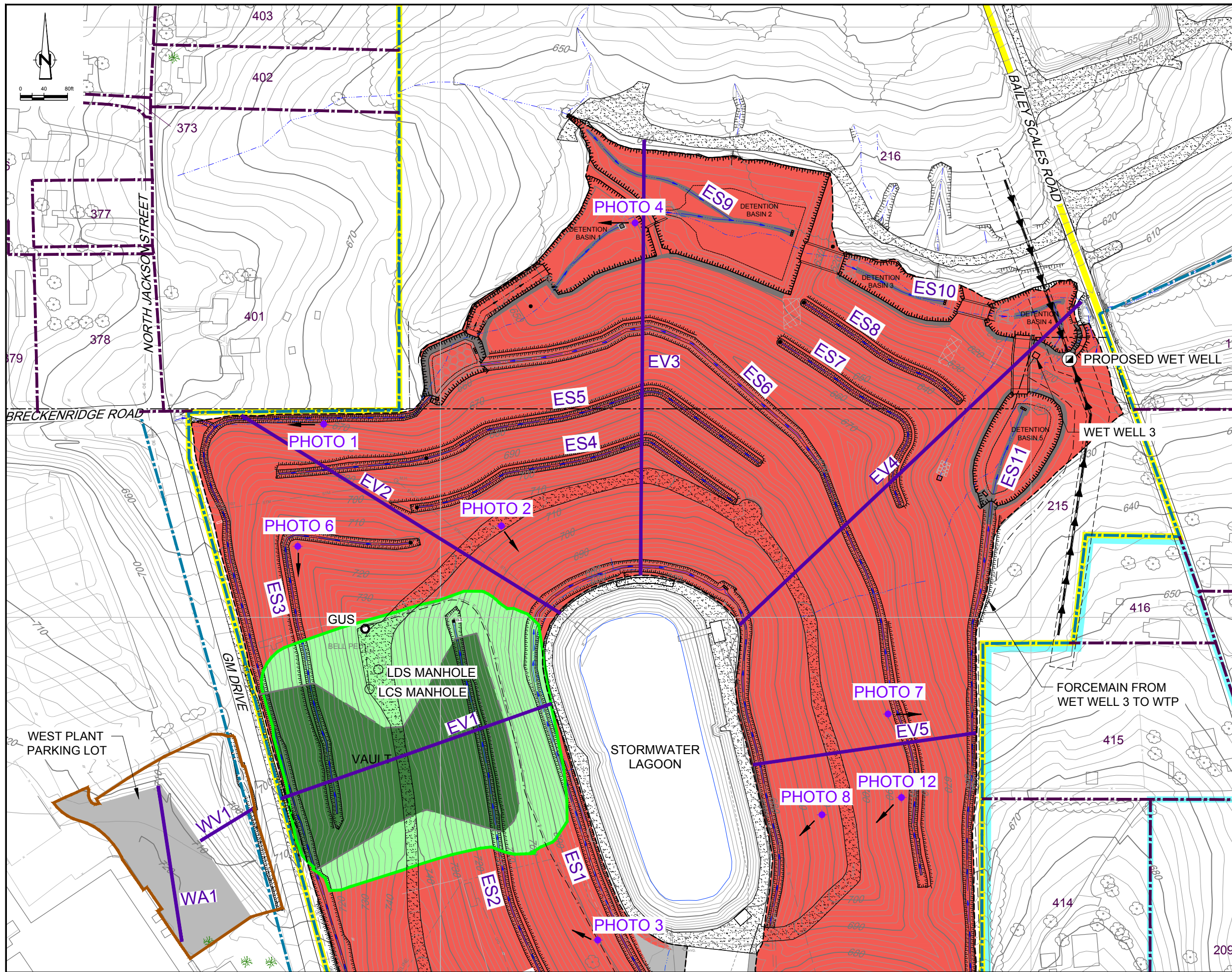
Cover System Inspection Second Quarter 2018



Photo 18: ES14 East Plant Area Cover facing south



Cover System Inspection Second Quarter 2018



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
- VAULT GROUNDWATER UNDERDRAIN SYSTEM SUMP
- LEAK DETECTION SYSTEM SUMP
- 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**

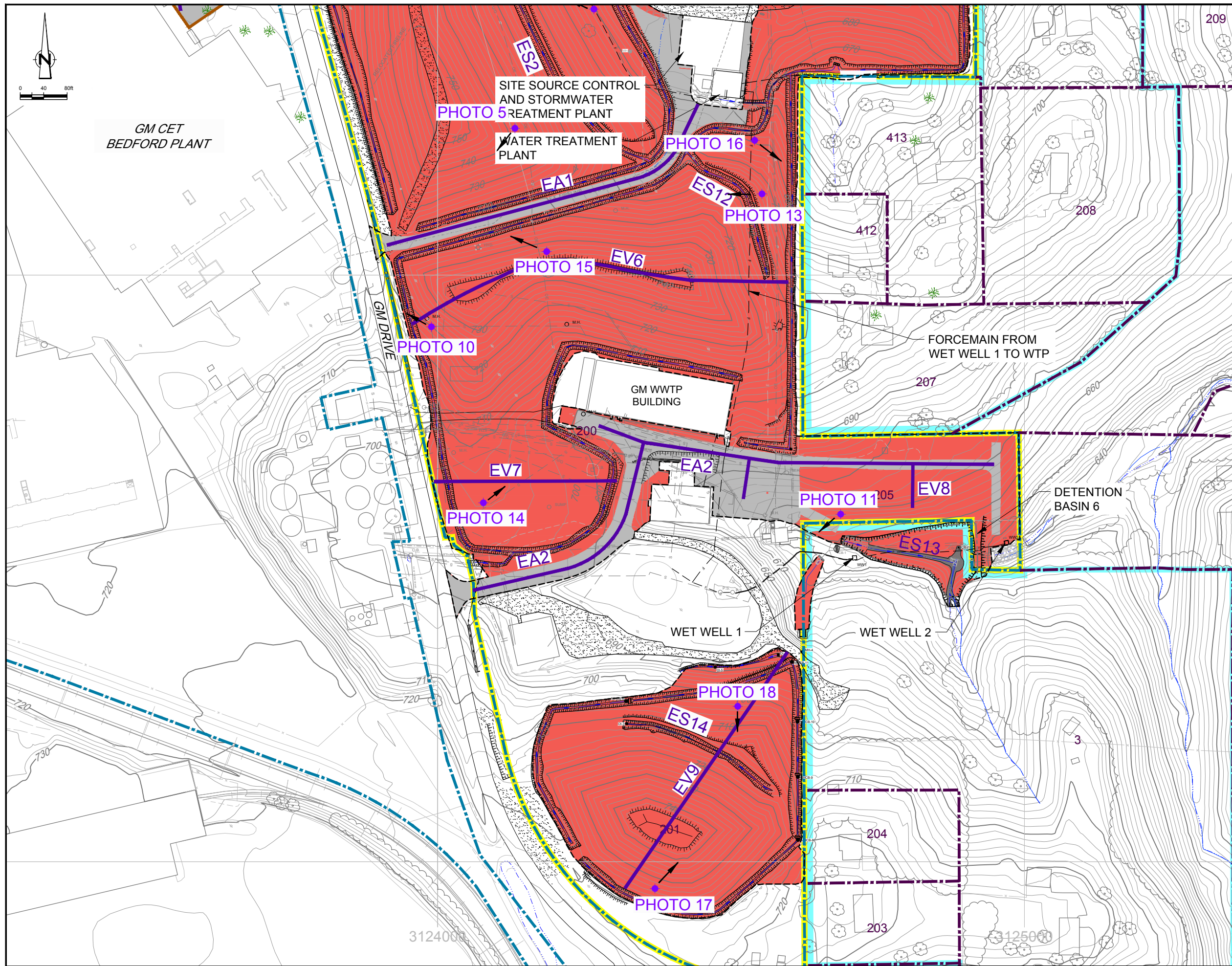
INTERIM OPERATIONS, MAINTENANCE AND MONITORING PLAN
EAST PLANT COVER SYSTEM

**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: K.K.	Reviewed By: Y.D.	Date: JULY 2018
Scale: 1:80	Project N°: 13968-00	Report N°: 419
		Drawing N°: figure A.1



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
- VAULT GROUNDWATER UNDERDRAIN SYSTEM SUMP
- LEAK DETECTION SYSTEM SUMP
- 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**

GHD

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

Project Manager: K.K.	Reviewed By: Y.D.	Date: JULY 2018
Scale: 1:80	Project N°: 13968-00	Report N°: 419
		Drawing N°: figure A.2

13968-00(419)GN-WA001 JUL 11, 2018

TABLE D.1

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

Date of Inspection: 6/5/2018

sunny

Inspector: mike curtis

86 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					
<u>Transect EV1</u>	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
	- EXPOSURE OF LINER	X			
	- EROSION	x			
	- LOCALIZED SETTLEMENT/SLUMPING	X			
	- PONDING OF WATER/DRAINAGE				
	- SIGNS OF BURROWING BY ANIMALS	X			
	- ROOTING OF TREES	x			
<u>Transect EV2</u>	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
	- EXPOSURE OF LINER	x			
	- EROSION	x			
	- LOCALIZED SETTLEMENT/SLUMPING	x			
	- PONDING OF WATER/DRAINAGE	x			
	- SIGNS OF BURROWING BY ANIMALS	X			
	- 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	
		- EXPOSURE OF LINER	X			
		- EROSION	X			
		- LOCALIZED SETTLEMENT/SLUMPING	X			
		- PONDING OF WATER/DRAINAGE	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
	Transect EV4	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPOSURE OF LINER	X			
		- EROSION	X		slight erosion	
		- LOCALIZED SETTLEMENT/SLUMPING	X			
		- PONDING OF WATER/DRAINAGE	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
	Transect EV5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPOSURE OF LINER	X			
		- EROSION	X		slight erosion	
		- LOCALIZED SETTLEMENT/SLUMPING	X			
		- PONDING OF WATER/DRAINAGE	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			

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)						
	<u>Transect EV6</u>	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPOSURE OF LINER	X			
		- EROSION	X			
		- LOCALIZED SETTLEMENT/SLUMPING	X			
		- PONDING OF WATER/DRAINAGE	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
	<u>Transect EV7</u>	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPOSURE OF LINER	X			
		- EROSION	X			
		- LOCALIZED SETTLEMENT/SLUMPING	X			
		- PONDING OF WATER/DRAINAGE	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
	<u>Transect EV8</u>	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPOSURE OF LINER	X			
		- EROSION	X			
		- LOCALIZED SETTLEMENT/SLUMPING	X			
		- PONDING OF WATER/DRAINAGE	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			

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	
		- EXPOSURE OF LINER	X			
		- EROSION	X			
		- LOCALIZED SETTLEMENT/SUMPING	X			
		- PONDING OF WATER/DRAINAGE	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
			Transect WV1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X	
- EXPOSURE OF LINER	X					
- EROSION	X					
- LOCALIZED SETTLEMENT/SUMPING	X					
- PONDING OF WATER/DRAINAGE	X					
- SIGNS OF BURROWING BY ANIMALS	X					
- ROOTING OF TREES	X					

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	x			
		- PRESENCE OF CRACKING OR DISCOLORATION	X			
	Transect EA2	- QUALITY OF ASPHALT COVER	x			
		- PRESENCE OF CRACKING OR DISCOLORATION	X			
	Transect WA1	- QUALITY OF ASPHALT COVER	x			
		- PRESENCE OF CRACKING OR DISCOLORATION	X			
ACCESS ROAD						
	ACCESS ROAD	- EROSION	X			
		- OBSTRUCTIONS/DEBRIS	x			
		- POTHOLES	X			
		- DAMAGE CAUSED BY VEHICULAR TRAFFIC	X			

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
		- EROSION	X		
		- OBSTRUCTIONS	X		
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X		
		- SIGNS OF BURROWING BY ANIMALS	X		
		- ROOTING OF TREES	X		
			Transect ES2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X
- EROSION	X				
- OBSTRUCTIONS	X				
- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X				
- SIGNS OF BURROWING BY ANIMALS	X				
- ROOTING OF TREES	X				
	Transect ES3			- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X
		- EROSION	X		
		- OBSTRUCTIONS	X		
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X		
		- SIGNS OF BURROWING BY ANIMALS	X		
		- ROOTING OF TREES	X		

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)						
	<u>Transect ES4</u>	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION	X			
		- OBSTRUCTIONS	X			
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
			<u>Transect ES5</u>	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X	
- EROSION	X					
- OBSTRUCTIONS	X					
- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X					
- SIGNS OF BURROWING BY ANIMALS	X					
- ROOTING OF TREES	X					
	<u>Transect ES6</u>			- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X	
		- EROSION	X		slight erosion	
		- OBSTRUCTIONS	X			
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			

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

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	X			
		- OBSTRUCTIONS	X			
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
	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	X			
		- OBSTRUCTIONS	X			
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
	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	X			
		- OBSTRUCTIONS	X			
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			

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	X			
		- OBSTRUCTIONS	X			
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X			
		- SIGNS OF BURROWING BY ANIMALS	X			
		- ROOTING OF TREES	X			
			Transect ES13	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X	
- EROSION	X					
- OBSTRUCTIONS	X					
- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	X					
- SIGNS OF BURROWING BY ANIMALS	X					
- ROOTING OF TREES	X					