East Plant Area TSCA Vault Annual Report Calendar Year 2022

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General Motors, LLC

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→ The Power of Commitment

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Terms and Acronyms

AFOS	above the floor of sump
ALR	Action Leakage Rate
AMSL	above mean sea level
AOI	Area of interest
Approvals	U.S. EPA and IDEM PCB Risk-Based Disposal Approvals
BCO	Bedford Casting Operations
CA	Corrective Action
CFR	Code of Federal Regulations
CRA	Conestoga-Rovers & Associates
EI	Environmental Indicator
EQ tank	equalization tank
Facility	GM GPS Bedford Facility in Bedford, Indiana
ft	foot/feet
GM	General Motors LLC
GUS	gravel underdrain system
GWTP	Groundwater Treatment Plant
HASP	Health and Safety Plan
IDEM	Indiana Department of Environmental Management
IM	Interim Measure
LCS	leachate collection system
LDS	leak detection system
mg/L	milligram per liter
NPDES	National Pollutant Discharge Elimination System
PCB	Polychlorinated biphenyl
PCP	Post-Closure Plan
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
Report	East Plant Area Vault Annual Monitoring Report Covering the Calendar Year of 2022
SSC	Site Source Control
TSCA	Toxic Substance Control Act
U.S. EPA	United States Environmental Protection Agency
Vault	East Plant Area TSCA landfill vault

1. Introduction

This Annual Monitoring Report (Report) summarizes data from calendar year 2022 for post-closure monitoring activities for the Toxic Substances Control Act (TSCA) landfill vault (Vault), located in the East Plant Area of the General Motors LLC (GM) Bedford Casting Operations (BCO) Facility (Facility), in Lawrence County, Bedford, Indiana. This Report has been prepared by GHD on behalf of GM in accordance with the Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent effective August 14, 2014 (United States Environmental Protection Agency [U.S. EPA] Docket No. RCRA-05-2014-0011), and the East Plant Area Vault Post-Closure Plan (PCP) (Conestoga-Rovers & Associates [CRA], February 3, 2012; as amended by Revision 1, August 25, 2016). The Vault was constructed as part of the RCRA Corrective Action (CA) activities at the Facility. U.S. EPA and Indiana Department of Environmental Management (IDEM) agency approvals (Approvals) for the Vault were effective October 18, 2006, and were issued pursuant to 40 Code of Federal Regulations (CFR) § 761.61 (c) for the risk-based disposal of polychlorinated biphenyl (PCB) contaminated waste in the Vault. The Vault was constructed as a component of the East Plant Area Interim Measure (IM) during RCRA CA activities initiated under the Performance Based CA Agreement (effective March 20, 2001, and amended October 1, 2002, March 29, 2007, and May 9, 2008) for the Facility. A RCRA administrative order between U.S. EPA and GM was executed on August 4, 2014 (Administrative Order on Consent (AOC) EPA Docket No. RCRA-05-2014-0011) and replaces the Performance-Based CA Agreement, which has been terminated.

Final closure of the Vault occurred on March 27, 2012. The PCP was submitted to U.S. EPA on February 3, 2012 and amended on August 25, 2016, outlining the post-closure monitoring of the Vault which includes documentation of the quantity of liquid collected from the leachate collection system (LCS), leak detection system (LDS), and gravel underdrain system (GUS); the water elevations in these systems; analytical results from samples collected from these systems; and effluent quantity/quality from the on-site groundwater treatment plant (GWTP). The PCP prescribes a reduced frequency of record keeping procedures to, at a minimum, once per month. Additional post-closure monitoring required by the PCP includes annual inspections of the Vault cover system. Consistent with the PCP and the RCRA AOC, the next annual report covering post-closure monitoring data for the 2023 calendar year will be submitted to U.S. EPA on or before July 15, 2024.

Daily operation and maintenance activities associated with the GWTP, LCS, LDS, GUS and wet wells are conducted by Treatment Technologies under the direction of GM.

1.1 Purpose and Organization of Report

This Report summarizes the 2022 Vault monitoring requirements set out in the PCP and the Approvals by U.S. EPA and IDEM.

This Report is organized as follows:

Section 2.0 – Summary of Record Keeping Log

This section provides a summary of the quantity of liquid collected in 2022 from the LCS and LDS sumps and discharged from these systems to the GWTP for treatment; along with water elevations in the GUS, over the primary liner (LCS), and over the secondary liner (LDS).

Section 3.0 – Analytical Results

This section provides analytical results for 2022 from the monitoring of the LCS, LDS, and combined effluent from the GWTP, and groundwater monitoring wells near the Vault.

Section 4.0 – Leachate and Leak Detection Water Disposal

This section provides details related to the volume, PCB concentration, and disposal for leachate and leak detection water with a PCB concentration equal to or greater than (≥) 1 part per million (ppm), if any.

Section 5.0 – Summary and Review of Water Elevations

This section provides a summary and review of the water elevations and depth over the primary liner (LCS), the secondary liner (LDS), and in the GUS.

Section 6.0 – Issues Encountered and Rectification Actions

This section identifies issues and/or problems encountered related to the Vault (i.e., performance of monitoring systems, analytical results, physical characteristics, etc.) and actions taken to rectify them.

Section 7.0 – Spill Cleanup Reports

This section identifies any PCB spill cleanups as established in accordance with the Site Health and Safety Plan (HASP).

Section 8.0 – Financial Assurance

This section discusses financial assurance for the Vault.

Section 9.0 – References

This section presents references cited in this Report.

2. Summary of Record Keeping Log

The following information was recorded, as required by the PCP:

1. The quantity of liquid collected from the LCS.
2. The quantity of liquid collected from the LDS.
3. The quantity of liquid collected from the GUS.
4. The elevation of liquid over the primary liner, the secondary liner and in the GUS
5. The amount of water (liquid) discharged from the LCS, LDS, and GUS to the GWTP, and the respective PCB concentration.
6. The Vault inspection logs and maintenance activities.

2.1 Summary of LCS, LDS, and GUS Sump Monitoring Logs

In 2022, the water level in the GUS system was recorded daily by the automated system. During 2022, water levels in the LDS and LCS systems were manually measured and recorded on a weekly basis. Summaries of the sump monitoring logs for the LCS, LDS, and GUS including the quantity of liquid pumped from each of the Vault collection systems are presented in Tables 2.1, 2.2, and 2.3, respectively. Field logs for the GUS are presented in Appendix A. In 2022, field data for the LCS and LDS were directly entered into an electronic form (see Tables 2.1 and 2.2). Electronic data collection forms for the GUS were developed in late 2022 and will be used in the future, eliminating hand-written data entry. In accordance with the Approvals, water pumped from the LCS and LDS is treated and managed in compliance with the National Pollutant Discharge Elimination System (NPDES) permit (NPDES Permit No. IN0064424) for the Site.

Table 2.4 presents a summary of the water elevations to allow for direct comparison between the various layers of the Vault liner system (listed in order from top to bottom: LCS, lowest point of the primary liner system, LDS, lowest point of the secondary liner system, and GUS). Table 2.5 presents a summary of the monthly maximum water elevation in

each of the sumps. Groundwater elevation at the GUS sump remained stable during 2022, however, the static elevation is above the operational level, due to failure of the original GUS pump and subsequent temporary pumps.

2.2 Summary of Water Treated in the Groundwater Treatment Plant

Water removed from the Vault sumps is directed to the GWTP, which treats PCB impacted water removed from the Vault Sumps and the Site Source Control (SSC) wet wells (including Wet Wells #1 through #4). Approximately 126,114 gallons of water was removed from the LCS and 1,028 gallons from the LDS during 2022. There was no water removed from the GUS during the reporting period. The GWTP discharge at Outfall 004 is sampled monthly under the NPDES permit (NPDES Permit No. IN0064424). Data collected during the 2022 calendar year were reported in accordance with the NPDES permit.

The volume of water discharged from the GWTP is recorded daily. A summary of the total monthly volume and daily average of treated water in the GWTP for 2022 is provided in Table 2.6. Note that the GWTP treats collected water from the Vault and other remediation water sources.

2.3 Summary of the Vault Inspection Log and Maintenance Activities

Maintenance and inspection activities were performed at the Vault during the 2022 calendar year.

GHD completed inspection of the Vault Cover System on a semi-annual basis, concurrent with inspection of the West Plant Area and East Plant Area Cover Systems. These inspections were completed on May 24, 2022, and November 28, 2022. The findings of these inspections were previously reported in the semi-annual progress reports. The inspection forms are provided in Appendix B. A summary of the findings related to the Vault Cover System in 2022 is as follows:

– There were no significant findings (i.e., no issues that pose a risk to the integrity of the cover) for the Vault Cover System. Copies of the Cover System inspection forms can be found in Appendix B – Cover System Inspection.
– The cover system was inspected for the presence of animal burrows. During the May and November 2022 inspections, animal burrows were not identified.
– Tree and brush saplings were identified during both May and November inspections. GHD retained 4 Seasons (same subcontractor who mows the cover system) to remove the saplings. Sapling removal began in May 2023.
– Minor erosion and potholes were identified along the gravel access road during both the May and November inspections. GM continues to maintain the access road to keep any erosion under control.

Details of the maintenance issues encountered with the LCS, LDS and GUS pumps, are discussed in Section 6.

The magnetic flow meter (mag meter) identified as FIT-Vault (serial number F1095B16000), measured the combined volume of water being pumped from the Vault sump systems (LCS, LDS, and GUS) via the permanent forcemain to the equalization tank (EQ tank), before being treated in the GWTP. The mag meter calibration is conducted biennially. The calibration of the mag meter was last conducted on August 29, 2022. The next calibration will be conducted in the 2024 calendar year.

3. Analytical Results

Sampling methods and analytical procedures were performed in compliance with 40 CFR Part 136, as amended in 41 FR 52779 on December 1, 1976.

3.1 Groundwater Monitoring Analytical Results

Groundwater sampling specific to the Vault is conducted at locations 9-4 and CH-20. The closest well in proximity of the Vault is well 9-4. The GUS sump is no longer monitored as part of this program due to inaccessibility. In accordance with the September 18, 2014, responses to U.S. EPA's March 18, 2014, comments on the PCP, sampling at these locations is coordinated with the biannual Environmental Indicator (EI) CA750 monitoring program. The theoretical leakage action rate of the LDS did not significantly change in 2022 (see Section 5.2 for further discussion), suggesting there was no release of leachate into the groundwater system or groundwater flow into the LDS. In addition, there is no evidence of a release from the Vault to the groundwater table based on changes in elevations in the LCS, LDS, and GUS sumps (Table 2.4). Groundwater monitoring (static water levels and/or sampling) locations under the EI CA750 in the vicinity of the Vault are shown on Figure 3.1.

Static groundwater levels are measured quarterly, and groundwater samples are collected during the second and fourth quarters. The first EI CA750 groundwater sampling event of 2022, was conducted on May 23 through 26, 2022. The second semi-annual sampling event of 2022 was conducted on November 28 through December 1, 2022.

Groundwater samples are collected at the perimeter of the Facility on a semi-annual basis under the EI CA750 monitoring program. EI CA750 groundwater monitoring results for the May and November 2022 events were previously reported under separate cover and are summarized in Tables 3.1 and 3.2, respectively. Figures 3.2 and 3.3 present databoxes which summarize the groundwater and surface water analytical results for the PCBs sampling locations in the EI CA750 monitoring program for the May and November semi-annual sampling events of 2022, respectively.

Locations 9-4 and CH-20 are downgradient of the Vault 2022. During the EI CA750 May 2022 sampling event total PCBs were detected at 9-4 at an estimated concentration of 0.15 milligram per liter (mg/L). During the December sampling event, PCBs were detected at 9-4 and CH-20 at estimated concentrations of 6.8 mg/L and 0.82 mg/L, respectively. PCBs were detected at other wells within the Facility boundary related to historical sources and not hydraulically connected (downgradient of) to the Vault (e.g., wells near Area of Interest 8 [AOI 8]). The elevated detection of total PCBs in 9-4 during the December 2022 sampling event is attributed to inadvertent agitation of the water and sediment within the well when removing and replacing the dedicated pump. Subsequent sampling events showed lower total PCB concentrations at 9-4, consistent with historical sampling events.

Sample Quality

The analytical data collected during the first and second half of 2022 EI CA750 sampling events were within the acceptable qualifications, as noted in the Memorandum regarding Full Validation of the Analytical Results previously submitted with the EI CA750 results (GHD, 2022a; GHD, 2023).

3.2 Leachate and Leak Detection Water Monitoring Analytical Results

The PCP requires water from the LCS and LDS be sampled at least monthly for PCBs, contingent on the presence of sufficient water to collect a sample. Treatment Technologies collected samples from both the LCS and LDS monthly starting in July 2022. Section 6 discusses the omission of monthly samples from January 2022 through June 2022. LCS water samples were analyzed for PCBs and volatile organic compounds. LDS water samples were analyzed for PCBs. Analytical results are presented in Table 3.3.

3.3 GUS Analytical Results

The GUS sump sampling has been part of the bi-annual EI CA750 monitoring program since 2015, pursuant to U.S. EPA request, to assess ongoing conditions. Due to upgradient contamination still present in the groundwater, analytical detections of PCBs in the water from the GUS sump do not reflect any leachate release or changed conditions in the Vault. With respect to monitoring potential environmental impacts, continued monitoring levels of the

LCS, LDS, and the downgradient monitoring as conducted during the EI CA750 is the best way to monitor for downgradient changes to groundwater quality.

There was no sampling completed at the GUS in 2022. The temporary pump placed in the GUS has failed and attempts to remove and replace the pump have been unsuccessful and sampling with a bailer was not possible due to space restrictions within the sump and pump casings preventing a bailer from being lowered to the GUS water level.

3.4 Water Treatment Facility Analytical Results

Water removed from the LCS and LDS are directed via permanent forcemain to the GWTP's equalization tank. The Vault water is combined with groundwater from the Site Source Control (SSC) Wet Wells #1 through #3 and the Pilot Perimeter Groundwater Collection Trench Wet Well #4 prior to treatment and discharge under NPDES Permit No. IN0064424.

The GWTP was sampled monthly in accordance with the NPDES permit. Effluent results for total PCBs were non-detect during the reporting year. Analytical results for 2022 monthly Outfall 004 discharge sampling events are presented in Table 3.4.

4. Leachate and Leak Detection Water Disposal

Pursuant to U.S. EPA's Risk-Based Approval to Dispose of PCBs dated October 18, 2006; Conditions of Approval; Leachate and Leak Detection System Water Monitoring and Disposal, Section 10.b. – *"Leachate and leak detection water with PCB concentrations from 1 ppm to, but not including, 50 ppm is TSCA reportable material that must be managed in compliance with the … NPDES Permit*." There were no analytical results with ≥1 mg/L (ppm) PCBs for water samples collected from the LCS or LDS during the calendar year and no evidence of hydraulic connection between the layers. Pumped leachate and leak detection liquid were treated by the GWTP.

5. Summary and Review of Water Elevations

The water level above the primary liner (i.e., in the LCS), the secondary liner (i.e., in the LDS) and GUS continued to be generally measured on a weekly basis throughout 2022. Maximum daily water levels recorded at the GUS sump within the 24-hour day are automatically stored at the PLC in the WTP and retrieved by the operator once per week. Tables 2.1 and 2.2 show water was removed from the LCS (126,114 gallons) and LDS (1,028 gallons) during the reporting period, respectively. Table 2.3 shows the transducer readings for the GUS, but no groundwater was removed. Table 2.4 presents a summary of the water elevations in each of the sumps. Summaries of the maximum monthly water elevations in each of the systems are presented in Table 2.5. Copies of the field logs collected from the GUS sump are provided in Appendix A. Field data for the LCS and LDS are entered directly into electronic forms which are provided as Tables 2.1 and 2.2. Electronic forms have been created for the GUS, which will be implemented for the 2023 data collection.

Pumping operations began in 2006, with a significant reduction in the average monthly volume of water removed through 2009. Since 2010, the average monthly volume of water removed has continued to decline, but at a lessening rate. A summary of the average monthly volume of water removed from the LCS and the LDS since 2010 is presented on Figure 5.1 (volume presented is from both the calculation method as used up to 2014 and based on flow meter readings for the LDS to allow for direct comparison between calculation methods and historical monitoring data). A temporary increase in the volume of leachate collected from the LCS was observed July-August 2022. This is discussed in greater detail in Section 6.

5.1 Leachate Collection System

Manual water level measurements were generally collected on a weekly basis (in excess of the monthly monitoring required by the PCP) in 2022. The automated system records the maximum level and total pumped quantities on a daily basis.

During 2022 the water elevation in the LCS was maintained within the operating limits set out in the PCP. The water levels recorded by the transducers are transmitted through the wireless modem to the PLC. It is these water level readings (converted to elevation) that trigger the pump in the LCS to turn 'on' (set point is 674 feet above mean sea level [AMSL]). Water level readings recorded at the GWTP included spurious negative water levels (note weekly water level readings are collected manually). The negative water level readings recorded at the GWTP were likely due to the water level having been below the sensor's 'zero' range. The transducer was replaced in June 2023, which has corrected this error. During 2022, manual water levels were monitored to determine if the LCS required pumping. During 2022, the depth of water in the LCS was maintained at less than 1-foot above floor of sump (AFOS) (bottom of sump at 671.00 foot [ft] AMSL), with the maximum depth of 675.13 ft AFOS (equivalent water surface depth of 65.70 ft from the top of the sump as manually measured) on July 29, 2022.

The total amount of water removed from the LCS in 2022 was estimated to be 126,114 gallons, which is greater than the estimated 10,475 gallons pumped in 2021. The volume of leachate collected in 2021 and 2022 includes what is believed to be erroneous readings on the PLC, equating to 57,425 gallons in 2022 and the entire volume (10,475 gallons) recorded in 2021. However, the larger of the two amounts are being carried forward as a conservative estimate of leachate volume removed.

In July and August 2022, a larger than normal volume of leachate was removed from the system. This temporary surge is discussed in Section 6.

5.2 Leak Detection System

During May, June and July 2022, the LDS water level slightly exceeded the pumping trigger (pumping is performed manually) but did not exceed the water elevation over the primary liner. The operator did not recognize the trigger for pumping the LDS had been met. Once recognized, water in the LDS was removed. Electronic field forms for the Vault sumps include a visual indication (excel data cell changes color) when the pumping trigger is met.

Pumping at the LDS is conducted via a portable pump discharging through overland hose that is connected to the hard piping within the LCS manhole (for direct discharge to the EQ tank via forcemain). The total amount of water removed from the LDS during the 2022 calendar year was 1,028 gallons based on flow meter readings.

During 2022, the depth of water in the LDS was maintained between 0.40 ft and 1.98 ft AFOS (bottom of sump at 668.49 ft AMSL or 72.65 ft below the top of the sump), with the maximum depth of 1.98 ft AFOS (equivalent water surface elevation of 669.69 ft) measured on July 5, 2022.

In assessing geomembrane performance, leakage through the liner is evaluated as an indicator of potential failure of the liner system. Leakage through a liner system can occur through seams and puncture holes from handling and placement. These are eliminated through a robust quality control and quality assurance monitoring and testing program conducted during liner installation. Additional leakage through the liner can occur through pinholes that are inadvertently introduced during the manufacturing process and not visible to the eye.

In assessing the potential for leakage through the primary bottom liner system into the LDS, GHD takes records indicating the amount of water collected within the LDS system and compares that volume to a theoretical action leakage rate (ALR) measured in units of gallons/acre/day (gpad). The volume of water removed (converted to an average flow rate in gpad) should ideally be less than the ALR. The data are used in conjunction with other data to assess the overall performance of the Vault containment system.

The ALR was initially calculated in the Post-Closure Plan (GHD, 25 August 2016), as 32,000 gallons/acre/day (gpad).

As the Vault containment system matures, USEPA suggested that other calculations that could provide additional information as to the potential indicator of a liner failure. In response to their review of the calendar year 2020 Vault Report U.S. EPA requested that GHD assess the TSCA theoretical Action Leakage Rate (ALR) for the landfill relative to the actual rate as an additional line of evidence for the integrity of the Vault liner system. GHD reviewed U.S. EPA's January 1992 Action Leakage Rates for Leak Detection Systems (EPA 530-R-92-004) and agrees that the method presented in the document would provide additional information for on-going liner performance evaluation.

The ALR was calculated as shown on Page 11 of the 1992 document using the equation below:

$$Q = k * h * \tan(\alpha) * B_{\text{avg}}$$

k=1 cm/sec (hydraulic conductivity of INDOT No. 8 stone used in the gravel envelope)

α=0.0441 (calculated from the elevation difference between the LDS and LCS sumps and the distance between the two along to gravel base, 1.5 ft/34.033072 ft)

D=1 foot (average thickness of the gravel envelope within the LDS)

B_{avg}=20 feet (D/ sin(α))

Based on the above conditions, the ALR is calculated at 18,709 gpad.

The average daily flow rate for 2022 was calculated as the total volume of water removed, divided by the number of days since the previous pumping, divided by the Vault footprint (7 acres). In 2022, 1,028 gallons of water was pumped from July through December 2022 from the LDS. Prior to the 2022 reporting period, the LDS was last pumped on July 12, 2021. With the exception of water removed in July 2022, water removed from the LDS was conducted for sample collection purposes, rather than based on the exceedance of the operating level. The average daily flow rate was calculated for each month that pumping occurred. The actual action leakage rates were calculated as follows:

Date of Removal	Volume Removed (gallons)	Days Since Last Pumped	Actual Action Leakage Rate (gpad)
July 5, 2022	370.1	357	0.15
August 3, 2022	242.2	28	1.24
September 8, 2022	152.1	35	0.62
October 11, 2022	109.8	32	0.49
November 8, 2022	88.8	27	0.47
December 6, 2022	65	27	0.35

It is concluded that the ALR using both the original and alternate method outlined above, is higher (including a factor of safety of 2 as suggested by the U.S. EPA in their guidance method) than the quantity of liquid removed from the LDS during 2022, which is suggestive of a well-performing liner system.

5.3 Gravel Underdrain System

The GUS was installed as part of the overall TSCA Vault construction in order to maintain the stability of the liner system during active operations (e.g., construction and filling of the Vault) by mitigating excessive water pressure action on the bottom liner. Since active filling operations ceased over 10 years ago, the original purpose of the GUS operation is no longer necessary.

The automated system for the GUS is designed to operate between water depths of 2.5 ft and 4.33 ft AFOS (bottom of sump at 662.18 ft AMSL). At the maximum end of the range, the water level is one foot lower than the lowest point (667.5 ft AMSL) of the secondary liner. Water level measurements were collected by the PLC on a daily basis. The groundwater elevation at the GUS sump remained stable during 2022.

The GUS sump is no longer available as a sampling point due to obstructions and inoperable pumps within the sump. See Section 6 for further information.

6. Issues Encountered and Remedial Actions

The following issues were identified during the reporting period:

LCS and LDS Monthly Sampling

A part of a project task review, it was discovered that attempts to collect samples from the LCS and LDS were not occurring at the frequency required under the PCP. According to the PCP, 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 in 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 by either GHD or GM 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 was able 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. Once discovered, the GWTP operator was instructed to resume monthly LCS and LDS sampling frequency, subject to a sufficient water level to collect a sample.

Electronic field forms for the LCS and LDS developed as a corrective action in response to the issue includes a specific data entry field for sample collection with a visual indication (excel data cell changes color) to alert the operator if a monthly sample has or hasn't been collected for the period.

Leachate Volume Increase

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 there 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.

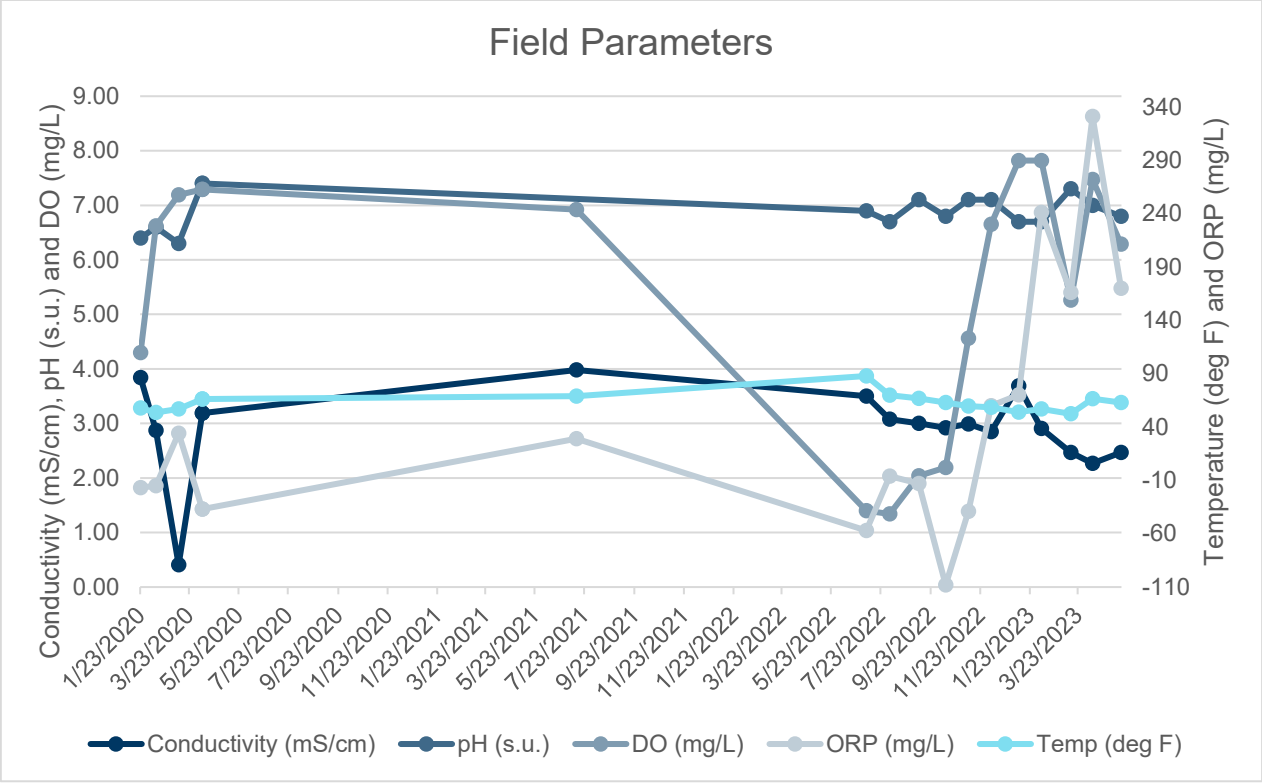
Although this higher inflow of water to the system is somewhat unexpected, it is likely a normal redistribution of water within the Vault. Additional monitoring was conducted to verify this theory. A summary of the unexpected leachate volumes was provided to U.S. EPA in a Technical Memorandum dated October 21, 2022 (GHD, 2022b) and is provided in Appendix C.

Subsequent to the October 2022 memo, GHD evaluated field parameters to see if the data provided further insights to the source of increased water as being from an internal source (normal re-distribution of liquid fraction of the disposed soil), external source (through liner failure in the cover system or bottom liner system), or transformation (biological, physical, or chemical) process.

Field parameters for pH, temperature, conductivity, dissolved oxygen (DO) and oxygen reduction potential (ORP) are recorded at the time of leachate sample collection. Field instruments are calibrated prior to data collection by a qualified individual. Field data collected in July and August (prior to and just following the temporary increase in

leachate volume) were compared to recent data collected both before and after the event. The data set evaluated is provided in the table and graph below.

Date	Conductivity (mS/cm)	pH (s.u.)	DO (mg/L)	ORP (mg/L)	Temp (deg F)
1/23/2020	3.84	6.40	4.30	-17	57.95
2/11/2020	2.87	6.60	6.62	-15	53.50
3/10/2020	0.41	6.30	7.19	34	57.00
4/8/2020	3.19	7.40	7.29	-37	66.10
4/8/2020	3.19	7.40	7.29	-37	66.10
7/13/2021	3.98		6.92	29	68.90
7/5/2022	3.50	6.90	1.40	-57	87.80
8/3/2022	3.08	6.70	1.34	-6	69.70
9/8/2022	3.00	7.10	2.04	-13	66.92
10/11/2022	2.92	6.80	2.19	-108	63.00
11/8/2022	2.99	7.10	4.56	-39	59.54
12/6/2022	2.85	7.10	6.65	60	58.46
1/9/2023	3.69	6.70	7.82	70	53.78
2/6/2023	2.91	6.70	7.82	241	57.02
3/14/2023	2.47	7.30	5.26	166	52.34
4/10/2023	2.27	7.00	7.47	331	66.56
5/15/2023	2.47	6.80	6.29	170	62.96



On July 5, 2022, the operator removed 4,452 gallons of leachate from the system and conducted the monthly sampling. The temperature from the July 2022 sample was unusually high as compared to past and future temperatures. GHD does not believe the ambient air temperature in early July contributed to the increase in temperature. GHD does not believe the temperature reading was false because of the quality control procedures implemented during sample collection.

GHD believes the temperature reading from July 5 to be accurate and evaluated the potential causes for an increased temperature and how that could have impacted the unusual increase in leachate volume during July and August 2022. GHD believes the temperature increase may be due to the generation of heat through an isolated, exothermic reaction occurring within the Vault. This exothermic reaction occurs when an anhydrous material comes in contact with water/liquid. The heat generated causes the temperature of the soil and liquid in the vicinity of the reaction to increase. If this exothermic reaction is the cause for the elevated leachate temperature seen in July 2022, unspent pockets of bed ash (mixed with soil) within the Vault may be the cause. Bed ash was used as a drying agent for material that was placed in the Vault. Hydration of the bed ash creates an exothermic chemical reaction which releases heat. The reaction could alter the mass (and subsequent volume occupied by the mass) and allow a shift of surrounding solid wastes, subsequently opening additional preferential pathways to be created for the release of stored pockets of leachate into the collection system.

This theory is further supported by results from the field measurements of DO, ORP and conductivity. pH does not appear to be affected.

During the chemical reaction, ions from the bed ash are released into the water/liquid, increasing the salinity and thus increasing the conductivity. In the data set above, the conductivity does not appear to be significantly different from prior readings. However, the conductivity is also a function of the volume of liquid. Given the volume of water at the time of sample collection has increased from volumes during previous readings, the increase in conductivity would not appear dramatic.

The elevated temperature readings generally correlate with low DO. As the data above indicates during the July 2022 sampling event, the DO dropped significantly while the associated temperature increased. This further points to an internal, exothermic reaction occurring within the Vault. In subsequent readings, the DO has recovered to normal level, coinciding with a return to normal leachate temperature levels.

A correlation also exists between ORP and oxygen. Generally, high ORP correlates with high oxygen. During exothermic reaction, more OH^- ions are released into solution than normal, thus affecting the concentration of available oxygen in the solution. The fluctuations seen in DO and ORP is a function of the OH^- passing through the system and oxygen is returning to normal levels.

There may be other pockets of unspent bed ash/soil within the Vault. These pockets may not be exposed to water thus avoiding chemical reactions. Some of these micro-reactions may go undetected. These reactions are likely to be short term in duration and have no impact on liner stability or the performance of the Vault.

7. Spill Cleanup Reports

There were no on-Facility PCB spills that occurred in 2022. There were no spills on public roads.

8. Financial Assurance

As required by the August 2014 RCRA AOC, a surety bond was obtained by GM in 2014 to provide financial assurance for the remaining Corrective Action tasks, including operation and maintenance related to the Vault, until the approval of the Corrective Measures Proposal (CMP); at which time costs to complete Corrective Action will be

re-evaluated based on the requirements of the CMP. As required under the AOC, the financial assurance cost estimate is updated, at a minimum, annually. GM provided for financial assurance for Fiscal Year 2022 (FY2022) and submitted the financial assurance cost estimate for FY2023 to U.S. EPA and IDEM on November 14, 2022, with a revised version, based on U.S. EPA comments submitted on January 9, 2023, GM submitted the financial assurance demonstration of the FY2023 financial assurance to U.S. EPA on March 23, 2023. The surety bond in the amount of the approved financial assurance cost estimate remains in effect.

9. References

CRA. 2012. “Post Closure Plan, Bedford Plant Vault, GM CETC Bedford Facility, 105 GM Drive, Bedford, Indiana.”

CRA. 2016. “Post Closure Plan, Bedford Plant Vault, GM CETC Bedford Facility, 105 GM Drive, Bedford, Indiana.”

GHD. Memorandum to U.S. EPA. 2022a. “EI CA750 Sampling Results First Half 2022.” September 22.

GHD, Memorandum to U.S. EPA. 2022b. “Summary of Unexpected Leachate Volumes.” October 21.

GHD, Memorandum to U.S. EPA. 2023. “EI CA750 Sampling Results First Half 2022.” April 14

Tables

2022 Summary of Leachae Collection System Log
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Bedford, Indiana

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1/1/22	-15.3	error			309	309	Sampled		
1/2/22	-15.3	error			393	702	Sampled		
1/3/22	-15.3	error	69.06	671.77	348	1050	Sampled		
1/4/22	-15.3	error			288	1338	Sampled		
1/5/22	-15.3	error			300	1638	Sampled		
1/6/22	-15.3	error			329	1967	Sampled		
1/7/22	-15.3	error			321	2288	Sampled		
1/8/22	-15.3	error			325	2613	Sampled		
1/9/22	-15.3	error			252	2865	Sampled		
1/10/22	-15.3	error	69.9	670.93	425	3290	Sampled		
1/11/22	-15.3	error			205	3495	Sampled		
1/12/22	-15.3	error			216	3711	Sampled		
1/13/22	-15.3	error			265	3976	Sampled		
1/14/22	-15.3	error			298	4274	Sampled		
1/15/22	-15.3	error			291	4565	Sampled		
1/16/22	-15.3	error			299	4864	Sampled		
1/17/22	-15.3	error	68.92	671.91	298	5162	Sampled		
1/18/22	-15.3	error			293	5455	Sampled		
1/19/22	-15.3	error			287	5742	Sampled		
1/20/22	-15.2	error			279	6021	Sampled		
1/21/22	-15.2	error			254	6275	Sampled		
1/22/22	-15.3	error			253	6528	Sampled		
1/23/22	-15.3	error			259	6787	Sampled		
1/24/22	-15.3	error			258	7045	Sampled		
1/25/22	-15.3	error	68.92	671.91	256	7301	Sampled		
1/26/22	-15.3	error			222	7523	Sampled		
1/27/22	-15.3	error			224	7747	Sampled		
1/28/22	-15.3	error			229	7976	Sampled		
1/29/22	-15.3	error			215	8191	Sampled		
1/30/22	-15.3	error			228	8419	Sampled		
1/31/22	-15.3	error			222	8641	Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 671.00 *Total depth of sump manhole (feet): 69.83*

Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
Pump automatically starts based on transducer reading.

(a) **Water level not to rise above 36 inches deep** (equates to a water level of 674.00 ft AMSL or 66.83 ft below top of the sump). Pumping must be initiated if the water level is above 674.00 ft AMSL. Pumping automatically initiated based on transducer readings. If does not occur, confirm SCADA water level measurements by taking manual reading. If both transducer and manual readings (converted to elevation) indicate pumping is required but does not automatically begin, manually pump LCS. Troubleshoot lack of automatic pumping.

(b) **Depth to water level should not be less than 66.83 ft below the top of sump** (equates to a water level of 674.00 ft AMSL or water depth of 36 inches). Initiate pumping if the water level is above 674.00 ft AMSL. Compare manual water level measurement against transducer reading. Troubleshoot discrepencies.

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2/1/22	-15.3	error			224	224	Sampled		
2/2/22	-15.3	error	68.89	671.94	222	446	Sampled		
2/3/22	-15.3	error			389	835	Sampled		
2/4/22	-15.3	error			244	1079	Sampled		
2/5/22	-15.3	error			259	1338	Sampled		
2/6/22	-15.3	error			281	1619	Sampled		
2/7/22	-15.3	error	68.87	671.96	280	1899	Sampled		
2/8/22	-15.3	error			289	2188	Sampled		
2/9/22	-15.3	error			290	2478	Sampled		
2/10/22	-15.3	error			322	2800	Sampled		
2/11/22	-15.3	error			209	3009	Sampled		
2/12/22	-15.3	error			202	3211	Sampled		
2/13/22	-15.3	error			248	3459	Sampled		
2/14/22	-15.3	error	68.84	671.99	257	3716	Sampled		
2/15/22	-15.3	error			253	3969	Sampled		
2/16/22	-15.3	error			282	4251	Sampled		
2/17/22	-15.3	error			151	4402	Sampled		
2/18/22	-15.2	error			309	4711	Sampled		
2/19/22	-15.3	error			395	5106	Sampled		
2/20/22	-15.3	error			267	5373	Sampled		
2/21/22	-15.3	error	68.81	672.02	198	5571	Sampled		
2/22/22	-15.3	error			265	5836	Sampled		
2/23/22	-15.3	error			376	6212	Sampled		
2/24/22	-15.3	error			328	6540	Sampled		
2/25/22	-15.3	error			312	6852	Sampled		
2/26/22	-15.3	error			347	7199	Sampled		
2/27/22	-15.3	error			225	7424	Sampled		
2/28/22	-15.3	error	68.79	672.04	291	7715	Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 671.00 *Total depth of sump manhole (feet): 69.83*

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(b) **Depth to water level should not be less than 66.83 ft below the top of sump** (equates to a water level of 674.00 ft AMSL or water depth of 36 inches). Initiate pumping if the water level is above 674.00 ft AMSL. Compare manual water level measurement against transducer reading. Troubleshoot discrepencies.

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3/1/22	-15.3	error			332	332	Sampled		
3/2/22	-15.3	error			347	679	Sampled		
3/3/22	-15.3	error			354	1033	Sampled		
3/4/22	-15.3	error			347	1380	Sampled		
3/5/22	-15.3	error			357	1737	Sampled		
3/6/22	-15.3	error			349	2086	Sampled		
3/7/22	-15.3	error	68.81	672.02	258	2344	Sampled		
3/8/22	-15.3	error			331	2675	Sampled		
3/9/22	-15.3	error			377	3052	Sampled		
3/10/22	-15.3	error			419	3471	Sampled		
3/11/22	-15.3	error			424	3895	Sampled		
3/12/22	-15.3	error			415	4310	Sampled		
3/13/22	-15.3	error			389	4699	Sampled		
3/14/22	-15.3	error	68.83	672.00	382	5081	Sampled		
3/15/22	-15.3	error			376	5457	Sampled		
3/16/22	-15.3	error			368	5825	Sampled		
3/17/22	-15.3	error			355	6180	Sampled		
3/18/22	-15.3	error			386	6566	Sampled		
3/19/22	-15.3	error			427	6993	Sampled		
3/20/22	-15.3	error			353	7346	Sampled		
3/21/22	-15.3	error	68.83	672.00	347	7693	Sampled		
3/22/22	-15.3	error			250	7943	Sampled		
3/23/22	-15.3	error			326	8269	Sampled		
3/24/22	-15.3	error			352	8621	Sampled		
3/25/22	-15.3	error			392	9013	Sampled		
3/26/22	-15.3	error			413	9426	Sampled		
3/27/22	-15.3	error			403	9829	Sampled		
3/28/22	-15.3	error	68.75	672.08	388	10217	Sampled		
3/29/22	-15.3	error			379	10596	Sampled		
3/30/22	-15.3	error			374	10970	Sampled		
3/31/22	-15.3	error			405	11375	Sampled		

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4/1/22	-15.3	error			426	426	Sampled		
4/2/22	-15.3	error			416	842	Sampled		
4/3/22	-15.3	error			386	1228	Sampled		
4/4/22	-15.3	error	68.98	671.85	363	1591	Sampled		
4/5/22	-15.3	error			390	1981	Sampled		
4/6/22	-15.3	error			405	2386	Sampled		
4/7/22	-15.3	error			421	2807	Sampled		
4/8/22	-15.3	error			404	3211	Sampled		
4/9/22	-15.3	error			379	3590	Sampled		
4/10/22	-15.3	error			354	3944	Sampled		
4/11/22	-15.3	error	69.2	671.63	385	4329	Sampled		
4/12/22	-15.3	error			326	4655	Sampled		
4/13/22	-15.3	error			6613	11268	Sampled		
4/14/22	-15.3	error			622	11890	Sampled		
4/15/22	-15.3	error			162	12052	Sampled		
4/16/22	-15.3	error			230	12282	Sampled		
4/17/22	-15.3	error			272	12554	Sampled		
4/18/22	-15.3	error	69.45	671.38	282	12836	Sampled		
4/19/22	-15.3	error			304	13140	Sampled		
4/20/22	-15.3	error			273	13413	Sampled		
4/21/22	-15.3	error			290	13703	Sampled		
4/22/22	-15.3	error			269	13972	Sampled		
4/23/22	-15.3	error			258	14230	Sampled		
4/24/22	-15.4	error			258	14488	Sampled		
4/25/22	-15.4	error	69.44	671.39	233	14721	Sampled		
4/26/22	-15.3	error			279	15000	Sampled		
4/27/22	-15.3	error			280	15280	Sampled		
4/28/22	-15.3	error			267	15547	Sampled		
4/29/22	-15.3	error			255	15802	Sampled		
4/30/22	-15.4	error			252	16054	Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83*
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5/1/22	-15.4	error			268	268	Sampled		
5/2/22	-15.4	error	69.39	671.44	247	515	Sampled		
5/3/22	-15.3	error			237	752	Sampled		
5/4/22	-15.3	error			288	1040	Sampled		
5/5/22	-15.3	error			292	1332	Sampled		
5/6/22	-15.3	error			272	1604	Sampled		
5/7/22	-15.3	error			261	1865	Sampled		
5/8/22	-15.4	error			275	2140	Sampled		
5/9/22	-15.3	error	69.37	671.46	278	2418	Sampled		
5/10/22	-15.4	error			257	2675	Sampled		
5/11/22	-15.4	error			246	2921	Sampled		
5/12/22	-15.4	error			245	3166	Sampled		
5/13/22	-15.3	error			243	3409	Sampled		
5/14/22	-15.4	error			161	3570	Sampled		
5/15/22	-15.3	error			255	3825	Sampled		
5/16/22	-15.4	error	69.06	671.77	293	4118	Sampled		
5/17/22	-15.4	error			298	4416	Sampled		
5/18/22	-15.4	error			266	4682	Sampled		
5/19/22	-15.4	error			253	4935	Sampled		
5/20/22	-15.4	error			30	4965	Sampled		
5/21/22	-15.4	error			102	5067	Sampled		
5/22/22	-15.4	error			71	5138	Sampled		
5/23/22	-15.3	error	68.76	672.07	77	5215	Sampled		
5/24/22	-15.3	error			71	5286	Sampled		
5/25/22	-15.4	error			87	5373	Sampled		
5/26/22	-15.4	error			63	5436	Sampled		
5/27/22	-15.3	error			217	5653	Sampled		
5/28/22	-15.4	error			269	5922	Sampled		
5/29/22	-15.3	error			195	6117	Sampled		
5/30/22	-15.4	error			224	6341	Sampled		
5/31/22	-15.4	error	68.43	672.40	237	6578	Sampled		

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Frequency	(Y) Transducer Water Water Level [a] (from SCADA) (inches) *should not be more than 36 inches* daily	(1) Calculated Elevation from Transducer Measurement [a] (ft AMSL) *should not be more than 674.00 ft AMSL*	(X) Manual Depth To Water [b] (feet) *should not be less than 66.83 ft* weekly	(2) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 674.00 ft AMSL*	Water Pumped (from SCADA) (gallons)	Cumulative Water Removed (gallons)	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
6/1/22	-15.4	error			205	205	Sampled		
6/2/22	-15.4	error			216	421	Sampled		
6/3/22	-15.4	error			228	649	Sampled		
6/4/22	-15.4	error			240	889	Sampled		
6/5/22	-15.4	error			249	1138	Sampled		
6/6/22	-15.4	error	68.4	672.43	214	1352	Sampled		
6/7/22	-15.4	error			258	1610	Sampled		
6/8/22	-15.4	error			237	1847	Sampled		
6/9/22	-15.4	error			223	2070	Sampled		
6/10/22	-15.4	error			236	2306	Sampled		
6/11/22	-15.4	error			227	2533	Sampled		
6/12/22	-15.4	error			222	2755	Sampled		
6/13/22	-15.4	error	68.37	672.46	221	2976	Sampled		
6/14/22	-15.4	error			213	3189	Sampled		
6/15/22	-15.4	error			220	3409	Sampled		
6/16/22	-15.4	error			199	3608	Sampled		
6/17/22	-15.4	error			205	3813	Sampled		
6/18/22	-15.4	error			193	4006	Sampled		
6/19/22	-15.4	error			184	4190	Sampled		
6/20/22	-15.4	error	68.36	672.47	179	4369	Sampled		
6/21/22	-15.4	error			184	4553	Sampled		
6/22/22	-15.4	error			193	4746	Sampled		
6/23/22	-15.4	error			182	4928	Sampled		
6/24/22	-15.4	error			176	5104	Sampled		
6/25/22	-15.4	error			181	5285	Sampled		
6/26/22	-15.4	error			171	5456	Sampled		
6/27/22	-15.4	error	68.32	672.51	169	5625	Sampled		
6/28/22	-15.4	error			173	5798	Sampled		
6/29/22	-15.4	error			212	6010	Sampled		
6/30/22	-15.4	error			167	6177	Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83*
Bottom of sump (feet AMSL): 671.00
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 69.83

Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
Pump automatically starts based on transducer reading.

(a) **Water level not to rise above 36 inches deep** (equates to a water level of 674.00 ft AMSL or 66.83 ft below top of the sump). Pumping must be initiated if the water level is above 674.00 ft AMSL. Pumping automatically initiated based on transducer readings. If does not occur, confirm SCADA water level measurements by taking manual reading. If both transducer and manual readings (converted to elevation) indicate pumping is required but does not automatically begin, manually pump LCS. Troubleshoot lack of automatic pumping.

(b) **Depth to water level should not be less than 66.83 ft below the top of sump** (equates to a water level of 674.00 ft AMSL or water depth of 36 inches). Initiate pumping if the water level is above 674.00 ft AMSL. Compare manual water level measurement against transducer reading. Troubleshoot discrepencies.

2022 Summary of Leachae Collection System Log
East Plant Area TSCA Vault Annual Report, Calender Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(Y) Transducer Water Water Level [a] (from SCADA) (inches) *should not be more than 36 inches* daily	(1) Calculated Elevation from Transducer Measurement [a] (ft AMSL) *should not be more than 674.00 ft AMSL*	(X) Manual Depth To Water [b] (feet) *should not be less than 66.83 ft* weekly	(2) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 674.00 ft AMSL*	Water Pumped (from SCADA) (gallons)	Cumulative Water Removed (gallons)	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
7/1/22	-15.4	error			162	162	☐ Sampled		
7/2/22	-15.4	error			159	321	☐ Sampled		
7/3/22	-15.4	error			156	477	☐ Sampled		
7/4/22	-15.4	error			160	637	☐ Sampled		
7/5/22	-15.4	error	68.34	672.49	4452	5089	☑ Sampled		sampled and pumped
7/6/22	-15.4	error	68.76	672.07	246	5335	☐ Sampled		
7/7/22	-15.4	error					☐ Sampled		SCADA work - fixed false flow readings
7/8/22	-15.4	error					☐ Sampled		
7/9/22	-15.4	error					☐ Sampled		
7/10/22	-15.4	error					☐ Sampled		
7/11/22	-15.4	error	68.74	672.09			☐ Sampled		
7/12/22	-15.4	error					☐ Sampled		
7/13/22	-15.4	error					☐ Sampled		
7/14/22	-15.4	error					☐ Sampled		
7/15/22	-15.4	error					☐ Sampled		
7/16/22	-15.4	error					☐ Sampled		
7/17/22	-15.4	error					☐ Sampled		
7/18/22	-15.4	error	68.72	672.11			☐ Sampled		
7/19/22	-15.4	error					☐ Sampled		
7/20/22	-15.4	error					☐ Sampled		
7/21/22	-15.4	error					☐ Sampled		
7/22/22	-15.4	error					☐ Sampled		
7/23/22	-15.4	error					☐ Sampled		
7/24/22	-15.4	error					☐ Sampled		
7/25/22	-15.4	error	68.71	672.12			☐ Sampled		
7/26/22	-15.4	error					☐ Sampled		
7/27/22	-15.4	error					☐ Sampled		
7/28/22	-15.4	error					☐ Sampled		
7/29/22	44.3	674.69	65.7	675.13	10363	15698	☐ Sampled		first reading @ SCADA - pumped down to 28"
7/30/22	33.9	673.83	66.9	673.93	0	15698	☐ Sampled		
7/31/22	34.2	673.85	66.73	674.10	10474	26172	☐ Sampled		Pumped down to 17.3"

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83*
Bottom of sump (feet AMSL): 671.00
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 69.83

Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
Pump automatically starts based on transducer reading.

(a) **Water level not to rise above 36 inches deep** (equates to a water level of 674.00 ft AMSL or 66.83 ft below top of the sump). Pumping must be initiated if the water level is above 674.00 ft AMSL. Pumping automatically initiated based on transducer readings. If does not occur, confirm SCADA water level measurements by taking manual reading. If both transducer and manual readings (converted to elevation) indicate pumping is required but does not automatically begin, manually pump LCS. Troubleshoot lack of automatic pumping.

(b) **Depth to water level should not be less than 66.83 ft below the top of sump** (equates to a water level of 674.00 ft AMSL or water depth of 36 inches). Initiate pumping if the water level is above 674.00 ft AMSL. Compare manual water level measurement against transducer reading. Troubleshoot discrepencies.

Table 2.1

2022 Summary of Leachae Collection System Log
East Plant Area TSCA Vault Annual Report, Calender Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(Y) Transducer Water Water Level [a] (from SCADA) (inches) *should not be more than 36 inches* daily	(1) Calculated Elevation from Transducer Measurement [a] (ft AMSL) *should not be more than 674.00 ft AMSL*	(X) Manual Depth To Water [b] (feet) *should not be less than 66.83 ft* weekly	(2) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 674.00 ft AMSL*	Water Pumped (from SCADA) (gallons)	Cumulative Water Removed (gallons)	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
8/1/22	18.7	672.56	66.54	674.29	3	3	☐ Sampled	☐	
8/2/22	18.3	672.53	66.99	673.84	1683	1686	☐ Sampled	☐	
8/3/22	16.5	672.38	66.7	674.13	5004	6690	☑ Sampled	☐	sampled @ 0915 manual measurement after pumping is 67.68
8/4/22	9.4	671.78	67.19	673.64	0	6690	☐ Sampled	☐	
8/5/22	20	672.67	66.43	674.40	9754	16444	☐ Sampled	☐	
8/6/22	6	671.50	67.58	673.25	8	16452	☐ Sampled	☐	Scada readings failed for gallons pumped. Manually calculated gallons from scada readings.
8/7/22	11	671.92			0	16452	☐ Sampled	☐	
8/8/22	13.5	672.13	66.87	673.96	3072	19524	☐ Sampled	☐	
8/9/22	9.2	671.77			0	19524	☐ Sampled	☐	
8/10/22	10	671.83			0	19524	☐ Sampled	☐	
8/11/22	11	671.92			2	19526	☐ Sampled	☐	
8/12/22	11.4	671.95			0	19526	☐ Sampled	☐	
8/13/22	12.7	672.06			0	19526	☐ Sampled	☐	
8/14/22	14.3	672.19			0	19526	☐ Sampled	☐	
8/15/22	13.6	672.13	66.97	673.86	21122	40648	☐ Sampled	☑	GHD fixed the Scada controls for the LCS. Ran a test of the scada in automatic mode and pump P102 turned on and pumped. Stopped the pump by switching to manual operations. Started pump from manual mode. Stopped the pump after test and thought it shut down but did not. pumped until morning and switched to automatic mode and shut down pump. GHD was notified and is working on this issue.
8/16/22	-15.4	error	69.53	671.30	605	41253	☐ Sampled	☑	manually pumped down with scada malfuntion.
8/17/22	-15.4	error			0	41253	☐ Sampled	☐	
8/18/22	-15.4	error			0	41253	☐ Sampled	☐	
8/19/22	-15.4	error			0	41253	☐ Sampled	☐	
8/20/22	-15.4	error			0	41253	☐ Sampled	☐	
8/21/22	-15.4	error			0	41253	☐ Sampled	☐	
8/22/22	-15.4	error	69.34	671.49	0	41253	☐ Sampled	☐	
8/23/22	-15.4	error			0	41253	☐ Sampled	☐	
8/24/22	-15.4	error			0	41253	☐ Sampled	☐	
8/25/22	-15.4	error			0	41253	☐ Sampled	☐	
8/26/22	-15.4	error			0	41253	☐ Sampled	☐	
8/27/22	-15.4	error			0	41253	☐ Sampled	☐	
8/28/22	-15.4	error			0	41253	☐ Sampled	☐	
8/29/22	-15.4	error	69.33	671.50	0	41253	☐ Sampled	☐	
8/30/22	-15.4	error			0	41253	☐ Sampled	☐	
8/31/22	-15.4	error			0	41253	☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 671.00 *Total depth of sump manhole (feet): 69.83*

Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
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9/1/22	-15.4	error			0	0	☐ Sampled	☐	water level is still below level sensor reading.
9/2/22	-15.4	error			0	0	☐ Sampled	☐	
9/3/22	-15.4	error			0	0	☐ Sampled	☐	
9/4/22	-15.4	error			0	0	☐ Sampled	☐	
9/5/22	-15.4	error			0	0	☐ Sampled	☐	
9/6/22	-15.4	error			0	0	☐ Sampled	☐	
9/7/22	-15.4	error			0	0	☐ Sampled	☐	
9/8/22	-15.4	error	69.4	671.43	213	213	☑ Sampled	☐	9/8/22 0920 sampled LCS until flow stopped. Manual measurement before pumping 69.35 after pumping 69.40
9/9/22	-15.4	error			0	213	☐ Sampled	☐	
9/10/22	-15.4	error			0	213	☐ Sampled	☐	
9/11/22	-15.4	error			0	213	☐ Sampled	☐	
9/12/22	-15.4	error	69.33	671.50	0	213	☐ Sampled	☐	
9/13/22	-15.4	error			0	213	☐ Sampled	☐	
9/14/22	-15.4	error			0	213	☐ Sampled	☐	
9/15/22	-15.4	error			0	213	☐ Sampled	☐	
9/16/22	-15.4	error			0	213	☐ Sampled	☐	
9/17/22	-15.4	error			0	213	☐ Sampled	☐	
9/18/22	-15.4	error			0	213	☐ Sampled	☐	
9/19/22	-15.4	error	69.32	671.51	0	213	☐ Sampled	☐	
9/20/22	-15.4	error			0	213	☐ Sampled	☐	
9/21/22	-15.4	error			0	213	☐ Sampled	☐	
9/22/22	-15.4	error			0	213	☐ Sampled	☐	
9/23/22	-15.4	error			0	213	☐ Sampled	☐	
9/24/22	-15.4	error			0	213	☐ Sampled	☐	
9/25/22	-15.4	error			0	213	☐ Sampled	☐	
9/26/22	-15.4	error	69.26	671.57	0	213	☐ Sampled	☐	water level is still below level sensor readings
9/27/22	-15.4	error			0	213	☐ Sampled	☐	
9/28/22	-15.4	error			0	213	☐ Sampled	☐	
9/29/22	-15.4	error			0	213	☐ Sampled	☐	
9/30/22	-15.4	error			0	213	☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83*
Bottom of sump (feet AMSL): 671.00
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 69.83

Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
Pump automatically starts based on transducer reading.

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10/1/22	-15.4	error			0	0	☐ Sampled	☐	
10/2/22	-15.4	error			0	0	☐ Sampled	☐	
10/3/22	-15.3	error	69.22	671.61	0	0	☐ Sampled	☐	
10/4/22	-15.4	error			0	0	☐ Sampled	☐	
10/5/22	-15.4	error			0	0	☐ Sampled	☐	
10/6/22	-15.4	error			0	0	☐ Sampled	☐	
10/7/22	-15.4	error			0	0	☐ Sampled	☐	Re-surveyed location where manual measurements are taken. Updated elevation is 740.87 ft. AMSL
10/8/22	-15.4	error			0	0	☐ Sampled	☐	
10/9/22	-15.4	error			0	0	☐ Sampled	☐	
10/10/22	-15.3	error	69.22	671.65	0	0	☐ Sampled	☐	
10/11/22	-15.4	error	69.41	671.46	593	593	☑ Sampled	☐	sampled and pumped
10/12/22	-15.4	error			0	593	☐ Sampled	☐	
10/13/22	-15.4	error			0	593	☐ Sampled	☐	
10/14/22	-15.3	error			0	593	☐ Sampled	☐	
10/15/22	-15.4	error			0	593	☐ Sampled	☐	
10/16/22	-15.4	error			0	593	☐ Sampled	☐	
10/17/22	-15.3	error	69.26	671.61	0	593	☐ Sampled	☐	measured to bottom of well 70.03
10/18/22	-15.3	error			0	593	☐ Sampled	☐	
10/19/22	-15.3	error			0	593	☐ Sampled	☐	
10/20/22	-15.3	error			0	593	☐ Sampled	☐	
10/21/22	-15.3	error			0	593	☐ Sampled	☐	
10/22/22	-15.3	error			0	593	☐ Sampled	☐	
10/23/22	-15.4	error			0	593	☐ Sampled	☐	
10/24/22	-15.4	error	69.23	671.64	0	593	☐ Sampled	☐	
10/25/22	-15.4	error			0	593	☐ Sampled	☐	
10/26/22	-15.3	error			0	593	☐ Sampled	☐	
10/27/22	-15.3	error			0	593	☐ Sampled	☐	
10/28/22	-15.3	error			0	593	☐ Sampled	☐	
10/29/22	-15.4	error			0	593	☐ Sampled	☐	
10/30/22	-15.4	error			0	593	☐ Sampled	☐	
10/31/22	-15.4	error	69.21	671.66	0	593	☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83*
Bottom of sump (feet AMSL): 671.00
Top of sump [top of concrete manhole - revised location as of 10/7/2022] (feet AMSL): 740.87
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 69.83
Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
Pump automatically starts based on transducer reading.

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11/1/22	-15.4	error	69.21	671.66	0	0	Sampled		
11/2/22	-15.4	error			0	0	Sampled		
11/3/22	-15.4	error			0	0	Sampled		
11/4/22	-15.4	error			0	0	Sampled		
11/5/22	-15.4	error			0	0	Sampled		
11/6/22	-15.4	error			0	0	Sampled		
11/7/22	-15.4	error			0	0	Sampled		
11/8/22	-15.4	error	69.43	671.44	640	640	☑ Sampled		sampled and pumped
11/9/22	-15.4	error			0	640	Sampled		
11/10/22	-15.4	error			0	640	Sampled		
11/11/22	-15.4	error			0	640	Sampled		
11/12/22	-15.3	error			0	640	Sampled		
11/13/22	-15.3	error			0	640	Sampled		
11/14/22	-15.3	error	69.26	671.61	0	640	Sampled		
11/15/22	-15.3	error			0	640	Sampled		
11/16/22	-15.3	error			0	640	Sampled		
11/17/22	-15.3	error			0	640	Sampled		
11/18/22	-15.3	error			0	640	Sampled		
11/19/22	-15.3	error			0	640	Sampled		
11/20/22	-15.3	error			0	640	Sampled		
11/21/22	-15.3	error	69.23	671.64	0	640	Sampled		
11/22/22	-15.3	error			0	640	Sampled		
11/23/22	-15.3	error			0	640	Sampled		
11/24/22	-15.3	error			0	640	Sampled		
11/25/22	-15.3	error			0	640	Sampled		
11/26/22	-15.3	error			0	640	Sampled		
11/27/22	-15.3	error			0	640	Sampled		
11/28/22	-15.3	error	69.23	671.64	0	640	Sampled		
11/29/22	-15.3	error			0	640	Sampled		
11/30/22	-15.3	error			0	640	Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83*
Bottom of sump (feet AMSL): 671.00
Top of sump [top of concrete manhole - revised location as of 10/7/2022] (feet AMSL): 740.87
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 69.83
Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
Pump automatically starts based on transducer reading.

(a) **Water level not to rise above 36 inches deep** (equates to a water level of 674.00 ft AMSL or 66.83 ft below top of the sump). Pumping must be initiated if the water level is above 674.00 ft AMSL. Pumping automatically initiated based on transducer readings. If does not occur, confirm SCADA water level measurements by taking manual reading. If both transducer and manual readings (converted to elevation) indicate pumping is required but does not automatically begin, manually pump LCS. Troubleshoot lack of automatic pumping.

(b) **Depth to water level should not be less than 66.83 ft below the top of sump** (equates to a water level of 674.00 ft AMSL or water depth of 36 inches). Initiate pumping if the water level is above 674.00 ft AMSL. Compare manual water level measurement against transducer reading. Troubleshoot discrepencies.

2022 Summary of Leachae Collection System Log
East Plant Area TSCA Vault Annual Report, Calender Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(Y) Transducer Water Water Level [a] (from SCADA) (inches) *should not be more than 36 inches* daily	(1) Calculated Elevation from Transducer Measurement [a] (ft AMSL) *should not be more than 674.00 ft AMSL*	(X) Manual Depth To Water [b] (feet) *should not be less than 66.83 ft* weekly	(2) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 674.00 ft AMSL*	Water Pumped (from SCADA) (gallons)	Cumulative Water Removed (gallons)	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
12/1/22	-15.3	error					☐ Sampled		
12/2/22	-15.3	error					☐ Sampled		
12/3/22	-15.3	error					☐ Sampled		
12/4/22	-15.3	error					☐ Sampled		
12/5/22	-15.3	error	69.2	671.67			☐ Sampled		
12/6/22	-15.3	error	69.2	671.67	703	703	☑ Sampled		sampled and pumped to 69.43
12/7/22	-15.4	error					☐ Sampled		
12/8/22	-15.4	error					☐ Sampled		
12/9/22	-15.4	error					☐ Sampled		
12/10/22	-15.4	error					☐ Sampled		
12/11/22	-15.3	error					☐ Sampled		
12/12/22	-15.3	error	69.27	671.60			☐ Sampled		
12/13/22	-15.4	error					☐ Sampled		
12/14/22	-15.4	error					☐ Sampled		
12/15/22	-15.4	error					☐ Sampled		
12/16/22	-15.4	error					☐ Sampled		
12/17/22	-15.4	error					☐ Sampled		
12/18/22	-15.3	error					☐ Sampled		
12/19/22	-15.3	error	69.25	671.62			☐ Sampled		
12/20/22	-15.3	error					☐ Sampled		
12/21/22	-15.4	error					☐ Sampled		
12/22/22	-15.3	error					☐ Sampled		
12/23/22	-15.3	error					☐ Sampled		
12/24/22	-15.3	error					☐ Sampled		
12/25/22	-15.3	error					☐ Sampled		
12/26/22	-15.3	error	69.23	671.64			☐ Sampled		
12/27/22	-15.3	error					☐ Sampled		
12/28/22	-15.3	error					☐ Sampled		
12/29/22	-15.4	error					☐ Sampled		
12/30/22	-15.4	error					☐ Sampled		
12/31/22	-15.4	error					☐ Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 740.83*
Bottom of sump (feet AMSL): 671.00
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 69.83

Pump operating level between 1.5 ft (672.50 ft AMSL or 68.83 ft below the top of sump) and 3 ft (674.00 ft AMSL or 66.83 ft below the top of sump) of water in the LCS manhole.
Pump automatically starts based on transducer reading.

(a) **Water level not to rise above 36 inches deep** (equates to a water level of 674.00 ft AMSL or 66.83 ft below top of the sump). Pumping must be initiated if the water level is above 674.00 ft AMSL. Pumping automatically initiated based on transducer readings. If does not occur, confirm SCADA water level measurements by taking manual reading. If both transducer and manual readings (converted to elevation) indicate pumping is required but does not automatically begin, manually pump LCS. Troubleshoot lack of automatic pumping.

(b) **Depth to water level should not be less than 66.83 ft below the top of sump** (equates to a water level of 674.00 ft AMSL or water depth of 36 inches). Initiate pumping if the water level is above 674.00 ft AMSL. Compare manual water level measurement against transducer reading. Troubleshoot discrepencies.

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [D] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Jan							173		Sampled		
2-Jan							174		Sampled		
3-Jan	71.64	669.50					175		Sampled		
4-Jan							176		Sampled		
5-Jan							177		Sampled		
6-Jan							178		Sampled		
7-Jan							179		Sampled		
8-Jan							180		Sampled		
9-Jan							181		Sampled		
10-Jan	71.62	669.52					182		Sampled		
11-Jan							183		Sampled		
12-Jan							184		Sampled		
13-Jan							185		Sampled		
14-Jan							186		Sampled		
15-Jan							187		Sampled		
16-Jan							188		Sampled		
17-Jan	71.6	669.54					189		Sampled		
18-Jan							190		Sampled		
19-Jan							191		Sampled		
20-Jan							192		Sampled		
21-Jan							193		Sampled		
22-Jan							194		Sampled		
23-Jan							195		Sampled		
24-Jan							196		Sampled		
25-Jan	71.57	669.57					197		Sampled		
26-Jan							198		Sampled		
27-Jan							199		Sampled		
28-Jan							200		Sampled		
29-Jan							201		Sampled		
30-Jan							202		Sampled		
31-Jan							203		Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14*
Bottom of sump (feet AMSL): 668.50
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 72.64

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

Table 2.2

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [D] *should not be more than 670.00 ft AMSL* (ft AMSL)	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Feb							204		Sampled		
2-Feb	71.52	669.62					205		Sampled		
3-Feb							206		Sampled		
4-Feb							207		Sampled		
5-Feb							208		Sampled		
6-Feb							209		Sampled		
7-Feb	71.48	669.66					210		Sampled		
8-Feb							211		Sampled		
9-Feb							212		Sampled		
10-Feb							213		Sampled		
11-Feb							214		Sampled		
12-Feb							215		Sampled		
13-Feb							216		Sampled		
14-Feb	71.48	669.66					217		Sampled		
15-Feb							218		Sampled		
16-Feb							219		Sampled		
17-Feb							220		Sampled		
18-Feb							221		Sampled		
19-Feb							222		Sampled		
20-Feb							223		Sampled		
21-Feb	71.47	669.67					224		Sampled		
22-Feb							225		Sampled		
23-Feb							226		Sampled		
24-Feb							227		Sampled		
25-Feb							228		Sampled		
26-Feb							229		Sampled		
27-Feb							230		Sampled		
28-Feb	71.47	669.67					231		Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 668.50 *Total depth of sump manhole (feet): 72.64*

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [D] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Mar							232		Sampled		
2-Mar							233		Sampled		
3-Mar							234		Sampled		
4-Mar							235		Sampled		
5-Mar							236		Sampled		
6-Mar							237		Sampled		
7-Mar	71.44	669.70					238		Sampled		
8-Mar							239		Sampled		
9-Mar							240		Sampled		
10-Mar							241		Sampled		
11-Mar							242		Sampled		
12-Mar							243		Sampled		
13-Mar							244		Sampled		
14-Mar	71.36	669.78					245		Sampled		
15-Mar							246		Sampled		
16-Mar							247		Sampled		
17-Mar							248		Sampled		
18-Mar							249		Sampled		
19-Mar							250		Sampled		
20-Mar							251		Sampled		
21-Mar	71.33	669.81					252		Sampled		
22-Mar							253		Sampled		
23-Mar							254		Sampled		
24-Mar							255		Sampled		
25-Mar							256		Sampled		
26-Mar							257		Sampled		
27-Mar							258		Sampled		
28-Mar	71.35	669.79					259		Sampled		
29-Mar							260		Sampled		
30-Mar							261		Sampled		
31-Mar							262		Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14*
Bottom of sump (feet AMSL): 668.50
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 72.64

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments: Summarize issues or observations; Provide detail on maintenance, calibration, programing, etc.; Identifiy issues raised to GHD.; Identify issues resolved.
1-Apr							263		Sampled		
2-Apr							264		Sampled		
3-Apr							265		Sampled		
4-Apr	71.28	669.86					266		Sampled		
5-Apr							267		Sampled		
6-Apr							268		Sampled		
7-Apr							269		Sampled		
8-Apr							270		Sampled		
9-Apr							271		Sampled		
10-Apr							272		Sampled		
11-Apr	71.2	669.94					273		Sampled		
12-Apr							274		Sampled		
13-Apr							275		Sampled		
14-Apr							276		Sampled		
15-Apr							277		Sampled		
16-Apr							278		Sampled		
17-Apr							279		Sampled		
18-Apr	71.17	669.97					280		Sampled		
19-Apr							281		Sampled		
20-Apr							282		Sampled		
21-Apr							283		Sampled		
22-Apr							284		Sampled		
23-Apr							285		Sampled		
24-Apr							286		Sampled		
25-Apr	71.18	669.96					287		Sampled		
26-Apr							288		Sampled		
27-Apr							289		Sampled		
28-Apr							290		Sampled		
29-Apr							291		Sampled		
30-Apr							292		Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 668.50 *Total depth of sump manhole (feet): 72.64*

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments: Summarize issues or observations; Provide detail on maintenance, calibration, programing, etc.; Identifiy issues raised to GHD.; Identify issues resolved.
1-May							293		Sampled		
2-May	71.07	670.07					294		Sampled		
3-May							295		Sampled		
4-May							296		Sampled		
5-May							297		Sampled		
6-May							298		Sampled		
7-May							299		Sampled		
8-May				0			300		Sampled		
9-May	71.03	670.11					301		Sampled		
10-May							302		Sampled		
11-May							303		Sampled		
12-May							304		Sampled		
13-May							305		Sampled		
14-May							306		Sampled		
15-May							307		Sampled		
16-May	70.99	670.15					308		Sampled		
17-May							309		Sampled		
18-May							310		Sampled		
19-May							311		Sampled		
20-May							312		Sampled		
21-May							313		Sampled		
22-May							314		Sampled		
23-May	70.94	670.20					315		Sampled		
24-May							316		Sampled		
25-May							317		Sampled		
26-May							318		Sampled		
27-May							319		Sampled		
28-May							320		Sampled		
29-May							321		Sampled		
30-May							322		Sampled		
31-May	70.9	670.24					323		Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14*
Bottom of sump (feet AMSL): 668.50
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 72.64

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [D] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Jun							324		Sampled		
2-Jun							325		Sampled		
3-Jun							326		Sampled		
4-Jun							327		Sampled		
5-Jun							328		Sampled		
6-Jun	70.85	670.29					329		Sampled		
7-Jun							330		Sampled		
8-Jun							331		Sampled		
9-Jun							332		Sampled		
10-Jun							333		Sampled		
11-Jun							334		Sampled		
12-Jun							335		Sampled		
13-Jun	70.8	670.34					336		Sampled		
14-Jun							337		Sampled		
15-Jun							338		Sampled		
16-Jun							339		Sampled		
17-Jun							340		Sampled		
18-Jun							341		Sampled		
19-Jun							342		Sampled		
20-Jun	70.85	670.29					343		Sampled		
21-Jun							344		Sampled		
22-Jun							345		Sampled		
23-Jun							346		Sampled		
24-Jun							347		Sampled		
25-Jun							348		Sampled		
26-Jun							349		Sampled		
27-Jun	70.72	670.42					350		Sampled		
28-Jun							351		Sampled		
29-Jun							352		Sampled		
30-Jun							353		Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 668.50 *Total depth of sump manhole (feet): 72.64*

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [D] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Jul							354		☐ Sampled	☐	
2-Jul							355		☐ Sampled	☐	
3-Jul							356		☐ Sampled	☐	
4-Jul							357		☐ Sampled	☐	
5-Jul	70.66	670.48	72.17	0	370	370.1	0	0.15	☑ Sampled	☐	sampled and pumped, inflow flowmeter used
6-Jul							1		☐ Sampled	☐	
7-Jul							2		☐ Sampled	☐	
8-Jul							3		☐ Sampled	☐	
9-Jul							4		☐ Sampled	☐	
10-Jul							5		☐ Sampled	☐	
11-Jul	71.88	669.26					6		☐ Sampled	☐	
12-Jul							7		☐ Sampled	☐	
13-Jul							8		☐ Sampled	☐	
14-Jul							9		☐ Sampled	☐	
15-Jul							10		☐ Sampled	☐	
16-Jul							11		☐ Sampled	☐	
17-Jul							12		☐ Sampled	☐	
18-Jul	71.63	669.51					13		☐ Sampled	☐	
19-Jul							14		☐ Sampled	☐	
20-Jul							15		☐ Sampled	☐	
21-Jul							16		☐ Sampled	☐	
22-Jul							17		☐ Sampled	☐	
23-Jul							18		☐ Sampled	☐	
24-Jul							19		☐ Sampled	☐	
25-Jul	71.63	669.51					20		☐ Sampled	☐	
26-Jul							21		☐ Sampled	☐	
27-Jul							22		☐ Sampled	☐	
28-Jul							23		☐ Sampled	☐	
29-Jul							24		☐ Sampled	☐	
30-Jul							25		☐ Sampled	☐	
31-Jul	71.52	669.62					26		☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 668.50 *Total depth of sump manhole (feet): 72.64*

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments: Summarize issues or observations; Provide detail on maintenance, calibration, programing, etc.; Identifiy issues raised to GHD.; Identify issues resolved.
1-Aug							27		☐ Sampled	☐	
2-Aug							28		☐ Sampled	☐	
3-Aug	71.86	669.28	72.14	0	242	242.2	0	1.24	☑ Sampled	☐	Sampled and pumped. 72.14 after pumping
4-Aug							1		☐ Sampled	☐	
5-Aug							2		☐ Sampled	☐	
6-Aug							3		☐ Sampled	☐	
7-Aug							4		☐ Sampled	☐	
8-Aug	72.43	668.71					5		☐ Sampled	☐	
9-Aug							6		☐ Sampled	☐	
10-Aug							7		☐ Sampled	☐	
11-Aug							8		☐ Sampled	☐	
12-Aug							9		☐ Sampled	☐	
13-Aug							10		☐ Sampled	☐	
14-Aug							11		☐ Sampled	☐	
15-Aug	72.25	668.89					12		☐ Sampled	☐	
16-Aug							13		☐ Sampled	☐	
17-Aug							14		☐ Sampled	☐	
18-Aug							15		☐ Sampled	☐	
19-Aug							16		☐ Sampled	☐	
20-Aug							17		☐ Sampled	☐	
21-Aug							18		☐ Sampled	☐	
22-Aug	72.2	668.94					19		☐ Sampled	☐	
23-Aug							20		☐ Sampled	☐	
24-Aug							21		☐ Sampled	☐	
25-Aug							22		☐ Sampled	☐	
26-Aug							23		☐ Sampled	☐	
27-Aug							24		☐ Sampled	☐	
28-Aug							25		☐ Sampled	☐	
29-Aug	72.18	668.96					26		☐ Sampled	☐	
30-Aug							27		☐ Sampled	☐	
31-Aug							28		☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14*
Bottom of sump (feet AMSL): 668.50
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 72.64

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments: Summarize issues or observations; Provide detail on maintenance, calibration, programing, etc.; Identifiy issues raised to GHD.; Identify issues resolved.
1-Sep							29		☐ Sampled	☐	
2-Sep							30		☐ Sampled	☐	
3-Sep							31		☐ Sampled	☐	
4-Sep							32		☐ Sampled	☐	
5-Sep	72.32	668.82					33		☐ Sampled	☐	
6-Sep							34		☐ Sampled	☐	
7-Sep							35		☐ Sampled	☐	
8-Sep	72.32	668.82	71.93	5962	6114	152.1	0	0.62	☑ Sampled	☐	sampled and pumped
9-Sep							1		☐ Sampled	☐	
10-Sep							2		☐ Sampled	☐	
11-Sep							3		☐ Sampled	☐	
12-Sep	72.61	668.53					4		☐ Sampled	☐	
13-Sep							5		☐ Sampled	☐	
14-Sep							6		☐ Sampled	☐	
15-Sep							7		☐ Sampled	☐	
16-Sep							8		☐ Sampled	☐	
17-Sep							9		☐ Sampled	☐	
18-Sep							10		☐ Sampled	☐	
19-Sep	72.59	668.55					11		☐ Sampled	☐	
20-Sep							12		☐ Sampled	☐	
21-Sep							13		☐ Sampled	☐	
22-Sep							14		☐ Sampled	☐	
23-Sep							15		☐ Sampled	☐	
24-Sep							16		☐ Sampled	☐	
25-Sep							17		☐ Sampled	☐	
26-Sep	72.53	668.61					18		☐ Sampled	☐	
27-Sep							19		☐ Sampled	☐	
28-Sep							20		☐ Sampled	☐	
29-Sep							21		☐ Sampled	☐	
30-Sep							22		☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14* *Inside diameter of sump (feet): 6*
Bottom of sump (feet AMSL): 668.50 *Total depth of sump manhole (feet): 72.64*

Pump manually starts based on manual readings

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
(b) USEPA action leakage rate basd on good CQA during construction is 100 gpad. Review operations if calculated ALR is >50 gpad

2022 Summary of Leak Detection System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Oct							23		☐ Sampled	☐	
2-Oct							24		☐ Sampled	☐	
3-Oct	72.5	668.64					25		☐ Sampled	☐	
4-Oct							26		☐ Sampled	☐	
5-Oct							27		☐ Sampled	☐	
6-Oct							28		☐ Sampled	☐	
7-Oct							29		☐ Sampled	☐	New location for taking manual measurements established. Elevation of new location is 741.74 ft. AMSL. Calulations in column D have been updated from this date forward
8-Oct							30		☐ Sampled	☐	
9-Oct							31		☐ Sampled	☐	
10-Oct	72.83	668.91					32		☐ Sampled	☐	first manual measurement at new location point
11-Oct	72.83	668.91	72.78	6114	6224	109.8	0	0.49	☑ Sampled	☐	sampled and pumped
12-Oct							1		☐ Sampled	☐	
13-Oct							2		☐ Sampled	☐	
14-Oct							3		☐ Sampled	☐	
15-Oct							4		☐ Sampled	☐	
16-Oct							5		☐ Sampled	☐	
17-Oct	72.73	669.01					6		☐ Sampled	☐	measured bottom of well 73.46
18-Oct							7		☐ Sampled	☐	
19-Oct							8		☐ Sampled	☐	
20-Oct							9		☐ Sampled	☐	
21-Oct							10		☐ Sampled	☐	
22-Oct							11		☐ Sampled	☐	
23-Oct							12		☐ Sampled	☐	
24-Oct	72.71	669.03					13		☐ Sampled	☐	
25-Oct							14		☐ Sampled	☐	
26-Oct							15		☐ Sampled	☐	
27-Oct							16		☐ Sampled	☐	
28-Oct							17		☐ Sampled	☐	
29-Oct							18		☐ Sampled	☐	
30-Oct							19		☐ Sampled	☐	
31-Oct	72.73	669.01					20		☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14*
Bottom of sump (feet AMSL): 668.50
Top of sump [top of concrete manhole - revised location as of 10/7/2022] (feet AMSL): 741.74
Pump manually starts based on manual readings
Inside diameter of sump (feet): 6
Total depth of sump manhole (feet): 72.64

(a) **Water level not to rise above 18 inches deep** (equates to a water level of 670.00 ft AMSL or 71.14 ft below top of the sump). Pumping must be initiated if the water level is above 670.00 ft AMSL.
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Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [b] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments: Summarize issues or observations. Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Nov	72.73	669.01					21		Sampled		
2-Nov							22		Sampled		
3-Nov							23		Sampled		
4-Nov							24		Sampled		
5-Nov							25		Sampled		
6-Nov							26		Sampled		
7-Nov							27		Sampled		
8-Nov	72.72	669.02	72.96	6224	6313	88.8	0	0.47	Sampled		sampled and pumped
9-Nov							1		Sampled		
10-Nov							2		Sampled		
11-Nov							3		Sampled		
12-Nov							4		Sampled		
13-Nov							5		Sampled		
14-Nov	72.76	668.98					6		Sampled		
15-Nov							7		Sampled		
16-Nov							8		Sampled		
17-Nov							9		Sampled		
18-Nov							10		Sampled		
19-Nov							11		Sampled		
20-Nov							12		Sampled		
21-Nov	72.79	668.95					13		Sampled		
22-Nov							14		Sampled		
23-Nov							15		Sampled		
24-Nov							16		Sampled		
25-Nov							17		Sampled		
26-Nov							18		Sampled		
27-Nov							19		Sampled		
28-Nov	72.81	668.93					20		Sampled		
29-Nov							21		Sampled		
30-Nov							22		Sampled		

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14*
Bottom of sump (feet AMSL): 668.50
Top of sump [top of concrete manhole - revised location as of 10/7/2022] (feet AMSL): 741.74
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East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Frequency	(X) Manual Depth To Water [a] *should not be less than 71.14 ft* (feet) weekly	(Y) Calculated Elevation from Manual Depth Measurement [D] (ft AMSL) *should not be more than 670.00 ft AMSL*	(2) Manual Depth To Water After Pumping (if pumping occurred) (feet)	In-Line Flow Meter Reading Before Pumping gallons	In-Line Flow Meter Reading After Pumping gallons	Volume Removed gallons	Days Since Last Pumped days	Action Leakage Rate [b] gpad	Sample Collected monthly	Maintenance, Calibration, or Programing Performed	Comments Summarize issues or observations Provide detail on maintenance, calibration, programing, etc. Identifiy issues raised to GHD. Identify issues resolved.
1-Dec							23		☐ Sampled	☐	
2-Dec							24		☐ Sampled	☐	
3-Dec							25		☐ Sampled	☐	
4-Dec							26		☐ Sampled	☐	
5-Dec	72.79	668.95					27		☐ Sampled	☐	
6-Dec	72.8	668.94	72.92	6313	6378	65	0	0.34	☑ Sampled	☐	sampled and pumped
7-Dec							1		☐ Sampled	☐	
8-Dec							2		☐ Sampled	☐	
9-Dec							3		☐ Sampled	☐	
10-Dec							4		☐ Sampled	☐	
11-Dec							5		☐ Sampled	☐	
12-Dec	72.84	668.90					6		☐ Sampled	☐	
13-Dec							7		☐ Sampled	☐	
14-Dec							8		☐ Sampled	☐	
15-Dec							9		☐ Sampled	☐	
16-Dec							10		☐ Sampled	☐	
17-Dec							11		☐ Sampled	☐	
18-Dec							12		☐ Sampled	☐	
19-Dec	72.83	668.91					13		☐ Sampled	☐	
20-Dec							14		☐ Sampled	☐	
21-Dec							15		☐ Sampled	☐	
22-Dec							16		☐ Sampled	☐	
23-Dec							17		☐ Sampled	☐	
24-Dec							18		☐ Sampled	☐	
25-Dec							19		☐ Sampled	☐	
26-Dec	72.83	668.91					20		☐ Sampled	☐	
27-Dec							21		☐ Sampled	☐	
28-Dec							22		☐ Sampled	☐	
29-Dec							23		☐ Sampled	☐	
30-Dec							24		☐ Sampled	☐	
31-Dec							25		☐ Sampled	☐	

Notes: *Top of sump [top of concrete manhole] (feet AMSL): 741.14*
Bottom of sump (feet AMSL): 668.50
Top of sump [top of concrete manhole - revised location as of 10/7/2022] (feet AMSL): 741.74
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Table 2.3

2022 Summary of Gravel Underdrain System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date	Time of Measurement	Water Level at PLC [(a)] (inches)	PLC Water Level Converted to Elevation[(2)] (ft. AMSL)	Comments[(1)]
1/1/22	8:00	76.2	668.53	
1/2/22	8:00	76.6	668.56	
1/3/22	8:00	76.6	668.56	
1/4/22	8:00	76.5	668.55	
1/5/22	8:00	76.5	668.55	
1/6/22	8:00	76.5	668.55	
1/7/22	8:00	76.5	668.55	
1/8/22	8:00	76.6	668.56	
1/9/22	8:00	76.6	668.56	
1/10/22	8:00	76.5	668.55	
1/11/22	8:00	76.5	668.55	
1/12/22	8:00	76.5	668.55	
1/13/22	8:00	76.8	668.58	
1/14/22	8:00	76.4	668.54	
1/15/22	8:00	76.8	668.58	
1/16/22	8:00	76.9	668.58	
1/17/22	8:00	77.0	668.59	
1/18/22	8:00	76.5	668.55	
1/19/22	8:00	76.5	668.55	
1/20/22	8:00	76.6	668.56	
1/21/22	8:00	76.6	668.56	
1/22/22	8:00	76.6	668.56	
1/23/22	8:00	76.6	668.56	
1/24/22	8:00	76.5	668.55	
1/25/22	8:00	76.5	668.55	
1/26/22	8:00	76.5	668.55	
1/27/22	8:00	76.7	668.57	
1/28/22	8:00	76.8	668.58	
1/29/22	8:00	76.8	668.58	
1/30/22	8:00	76.6	668.56	
1/31/22	8:00	76.6	668.56	
2/1/22	8:00	76.3	668.53	
2/2/22	8:00	76.7	668.57	
2/3/22	8:00	76.6	668.56	
2/4/22	8:00	76.7	668.57	
2/5/22	8:00	76.5	668.55	
2/6/22	8:00	76.4	668.54	
2/7/22	8:00	76.6	668.56	
2/8/22	8:00	76.6	668.56	
2/9/22	8:00	76.5	668.55	
2/10/22	8:00	76.5	668.55	
2/11/22	8:00	76.4	668.54	
2/12/22	8:00	76.2	668.53	
2/13/22	8:00	76.2	668.53	
2/14/22	8:00	76.1	668.52	
2/15/22	8:00	76.2	668.53	
2/16/22	8:00	76.2	668.53	
2/17/22	8:00	76.2	668.53	
2/18/22	8:00	76.2	668.53	
2/19/22	8:00	76.5	668.55	
2/20/22	8:00	76.5	668.55	
2/21/22	8:00	76.4	668.54	
2/22/22	8:00	76.1	668.52	
2/23/22	8:00	76.3	668.53	
2/24/22	8:00	73.4	668.29	
2/25/22	8:00	76.4	668.54	

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Date	Time of Measurement	Water Level at PLC [(a)] (inches)	PLC Water Level Converted to Elevation[(2)] (ft. AMSL)	Comments[(1)]
2/26/22	8:00	76.5	668.55	
2/27/22	8:00	76.5	668.55	
2/28/22	8:00	76.7	668.57	
3/1/22	8:00	76.3	668.53	
3/2/22	8:00	76.4	668.54	
3/3/22	8:00	76.4	668.54	
3/4/22	8:00	76.1	668.52	
3/5/22	8:00	76.3	668.53	
3/6/22	8:00	76.4	668.54	
3/7/22	8:00	76.4	668.54	
3/8/22	8:00	76.4	668.54	
3/9/22	8:00	76.3	668.53	
3/10/22	8:00	76.3	668.53	
3/11/22	8:00	76.3	668.53	
3/12/22	8:00	76.1	668.52	
3/13/22	8:00	76.6	668.56	
3/14/22	8:00	76.1	668.52	
3/15/22	8:00	76.1	668.52	
3/16/22	8:00	76.4	668.54	
3/17/22	8:00	76.4	668.54	
3/18/22	8:00	76.4	668.54	
3/19/22	8:00	76.5	668.55	
3/20/22	8:00	76.1	668.52	
3/21/22	8:00	76.4	668.54	
3/22/22	8:00	76.2	668.53	
3/23/22	8:00	76.4	668.54	
3/24/22	8:00	76.0	668.51	
3/25/22	8:00	76.2	668.53	
3/26/22	8:00	76.2	668.53	
3/27/22	8:00	76.1	668.52	
3/28/22	8:00	76.2	668.53	
3/29/22	8:00	76.2	668.53	
3/30/22	8:00	76.2	668.53	
3/31/22	8:00	76.0	668.51	
4/1/22	8:00	76.1	668.52	
4/2/22	8:00	76.1	668.52	
4/3/22	8:00	75.8	668.49	
4/4/22	8:00	76.4	668.54	
4/5/22	8:00	76.1	668.52	
4/6/22	8:00	76.2	668.53	
4/7/22	8:00	76.2	668.53	
4/8/22	8:00	76.2	668.53	
4/9/22	8:00	76.1	668.52	
4/10/22	8:00	76.0	668.51	
4/11/22	8:00	76.1	668.52	
4/12/22	8:00	76.1	668.52	
4/13/22	8:00	75.8	668.49	
4/14/22	8:00	75.8	668.49	
4/15/22	8:00	76.0	668.51	
4/16/22	8:00	76.1	668.52	
4/17/22	8:00	75.8	668.49	
4/18/22	8:00	76.1	668.52	
4/19/22	8:00	76.3	668.53	
4/20/22	8:00	76.1	668.52	
4/21/22	8:00	75.8	668.49	
4/22/22	8:00	75.9	668.50	

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Bedford, Indiana

Date	Time of Measurement	Water Level at PLC [(a)] (inches)	PLC Water Level Converted to Elevation[(2)] (ft. AMSL)	Comments[(1)]
4/23/22	8:00	75.8	668.49	
4/24/22	8:00	75.9	668.50	
4/25/22	8:00	75.8	668.49	
4/26/22	8:00	75.8	668.49	
4/27/22	8:00	75.6	668.48	
4/28/22	8:00	75.8	668.49	
4/29/22	8:00	75.9	668.50	
4/30/22	8:00	75.9	668.50	
5/1/22	8:00	75.7	668.48	
5/2/22	8:00	75.7	668.48	
5/3/22	8:00	75.8	668.49	
5/4/22	8:00	75.8	668.49	
5/5/22	8:00	75.7	668.48	
5/6/22	8:00	76.1	668.52	
5/7/22	8:00	75.8	668.49	
5/8/22	8:00	75.7	668.48	
5/9/22	8:00	75.7	668.48	
5/10/22	8:00	75.6	668.48	
5/11/22	8:00	75.7	668.48	
5/12/22	8:00	75.7	668.48	
5/13/22	8:00	75.7	668.48	
5/14/22	8:00	75.6	668.48	
5/15/22	8:00	75.7	668.48	
5/16/22	8:00	75.7	668.48	
5/17/22	8:00	75.7	668.48	
5/18/22	8:00	75.7	668.48	
5/19/22	8:00	75.7	668.48	
5/20/22	8:00	75.7	668.48	
5/21/22	8:00	75.6	668.48	
5/22/22	8:00	75.5	668.47	
5/23/22	8:00	75.8	668.49	
5/24/22	8:00	75.6	668.48	
5/25/22	8:00	75.6	668.48	
5/26/22	8:00	75.7	668.48	
5/27/22	8:00	75.5	668.47	
5/28/22	8:00	75.7	668.48	
5/29/22	8:00	75.6	668.48	
5/30/22	8:00	75.5	668.47	
5/31/22	8:00	75.5	668.47	
6/1/22	8:00	75.6	668.48	
6/2/22	8:00	75.6	668.48	
6/3/22	8:00	75.6	668.48	
6/4/22	8:00	75.5	668.47	
6/5/22	8:00	75.5	668.47	
6/6/22	8:00	75.8	668.49	
6/7/22	8:00	75.7	668.48	
6/8/22	8:00	75.7	668.48	
6/9/22	8:00	75.7	668.48	
6/10/22	8:00	75.8	668.49	
6/11/22	8:00	75.7	668.48	
6/12/22	8:00	75.4	668.46	
6/13/22	8:00	75.5	668.47	
6/14/22	8:00	75.5	668.47	
6/15/22	8:00	75.6	668.48	
6/16/22	8:00	75.5	668.47	
6/17/22	8:00	75.2	668.44	

Table 2.3

2022 Summary of Gravel Underdrain System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date	Time of Measurement	Water Level at PLC [(a)] (inches)	PLC Water Level Converted to Elevation[(2)] (ft. AMSL)	Comments[(1)]
6/18/22	8:00	75.4	668.46	
6/19/22	8:00	75.4	668.46	
6/20/22	8:00	75.4	668.46	
6/21/22	8:00	75.6	668.48	
6/22/22	8:00	75.4	668.46	
6/23/22	8:00	75.6	668.48	
6/24/22	8:00	75.6	668.48	
6/25/22	8:00	75.4	668.46	
6/26/22	8:00	75.4	668.46	
6/27/22	8:00	75.0	668.43	
6/28/22	8:00	75.3	668.45	
6/29/22	8:00	75.3	668.45	
6/30/22	8:00	75.3	668.45	
7/1/22	8:00	75.3	668.45	
7/2/22	8:00	75.4	668.46	
7/3/22	8:00	75.1	668.43	
7/4/22	8:00	75.4	668.46	
7/5/22	8:00	75.4	668.46	
7/6/22	8:00	75.4	668.46	
7/7/22	8:00	75.4	668.46	
7/8/22	8:00	75.5	668.47	
7/9/22	8:00	75.3	668.45	
7/10/22	8:00	75.3	668.45	
7/11/22	8:00	75.2	668.44	
7/12/22	8:00	75.4	668.46	
7/13/22	8:00	72.3	668.20	
7/14/22	8:00	75.2	668.44	
7/15/22	8:00	75.3	668.45	
7/16/22	8:00	75.4	668.46	
7/17/22	8:00	75.2	668.44	
7/18/22	8:00	75.1	668.43	
7/19/22	8:00	75.2	668.44	
7/20/22	8:00	75.2	668.44	
7/21/22	8:00	75.2	668.44	
7/22/22	8:00	75.1	668.43	
7/23/22	8:00	75.3	668.45	
7/24/22	8:00	75.2	668.44	
7/25/22	8:00	74.9	668.42	
7/26/22	8:00	75.1	668.43	
7/27/22	8:00	75.1	668.43	
7/28/22	8:00	75.2	668.44	
7/29/22	8:00	75.1	668.43	
7/30/22	8:00	75.3	668.45	
7/31/22	8:00	75.3	668.45	
8/1/22	8:00	75.3	668.45	
8/2/22	8:00	75.4	668.46	
8/3/22	8:00	75.4	668.46	
8/4/22	8:00	75.0	668.43	
8/5/22	8:00	75.1	668.43	
8/6/22	8:00	75.1	668.43	
8/7/22	8:00	75.2	668.44	
8/8/22	8:00	75.1	668.43	
8/9/22	8:00	74.8	668.41	
8/10/22	8:00	74.9	668.42	
8/11/22	8:00	75.0	668.43	
8/12/22	8:00	74.8	668.41	

Table 2.3

2022 Summary of Gravel Underdrain System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date	Time of Measurement	Water Level at PLC [(a)] (inches)	PLC Water Level Converted to Elevation[(2)] (ft. AMSL)	Comments[(1)]
8/13/22	8:00	75.2	668.44	
8/14/22	8:00	75.1	668.43	
8/15/22	8:00	75.1	668.43	
8/16/22	8:00	75.2	668.44	
8/17/22	8:00	74.9	668.42	
8/18/22	8:00	75.1	668.43	
8/19/22	8:00	75.3	668.45	
8/20/22	8:00	75.2	668.44	
8/21/22	8:00	75.1	668.43	
8/22/22	8:00	74.7	668.40	
8/23/22	8:00	75.0	668.43	
8/24/22	8:00	75.0	668.43	
8/25/22	8:00	74.9	668.42	
8/26/22	8:00	75.0	668.43	
8/27/22	8:00	74.7	668.40	
8/28/22	8:00	74.9	668.42	
8/29/22	8:00	74.8	668.41	
8/30/22	8:00	75.0	668.43	
8/31/22	8:00	74.7	668.40	
9/1/22	8:00	74.7	668.40	
9/2/22	8:00	74.6	668.39	
9/3/22	8:00	74.6	668.39	
9/4/22	8:00	74.8	668.41	
9/5/22	8:00	74.6	668.39	
9/6/22	8:00	74.8	668.41	
9/7/22	8:00	74.8	668.41	
9/8/22	8:00	74.7	668.40	
9/9/22	8:00	74.7	668.40	
9/10/22	8:00	74.7	668.40	
9/11/22	8:00	75.0	668.43	
9/12/22	8:00	74.7	668.40	
9/13/22	8:00	74.6	668.39	
9/14/22	8:00	74.6	668.39	
9/15/22	8:00	74.5	668.38	
9/16/22	8:00	74.9	668.42	
9/17/22	8:00	74.4	668.38	
9/18/22	8:00	74.4	668.38	
9/19/22	8:00	74.4	668.38	
9/20/22	8:00	74.4	668.38	
9/21/22	8:00	74.7	668.40	
9/22/22	8:00	74.7	668.40	
9/23/22	8:00	74.6	668.39	
9/24/22	8:00	74.7	668.40	
9/25/22	8:00	74.6	668.39	
9/26/22	8:00	74.6	668.39	
9/27/22	8:00	74.5	668.38	
9/28/22	8:00	74.6	668.39	
9/29/22	8:00	74.7	668.40	
9/30/22	8:00	74.7	668.40	
10/1/22	8:00	74.7	668.40	
10/2/22	8:00	74.4	668.38	
10/3/22	8:00	74.3	668.37	
10/4/22	8:00	74.7	668.40	
10/5/22	8:00	74.7	668.40	
10/6/22	8:00	74.4	668.38	
10/7/22	8:00	74.4	668.38	

Table 2.3

2022 Summary of Gravel Underdrain System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date	Time of Measurement	Water Level at PLC [(a)] (inches)	PLC Water Level Converted to Elevation[(2)] (ft. AMSL)	Comments[(1)]
10/8/22	8:00	74.3	668.37	
10/9/22	8:00	74.4	668.38	
10/10/22	8:00	74.4	668.38	
10/11/22	8:00	74.4	668.38	
10/12/22	8:00	74.4	668.38	
10/13/22	8:00	74.7	668.40	
10/14/22	8:00	74.8	668.41	
10/15/22	8:00	74.7	668.40	
10/16/22	8:00	74.7	668.40	
10/17/22	8:00	74.5	668.38	
10/18/22	8:00	74.4	668.38	
10/19/22	8:00	74.4	668.38	
10/20/22	8:00	74.7	668.40	
10/21/22	8:00	74.4	668.38	
10/22/22	8:00	74.4	668.38	
10/23/22	8:00	74.4	668.38	
10/24/22	8:00	74.4	668.38	
10/25/22	8:00	74.7	668.40	
10/26/22	8:00	74.7	668.40	
10/27/22	8:00	74.7	668.40	
10/28/22	8:00	74.7	668.40	
10/29/22	8:00	74.7	668.40	
10/30/22	8:00	74.4	668.38	
10/31/22	8:00	74.7	668.40	
11/1/22	8:00	74.4	668.38	
11/2/22	8:00	74.3	668.37	
11/3/22	8:00	74.4	668.38	
11/4/22	8:00	74.4	668.38	
11/5/22	8:00	74.7	668.40	
11/6/22	8:00	74.4	668.38	
11/7/22	8:00	74.4	668.38	
11/8/22	8:00	74.4	668.38	
11/9/22	8:00	74.4	668.38	
11/10/22	8:00	74.4	668.38	
11/11/22	8:00	74.7	668.40	
11/12/22	8:00	74.4	668.38	
11/13/22	8:00	74.4	668.38	
11/14/22	8:00	74.4	668.38	
11/15/22	8:00	74.7	668.40	
11/16/22	8:00	74.7	668.40	
11/17/22	8:00	74.8	668.41	
11/18/22	8:00	74.7	668.40	
11/19/22	8:00	74.7	668.40	
11/20/22	8:00	74.7	668.40	
11/21/22	8:00	74.4	668.38	
11/22/22	8:00	74.4	668.38	
11/23/22	8:00	74.7	668.40	
11/24/22	8:00	74.7	668.40	
11/25/22	8:00	74.7	668.40	
11/26/22	8:00	74.4	668.38	
11/27/22	8:00	74.4	668.38	
11/28/22	8:00	74.7	668.40	
11/29/22	8:00	74.7	668.40	
11/30/22	8:00	74.7	668.40	
12/1/22	8:00	74.4	668.38	
12/2/22	8:00	74.4	668.38	

Table 2.3

2022 Summary of Gravel Underdrain System Log
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date	Time of Measurement	Water Level at PLC [(a)] (inches)	PLC Water Level Converted to Elevation[(2)] (ft. AMSL)	Comments[(1)]
12/3/22	8:00	74.7	668.40	
12/4/22	8:00	74.7	668.40	
12/5/22	8:00	74.4	668.38	
12/6/22	8:00	74.4	668.38	
12/7/22	8:00	74.4	668.38	
12/8/22	8:00	74.4	668.38	
12/9/22	8:00	74.6	668.39	
12/10/22	8:00	74.4	668.38	
12/11/22	8:00	74.4	668.38	
12/12/22	8:00	74.4	668.38	
12/13/22	8:00	74.4	668.38	
12/14/22	8:00	74.5	668.38	
12/15/22	8:00	74.5	668.38	
12/16/22	8:00	74.5	668.38	
12/17/22	8:00	74.5	668.38	
12/18/22	8:00	74.5	668.38	
12/19/22	8:00	74.5	668.38	
12/20/22	8:00	74.5	668.38	
12/21/22	8:00	74.5	668.38	
12/22/22	8:00	74.4	668.38	
12/23/22	8:00	74.7	668.40	
12/24/22	8:00	74.7	668.40	
12/25/22	8:00	74.7	668.40	
12/26/22	8:00	74.6	668.39	
12/27/22	8:00	74.6	668.39	
12/28/22	8:00	74.4	668.38	
12/29/22	8:00	74.4	668.38	
12/30/22	8:00	74.4	668.38	
Total				

Notes:

ft AMSL - feet above mean sea level
NR - Not Recorded
Top of sump [top of concrete manhole] (feet AMSL): 739.49
Bottom of sump (feet AMSL): 662.18
Total depth of sump manhole (feet): 77.31
Inside diameter of sump (feet): 3

[(1)] Pump within sump is not operational

[(2)] Water level in the GUS not to rise above the secondary liner system (667.50 ft AMSL) (equates to more than 63.84 inches of water depth or a water level of 71.99 ft below the top of sump).
Indication of the Indication of the water level in the GUS rising to 667.50 ft AMSL or higher.

[(a)] PLC records the maximum water level observed each day (midnight to midnight). Therefore, the manual water level/elevation will not match the water level/elevation recorded by the PLC.

Table 2.4

Summary of 2022 Water Elevations Compared to Liner System
East Plant Area TSA Annual Vault Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date (mm/dd/yy)	LCS[1] Water Elevation (Manual) (ft. AMSL)	LCS[1] Water Elevation (PLC) (ft. AMSL)	Lowest Elevation of Primary Liner (ft. AMSL)	LDS[2] Water Elevation (Manual) (ft. AMSL)	Lowest Elevation of Secondary Liner (ft. AMSL)	GUS[3] Water Elevation (PLC) (ft. AMSL)
1/1/22	--	Not Available[4]	669.50	--	667.5	669.03
1/2/22	--	Not Available[4]	669.50	--	667.5	669.03
1/3/22	671.77	Not Available[4]	669.50	669.5	667.5	668.99
1/4/22		Not Available[4]	669.50	--	667.5	668.99
1/5/22	--	Not Available[4]	669.50	--	667.5	669.00
1/6/22	--	Not Available[4]	669.50	--	667.5	669.01
1/7/22	--	Not Available[4]	669.50	--	667.5	669.01
1/8/22	--	Not Available[4]	669.50	--	667.5	669.02
1/9/22	--	Not Available[4]	669.50	--	667.5	669.02
1/10/22	670.93	Not Available[4]	669.50	669.5	667.5	669.00
1/11/22		Not Available[4]	669.50	--	667.5	669.00
1/12/22	--	Not Available[4]	669.50	--	667.5	669.00
1/13/22	--	Not Available[4]	669.50	--	667.5	669.03
1/14/22	--	Not Available[4]	669.50	--	667.5	669.03
1/15/22	--	Not Available[4]	669.50	--	667.5	669.03
1/16/22	--	Not Available[4]	669.50	--	667.5	669.03
1/17/22	671.91	Not Available[4]	669.50	669.5	667.5	669.03
1/18/22		Not Available[4]	669.50	--	667.5	669.03
1/19/22	--	Not Available[4]	669.50	--	667.5	669.03
1/20/22	--	Not Available[4]	669.50	--	667.5	669.03
1/21/22	--	Not Available[4]	669.50	--	667.5	669.04
1/22/22	--	Not Available[4]	669.50	--	667.5	669.06
1/23/22	--	Not Available[4]	669.50	--	667.5	669.04
1/24/22	--	Not Available[4]	669.50	--	667.5	669.03
1/25/22	671.91	Not Available[4]	669.50	669.6	667.5	669.03
1/26/22	--	Not Available[4]	669.50	--	667.5	669.02
1/27/22	--	Not Available[4]	669.50	--	667.5	669.02
1/28/22	--	Not Available[4]	669.50	--	667.5	669.02
1/29/22		Not Available[4]	669.50	--	667.5	669.01
1/30/22	--	Not Available[4]	669.50	--	667.5	669.01
1/31/22	--	Not Available[4]	669.50	--	667.5	669.01
2/1/22		Not Available[4]	669.50	--	667.5	669.01
2/2/22	671.94	Not Available[4]	669.50	669.6	667.5	669.01
2/3/22	--	Not Available[4]	669.50	--	667.5	668.98
2/4/22	--	Not Available[4]	669.50	--	667.5	668.98
2/5/22	--	Not Available[4]	669.50	--	667.5	668.97
2/6/22	--	Not Available[4]	669.50	--	667.5	668.98
2/7/22	671.96	Not Available[4]	669.50	669.7	667.5	668.98
2/8/22		Not Available[4]	669.50	--	667.5	668.98
2/9/22	--	Not Available[4]	669.50	--	667.5	668.98
2/10/22	--	Not Available[4]	669.50	--	667.5	668.98
2/11/22	--	Not Available[4]	669.50	--	667.5	668.97
2/12/22	--	Not Available[4]	669.50	--	667.5	668.97
2/13/22	--	Not Available[4]	669.50	--	667.5	668.95
2/14/22	671.99	Not Available[4]	669.50	669.7	667.5	668.95
2/15/22		Not Available[4]	669.50	--	667.5	668.95
2/16/22	--	Not Available[4]	669.50	--	667.5	669.00
2/17/22	--	Not Available[4]	669.50	--	667.5	669.00
2/18/22	--	Not Available[4]	669.50	--	667.5	669.00
2/19/22	--	Not Available[4]	669.50	--	667.5	668.98
2/20/22	--	Not Available[4]	669.50	--	667.5	668.98
2/21/22	672.02	Not Available[4]	669.50	669.7	667.5	668.97
2/22/22		Not Available[4]	669.50	--	667.5	668.97
2/23/22	--	Not Available[4]	669.50	--	667.5	668.95
2/24/22	--	Not Available[4]	669.50	--	667.5	668.95
2/25/22	--	Not Available[4]	669.50	--	667.5	668.91
2/26/22	--	Not Available[4]	669.50	--	667.5	668.95
2/27/22	--	Not Available[4]	669.50	--	667.5	668.95
2/28/22	672.04	Not Available[4]	669.50	669.7	667.5	668.95
3/1/22		Not Available[4]	669.50	--	667.5	668.95
3/2/22	--	Not Available[4]	669.50	--	667.5	668.98
3/3/22	--	Not Available[4]	669.50	--	667.5	668.98
3/4/22	--	Not Available[4]	669.50	--	667.5	668.96
3/5/22	--	Not Available[4]	669.50	--	667.5	668.93
3/6/22	--	Not Available[4]	669.50	--	667.5	668.95
3/7/22	672.02	Not Available[4]	669.50	669.7	667.5	668.94
3/8/22		Not Available[4]	669.50	--	667.5	668.94
3/9/22	--	Not Available[4]	669.50	--	667.5	668.95
3/10/22	--	Not Available[4]	669.50	--	667.5	668.93
3/11/22	--	Not Available[4]	669.50	--	667.5	668.93
3/12/22	--	Not Available[4]	669.50	--	667.5	668.93
3/13/22	--	Not Available[4]	669.50	--	667.5	668.93
3/14/22	672.00	Not Available[4]	669.50	669.8	667.5	668.93
3/15/22		Not Available[4]	669.50	--	667.5	668.95
3/16/22	--	Not Available[4]	669.50	--	667.5	668.98
3/17/22	--	Not Available[4]	669.50	--	667.5	668.98

Table 2.4

Summary of 2022 Water Elevations Compared to Liner System
East Plant Area TSA Annual Vault Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date (mm/dd/yy)	LCS[1] Water Elevation (Manual) (ft. AMSL)	LCS[1] Water Elevation (PLC) (ft. AMSL)	Lowest Elevation of Primary Liner (ft. AMSL)	LDS[2] Water Elevation (Manual) (ft. AMSL)	Lowest Elevation of Secondary Liner (ft. AMSL)	GUS[3] Water Elevation (PLC) (ft. AMSL)
3/18/22	--	Not Available[4]	669.50	--	667.5	668.96
3/19/22	--	Not Available[4]	669.50	--	667.5	668.96
3/20/22	--	Not Available[4]	669.50	--	667.5	668.95
3/21/22	672.00	Not Available[4]	669.50	669.8	667.5	668.96
3/22/22		Not Available[4]	669.50	--	667.5	668.96
3/23/22	--	Not Available[4]	669.50	--	667.5	668.96
3/24/22	--	Not Available[4]	669.50	--	667.5	668.98
3/25/22	--	Not Available[4]	669.50	--	667.5	668.98
3/26/22	--	Not Available[4]	669.50	--	667.5	668.98
3/27/22	--	Not Available[4]	669.50	--	667.5	669.00
3/28/22	672.08	Not Available[4]	669.50	669.8	667.5	669.03
3/29/22		Not Available[4]	669.50	--	667.5	668.98
3/30/22	--	Not Available[4]	669.50	--	667.5	669.00
3/31/22	--	Not Available[4]	669.50	--	667.5	668.98
4/1/22	--	Not Available[4]	669.50	--	667.5	669.00
4/2/22	--	Not Available[4]	669.50	--	667.5	669.02
4/3/22	--	Not Available[4]	669.50	--	667.5	669.00
4/4/22	671.85	Not Available[4]	669.50	669.9	667.5	669.00
4/5/22		Not Available[4]	669.50	--	667.5	669.00
4/6/22	--	Not Available[4]	669.50	--	667.5	669.00
4/7/22	--	Not Available[4]	669.50	--	667.5	668.99
4/8/22	--	Not Available[4]	669.50	--	667.5	669.22
4/9/22	--	Not Available[4]	669.50	--	667.5	668.97
4/10/22	--	Not Available[4]	669.50	--	667.5	669.00
4/11/22	671.63	Not Available[4]	669.50	669.9	667.5	669.00
4/12/22		Not Available[4]	669.50	--	667.5	669.02
4/13/22	--	Not Available[4]	669.50	--	667.5	669.00
4/14/22	--	Not Available[4]	669.50	--	667.5	669.00
4/15/22	--	Not Available[4]	669.50	--	667.5	668.97
4/16/22	--	Not Available[4]	669.50	--	667.5	668.97
4/17/22	--	Not Available[4]	669.50	--	667.5	668.97
4/18/22	671.38	Not Available[4]	669.50	670.0	667.5	668.97
4/19/22		Not Available[4]	669.50	--	667.5	668.97
4/20/22	--	Not Available[4]	669.50	--	667.5	668.97
4/21/22	--	Not Available[4]	669.50	--	667.5	668.97
4/22/22	--	Not Available[4]	669.50	--	667.5	668.97
4/23/22	--	Not Available[4]	669.50	--	667.5	668.97
4/24/22	--	Not Available[4]	669.50	--	667.5	668.96
4/25/22	671.39	Not Available[4]	669.50	670.0	667.5	668.95
4/26/22		Not Available[4]	669.50	--	667.5	668.97
4/27/22	--	Not Available[4]	669.50	--	667.5	668.97
4/28/22	--	Not Available[4]	669.50	--	667.5	668.96
4/29/22	--	Not Available[4]	669.50	--	667.5	668.96
4/30/22	--	Not Available[4]	669.50	--	667.5	668.97
5/1/22	--	Not Available[4]	669.50	--	667.5	668.97
5/2/22	671.44	Not Available[4]	669.50	670.1	667.5	668.93
5/3/22		Not Available[4]	669.50	--	667.5	668.98
5/4/22	--	Not Available[4]	669.50	--	667.5	668.98
5/5/22	--	Not Available[4]	669.50	--	667.5	668.98
5/6/22	--	Not Available[4]	669.50	--	667.5	668.98
5/7/22	--	Not Available[4]	669.50	--	667.5	668.98
5/8/22	--	Not Available[4]	669.50	--	667.5	668.98
5/9/22	671.46	Not Available[4]	669.50	670.1	667.5	668.98
5/10/22		Not Available[4]	669.50	--	667.5	668.97
5/11/22	--	Not Available[4]	669.50	--	667.5	668.97
5/12/22	--	Not Available[4]	669.50	--	667.5	668.97
5/13/22	--	Not Available[4]	669.50	--	667.5	668.94
5/14/22	--	Not Available[4]	669.50	--	667.5	668.94
5/15/22	--	Not Available[4]	669.50	--	667.5	668.93
5/16/22	671.77	Not Available[4]	669.50	670.2	667.5	668.94
5/17/22		Not Available[4]	669.50	--	667.5	668.93
5/18/22	--	Not Available[4]	669.50	--	667.5	668.93
5/19/22	--	Not Available[4]	669.50	--	667.5	668.97
5/20/22	--	Not Available[4]	669.50	--	667.5	668.94
5/21/22	--	Not Available[4]	669.50	--	667.5	668.94
5/22/22	--	Not Available[4]	669.50	--	667.5	668.93
5/23/22	672.07	Not Available[4]	669.50	670.2	667.5	668.97
5/24/22	--	Not Available[4]	669.50	--	667.5	668.97
5/25/22		Not Available[4]	669.50	--	667.5	668.97
5/26/22	--	Not Available[4]	669.50	--	667.5	668.97
5/27/22	--	Not Available[4]	669.50	--	667.5	668.94
5/28/22	--	Not Available[4]	669.50	--	667.5	668.97
5/29/22	--	Not Available[4]	669.50	--	667.5	668.94
5/30/22	--	Not Available[4]	669.50	--	667.5	668.98
5/31/22	672.40	Not Available[4]	669.50	670.2	667.5	668.94
6/1/22		Not Available[4]	669.50	--	667.5	668.94

Table 2.4

Summary of 2022 Water Elevations Compared to Liner System
East Plant Area TSA Annual Vault Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date (mm/dd/yy)	LCS[1] Water Elevation (Manual) (ft. AMSL)	LCS[1] Water Elevation (PLC) (ft. AMSL)	Lowest Elevation of Primary Liner (ft. AMSL)	LDS[2] Water Elevation (Manual) (ft. AMSL)	Lowest Elevation of Secondary Liner (ft. AMSL)	GUS[3] Water Elevation (PLC) (ft. AMSL)
6/2/22	--	Not Available[4]	669.50	--	667.5	668.95
6/3/22	--	Not Available[4]	669.50	--	667.5	668.97
6/4/22	--	Not Available[4]	669.50	--	667.5	668.95
6/5/22	--	Not Available[4]	669.50	--	667.5	668.95
6/6/22	672.43	Not Available[4]	669.50	670.3	667.5	668.93
6/7/22		Not Available[4]	669.50	--	667.5	668.90
6/8/22	--	Not Available[4]	669.50	--	667.5	668.90
6/9/22	--	Not Available[4]	669.50	--	667.5	668.93
6/10/22	--	Not Available[4]	669.50	--	667.5	668.94
6/11/22	--	Not Available[4]	669.50	--	667.5	668.93
6/12/22	--	Not Available[4]	669.50	--	667.5	668.93
6/13/22	672.46	Not Available[4]	669.50	670.3	667.5	668.93
6/14/22		Not Available[4]	669.50	--	667.5	668.94
6/15/22	--	Not Available[4]	669.50	--	667.5	668.94
6/16/22	--	Not Available[4]	669.50	--	667.5	668.94
6/17/22	--	Not Available[4]	669.50	--	667.5	668.93
6/18/22	--	Not Available[4]	669.50	--	667.5	668.90
6/19/22	--	Not Available[4]	669.50	--	667.5	668.90
6/20/22	672.47	Not Available[4]	669.50	670.3	667.5	668.90
6/21/22		Not Available[4]	669.50	--	667.5	668.90
6/22/22	--	Not Available[4]	669.50	--	667.5	668.90
6/23/22	--	Not Available[4]	669.50	--	667.5	668.90
6/24/22	--	Not Available[4]	669.50	--	667.5	668.90
6/25/22	--	Not Available[4]	669.50	--	667.5	668.90
6/26/22	--	Not Available[4]	669.50	--	667.5	668.90
6/27/22	672.51	Not Available[4]	669.50	670.4	667.5	668.94
6/28/22		Not Available[4]	669.50	--	667.5	668.93
6/29/22	--	Not Available[4]	669.50	--	667.5	668.93
6/30/22	--	Not Available[4]	669.50	--	667.5	668.97
7/1/22	--	Not Available[4]	669.50	--	667.5	668.97
7/2/22	--	Not Available[4]	669.50	--	667.5	668.93
7/3/22	--	Not Available[4]	669.50	--	667.5	668.93
7/4/22	--	Not Available[4]	669.50	--	667.5	668.90
7/5/22	672.49	Not Available[4]	669.50	670.5	667.5	668.88
7/6/22	672.07	Not Available[4]	669.50	--	667.5	668.88
7/7/22	--	Not Available[4]	669.50	--	667.5	668.88
7/8/22	--	Not Available[4]	669.50	--	667.5	668.84
7/9/22	--	Not Available[4]	669.50	--	667.5	668.86
7/10/22	--	Not Available[4]	669.50	--	667.5	668.84
7/11/22	672.09	Not Available[4]	669.50	669.3	667.5	668.86
7/12/22	--	Not Available[4]	669.50	--	667.5	668.88
7/13/22		Not Available[4]	669.50	--	667.5	668.88
7/14/22	--	Not Available[4]	669.50	--	667.5	668.88
7/15/22	--	Not Available[4]	669.50	--	667.5	668.90
7/16/22	--	Not Available[4]	669.50	--	667.5	668.93
7/17/22	--	Not Available[4]	669.50	--	667.5	668.94
7/18/22	672.11	Not Available[4]	669.50	669.5	667.5	669.00
7/19/22		Not Available[4]	669.50	--	667.5	669.02
7/20/22	--	Not Available[4]	669.50	--	667.5	668.97
7/21/22	--	Not Available[4]	669.50	--	667.5	668.97
7/22/22	--	Not Available[4]	669.50	--	667.5	668.88
7/23/22	--	Not Available[4]	669.50	--	667.5	668.86
7/24/22	--	Not Available[4]	669.50	--	667.5	668.80
7/25/22	672.12	Not Available[4]	669.50	669.5	667.5	668.78
7/26/22		Not Available[4]	669.50	--	667.5	668.78
7/27/22	--	Not Available[4]	669.50	--	667.5	668.78
7/28/22	--	Not Available[4]	669.50	--	667.5	668.80
7/29/22	675.13	674.69	669.50	--	667.5	668.80
7/30/22	673.93	673.83	669.50	--	667.5	668.80
7/31/22	674.10	673.85	669.50	669.6	667.5	668.78
8/1/22	674.29	672.56	669.50	--	667.5	668.80
8/2/22	673.84	672.53	669.50	--	667.5	668.80
8/3/22	674.13	672.38	669.50	669.3	667.5	668.80
8/4/22	673.64	671.78	669.50	--	667.5	668.78
8/5/22	674.40	672.67	669.50	--	667.5	668.83
8/6/22	673.25	671.50	669.50	--	667.5	668.84
8/7/22	--	671.92	669.50	--	667.5	668.85
8/8/22	673.96	672.13	669.50	668.7	667.5	668.84
8/9/22		671.77	669.50	--	667.5	668.83
8/10/22	--	671.83	669.50	--	667.5	668.83
8/11/22	--	671.92	669.50	--	667.5	668.84
8/12/22	--	671.95	669.50	--	667.5	668.84
8/13/22	--	672.06	669.50	--	667.5	668.84
8/14/22	--	672.19	669.50	--	667.5	668.84
8/15/22	673.86	672.13	669.50	668.9	667.5	668.83
8/16/22	671.30	Not Available[4]	669.50	--	667.5	668.83

Table 2.4

Summary of 2022 Water Elevations Compared to Liner System
East Plant Area TSA Annual Vault Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date (mm/dd/yy)	LCS[1] Water Elevation (Manual) (ft. AMSL)	LCS[1] Water Elevation (PLC) (ft. AMSL)	Lowest Elevation of Primary Liner (ft. AMSL)	LDS[2] Water Elevation (Manual) (ft. AMSL)	Lowest Elevation of Secondary Liner (ft. AMSL)	GUS[3] Water Elevation (PLC) (ft. AMSL)
8/17/22	--	Not Available[4]	669.50	--	667.5	668.83
8/18/22	--	Not Available[4]	669.50	--	667.5	668.83
8/19/22	--	Not Available[4]	669.50	--	667.5	668.83
8/20/22	--	Not Available[4]	669.50	--	667.5	668.84
8/21/22	--	Not Available[4]	669.50	--	667.5	668.84
8/22/22	671.49	Not Available[4]	669.50	668.9	667.5	668.84
8/23/22		Not Available[4]	669.50	--	667.5	668.83
8/24/22	--	Not Available[4]	669.50	--	667.5	668.80
8/25/22	--	Not Available[4]	669.50	--	667.5	668.83
8/26/22	--	Not Available[4]	669.50	--	667.5	668.83
8/27/22	--	Not Available[4]	669.50	--	667.5	668.83
8/28/22	--	Not Available[4]	669.50	--	667.5	668.81
8/29/22	671.50	Not Available[4]	669.50	669.0	667.5	668.81
8/30/22		Not Available[4]	669.50	--	667.5	668.81
8/31/22	--	Not Available[4]	669.50	--	667.5	668.81
9/1/22	--	Not Available[4]	669.50	--	667.5	668.80
9/2/22	--	Not Available[4]	669.50	--	667.5	668.80
9/3/22	--	Not Available[4]	669.50	--	667.5	668.79
9/4/22	--	Not Available[4]	669.50	--	667.5	668.79
9/5/22	--	Not Available[4]	669.50	668.8	667.5	668.80
9/6/22		Not Available[4]	669.50	--	667.5	668.80
9/7/22	--	Not Available[4]	669.50	--	667.5	668.80
9/8/22	671.43	Not Available[4]	669.50	668.8	667.5	668.78
9/9/22	--	Not Available[4]	669.50	--	667.5	668.78
9/10/22	--	Not Available[4]	669.50	--	667.5	668.78
9/11/22	--	Not Available[4]	669.50	--	667.5	668.78
9/12/22	671.50	Not Available[4]	669.50	668.5	667.5	668.78
9/13/22		Not Available[4]	669.50	--	667.5	668.79
9/14/22	--	Not Available[4]	669.50	--	667.5	668.80
9/15/22	--	Not Available[4]	669.50	--	667.5	668.78
9/16/22	--	Not Available[4]	669.50	--	667.5	668.78
9/17/22	--	Not Available[4]	669.50	--	667.5	668.80
9/18/22	--	Not Available[4]	669.50	--	667.5	668.81
9/19/22	671.51	Not Available[4]	669.50	668.6	667.5	668.81
9/20/22		Not Available[4]	669.50	--	667.5	668.78
9/21/22	--	Not Available[4]	669.50	--	667.5	668.78
9/22/22	--	Not Available[4]	669.50	--	667.5	668.80
9/23/22	--	Not Available[4]	669.50	--	667.5	668.78
9/24/22	--	Not Available[4]	669.50	--	667.5	668.80
9/25/22	--	Not Available[4]	669.50	--	667.5	668.78
9/26/22	671.57	Not Available[4]	669.50	668.6	667.5	668.71
9/27/22		Not Available[4]	669.50	--	667.5	668.76
9/28/22	--	Not Available[4]	669.50	--	667.5	668.78
9/29/22	--	Not Available[4]	669.50	--	667.5	668.77
9/30/22	--	Not Available[4]	669.50	--	667.5	668.78
10/1/22	--	Not Available[4]	669.50	--	667.5	668.77
10/2/22	--	Not Available[4]	669.50	--	667.5	668.76
10/3/22	671.61	Not Available[4]	669.50	668.6	667.5	668.76
10/4/22		Not Available[4]	669.50	--	667.5	668.74
10/5/22	--	Not Available[4]	669.50	--	667.5	668.76
10/6/22	--	Not Available[4]	669.50	--	667.5	668.74
10/7/22	--	Not Available[4]	669.50	--	667.5	668.74
10/8/22	--	Not Available[4]	669.50	--	667.5	668.75
10/9/22	--	Not Available[4]	669.50	--	667.5	668.75
10/10/22	671.65	Not Available[4]	669.50	668.9	667.5	668.75
10/11/22	671.46	Not Available[4]	669.50	668.9	667.5	668.75
10/12/22	--	Not Available[4]	669.50	--	667.5	668.75
10/13/22	--	Not Available[4]	669.50	--	667.5	668.75
10/14/22	--	Not Available[4]	669.50	--	667.5	668.75
10/15/22	--	Not Available[4]	669.50	--	667.5	668.75
10/16/22	--	Not Available[4]	669.50	--	667.5	668.75
10/17/22	671.61	Not Available[4]	669.50	669.0	667.5	668.75
10/18/22		Not Available[4]	669.50	--	667.5	668.75
10/19/22	--	Not Available[4]	669.50	--	667.5	668.75
10/20/22	--	Not Available[4]	669.50	--	667.5	668.75
10/21/22	--	Not Available[4]	669.50	--	667.5	668.75
10/22/22	--	Not Available[4]	669.50	--	667.5	668.75
10/23/22	--	Not Available[4]	669.50	--	667.5	668.75
10/24/22	671.64	Not Available[4]	669.50	669.0	667.5	668.75
10/25/22		Not Available[4]	669.50	--	667.5	668.75
10/26/22	--	Not Available[4]	669.50	--	667.5	668.75
10/27/22	--	Not Available[4]	669.50	--	667.5	668.75
10/28/22	--	Not Available[4]	669.50	--	667.5	668.75
10/29/22	--	Not Available[4]	669.50	--	667.5	668.75
10/30/22	--	Not Available[4]	669.50	--	667.5	668.75
10/31/22	671.66	Not Available[4]	669.50	669.0	667.5	668.75

Table 2.4

Summary of 2022 Water Elevations Compared to Liner System
East Plant Area TSA Annual Vault Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date (mm/dd/yy)	LCS[1] Water Elevation (Manual) (ft. AMSL)	LCS[1] Water Elevation (PLC) (ft. AMSL)	Lowest Elevation of Primary Liner (ft. AMSL)	LDS[2] Water Elevation (Manual) (ft. AMSL)	Lowest Elevation of Secondary Liner (ft. AMSL)	GUS[3] Water Elevation (PLC) (ft. AMSL)
11/1/22	671.66	Not Available[4]	669.50	669.0	667.5	668.75
11/2/22	--	Not Available[4]	669.50	--	667.5	668.75
11/3/22	--	Not Available[4]	669.50	--	667.5	668.75
11/4/22	--	Not Available[4]	669.50	--	667.5	668.75
11/5/22	--	Not Available[4]	669.50	--	667.5	668.75
11/6/22	--	Not Available[4]	669.50	--	667.5	668.75
11/7/22	--	Not Available[4]	669.50	--	667.5	668.75
11/8/22	671.44	Not Available[4]	669.50	669.0	667.5	668.75
11/9/22	--	Not Available[4]	669.50	--	667.5	668.75
11/10/22	--	Not Available[4]	669.50	--	667.5	668.75
11/11/22	--	Not Available[4]	669.50	--	667.5	668.75
11/12/22	--	Not Available[4]	669.50	--	667.5	668.75
11/13/22	--	Not Available[4]	669.50	--	667.5	668.75
11/14/22	671.61	Not Available[4]	669.50	669.0	667.5	668.75
11/15/22		Not Available[4]	669.50	--	667.5	668.75
11/16/22	--	Not Available[4]	669.50	--	667.5	668.75
11/17/22	--	Not Available[4]	669.50	--	667.5	668.75
11/18/22	--	Not Available[4]	669.50	--	667.5	668.75
11/19/22	--	Not Available[4]	669.50	--	667.5	668.75
11/20/22	--	Not Available[4]	669.50	--	667.5	668.75
11/21/22	671.64	Not Available[4]	669.50	669.0	667.5	668.75
11/22/22		Not Available[4]	669.50	--	667.5	668.75
11/23/22	--	Not Available[4]	669.50	--	667.5	668.75
11/24/22	--	Not Available[4]	669.50	--	667.5	668.75
11/25/22	--	Not Available[4]	669.50	--	667.5	668.75
11/26/22	--	Not Available[4]	669.50	--	667.5	668.75
11/27/22	--	Not Available[4]	669.50	--	667.5	668.75
11/28/22	671.64	Not Available[4]	669.50	668.9	667.5	668.75
11/29/22		Not Available[4]	669.50	--	667.5	668.75
11/30/22	--	Not Available[4]	669.50	--	667.5	668.75
12/1/22	--	Not Available[4]	669.50	--	667.5	668.75
12/2/22	--	Not Available[4]	669.50	--	667.5	668.75
12/3/22	--	Not Available[4]	669.50	--	667.5	668.75
12/4/22	--	Not Available[4]	669.50	--	667.5	668.75
12/5/22	671.67	Not Available[4]	669.50	669.0	667.5	668.75
12/6/22	671.67	Not Available[4]	669.50	668.9	667.5	668.75
12/7/22	--	Not Available[4]	669.50	--	667.5	668.75
12/8/22	--	Not Available[4]	669.50	--	667.5	668.75
12/9/22	--	Not Available[4]	669.50	--	667.5	668.75
12/10/22	--	Not Available[4]	669.50	--	667.5	668.75
12/11/22	--	Not Available[4]	669.50	--	667.5	668.75
12/12/22	671.6	Not Available[4]	669.50	668.9	667.5	668.75
12/13/22		Not Available[4]	669.50	--	667.5	668.75
12/14/22	--	Not Available[4]	669.50	--	667.5	668.75
12/15/22	--	Not Available[4]	669.50	--	667.5	668.75
12/16/22	--	Not Available[4]	669.50	--	667.5	668.75
12/17/22	--	Not Available[4]	669.50	--	667.5	668.75
12/18/22	--	Not Available[4]	669.50	--	667.5	668.75
12/19/22	671.62	Not Available[4]	669.50	668.9	667.5	668.75
12/20/22		Not Available[4]	669.50	--	667.5	668.75
12/21/22	--	Not Available[4]	669.50	--	667.5	668.75
12/22/22	--	Not Available[4]	669.50	--	667.5	668.75
12/23/22	--	Not Available[4]	669.50	--	667.5	668.75
12/24/22	--	Not Available[4]	669.50	--	667.5	668.75
12/25/22	--	Not Available[4]	669.50	--	667.5	669.24
12/26/22	671.64	Not Available[4]	669.50	668.9	667.5	669.24
12/27/22		Not Available[4]	669.50	--	667.5	669.25
12/28/22	--	Not Available[4]	669.50	--	667.5	669.24
12/29/22	--	Not Available[4]	669.50	--	667.5	669.26
12/30/22	--	Not Available[4]	669.50	--	667.5	669.26
12/31/22	--	Not Available[4]	669.50	--	667.5	669.26

Notes:
AMSL - Above mean sea level
ft - feet
[1] LCS: Top of 6-ft. diameter sump [top of concrete manhole] (feet AMSL): 740.83, Bottom of sump (feet AMSL): 671.00, Total depth of sump manhole (feet): 69.83.
[2] LDS: Top of 6-ft. diameter sump [top of concrete manhole] (feet AMSL): 741.14, Bottom of sump (feet AMSL): 668.5, Total depth of sump manhole (feet): 72.64
Top of concrete manhole where water levels readings are collected re-surveyed October 7, 2022: 741.74 (ft. AMSL)
[3] GUS: Top of 3-ft diamater sump [top of concrete] (feet AMSL): 738.99, Bottom of sump (feet AMSL): 662.18, Total depth of sump manhole (feet): 76.81.
[4] During investigation of the July/August 2022 increase in leachate volume, it was determined that the error reading on the LCS transducer is a result of the leachate level being below what the transducer recognizes as "zero".

Table 2.5

2022 LCS, LDS, and GUS Maximum Water Elevation Summary
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Date	LCS[1]	LCS[1]	LDS[2]	LDS[2]	GUS[3]	GUS[3]
Operationl Level	Manual Recorded Depth to Water (ft.)	Max. Water Surface Elevation (manual) (ft. AMSL)	Manual Recorded Depth to Water (ft.)	Max. Water Surface Elevation (manual) (ft. AMSL)	PLC-Recorded Water Depth (inches)	Max. Water Surface Elevation (PLC) (ft AMSL)
Jan-22	68.92	671.91	71.57	669.57	76.2	674.93
Feb-22	68.79	672.04	71.47	669.67	73.4	674.70
Mar-22	68.75	672.08	71.33	669.81	76	674.91
Apr-22	68.98	671.85	71.17	669.97	75.6	674.88
May-22	68.43	672.40	70.90	670.24	75.5	674.87
Jun-22	68.32	672.51	70.72	670.42	75	674.83
Jul-22	65.7	675.13	70.66	670.48	72.3	674.61
Aug-22	66.43	674.40	71.86	669.28	74.7	674.81
Sep-22	69.26	671.57	72.32	668.82	74.4	674.78
Oct-22	69.21	671.62	72.50	669.24	74.3	674.77
Nov-22	69.21	671.62	72.72	669.02	74.3	674.77
Dec-22	69.2	671.63	72.79	668.95	74.4	674.78

Notes:
AMSL - Above mean sea level
ft - feet

[1] LCS: Top of 6-ft. diameter sump [top of concrete manhole] (feet AMSL): 740.83, Bottom of sump (feet AMSL): 671.00, Total depth of sump manhole (feet): 69.83.
Pump operating start level: 674.00 ft. AMSL

[2] LDS: Top of 6-ft. diameter sump [top of concrete manhole] (feet AMSL): 741.14, Bottom of sump (feet AMSL): 668.5, Total depth of sump manhole (feet): 72.64
Top of concrete manhole where water levels readings are collected re-surveyed October 7, 2022: 741.74 (ft. AMSL). Operating start level: 670.00
Pump operating start level: 670.00 ft. AMSL. Water elevation that exceeds 1 ft over primatry liner: 671.5 ft. AMSL

[3] GUS: Top of 3-ft diamater sump [top of concrete] (feet AMSL): 738.99, Bottom of sump (feet AMSL): 662.18, Total depth of sump manhole (feet): 76.81.
Pump operating start level: 666.5 ft. AMSL

Indication of water level reaching or exceeding the operational limit.

Table 2.6

2022 Summary of Monthly Total Volume of Water Treated
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Month	Groundwater Treatment Plant (GWTP) Number of Operational Days	Volume of Water Treated/Discharged at the GWTP (million gallons)	Daily Average Water Treated/Discharged at the GWTP (million gallons)
Jan-22	31	3.94	0.127
Feb-22	28	5.937	0.212
Mar-22	31	4.885	0.158
Apr-22	30	4.175	0.139
May-22	31	4.726	0.152
Jun-22	30	2.092	0.070
Jul-22	31	1.898	0.061
Aug-22	31	1.721	0.056
Sep-22	30	0.936	0.031
Oct-22	31	0.651	0.021
Nov-22	30	0.779	0.026
Dec-22	31	1.557	0.050
Total	**365**	**33.297**	
Month Average	**-**	**2.775**	
Daily Average	**-**	**0.091**	

Table 3.1

Summary of Analytical Results - EI CA750 First Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Sample Location		9-4	CH-20	CH-20	CH-42	CH-42A	CH-43	CH-44	MW-X033Y147S	MW-X043Y176	MW-X043Y176	MW-X047Y236	MW-X085Y070S-1	MW-X085Y070S-2	MW-X146Y084	MW-X169Y058S-1
Sample Identification		GW-052522-MC-14	GW-052622-MC-20	GW-052622-MC-22	GW-052322-MC-02	GW-052322-MC-04	GW-052322-KH-01	GW-052322-KH-03	GW-052522-MC-16	GW-052422-KH-05	GW-052422-KH-07	GW-052422-KH-09	GW-052522-KH-15	GW-052522-KH-17	GW-052622-MC-18	GW-052622-KH-23
Sample Date		05/25/2022	05/26/2022	05/26/2022	05/23/2022	05/23/2022	05/23/2022	05/23/2022	05/25/2022	05/24/2022	05/24/2022	05/24/2022	05/25/2022	05/25/2022	05/26/2022	05/26/2022
Sample Type				Duplicate							Duplicate					
Parameters	**Units**															
PCBs																
Aroclor-1016 (PCB-1016)	ug/L	0.10 U	0.10 U	0.098 U	0.097 U	0.095 U	0.10 U	0.095 U	0.095 U	0.10 U	0.097 U	0.095 U	0.097 U	0.10 U	0.10 U	0.098 U
Aroclor-1221 (PCB-1221)	ug/L	0.10 U	0.10 U	0.098 U	0.097 U	0.095 U	0.10 U	0.095 U	0.095 U	0.10 U	0.097 U	0.095 U	0.097 U	0.10 U	0.10 U	0.098 U
Aroclor-1232 (PCB-1232)	ug/L	0.10 U	0.10 U	0.098 U	0.097 U	0.095 U	0.10 U	0.095 U	0.095 U	0.10 U	0.097 U	0.095 U	0.097 U	0.10 U	0.10 U	0.098 U
Aroclor-1242 (PCB-1242)	ug/L	0.15 J	0.10 U	0.098 U	0.097 U	0.095 U	0.10 U	0.095 U	0.095 U	0.10 U	0.097 U	0.095 U	0.097 U	0.10 U	0.10 U	0.098 U
Aroclor-1248 (PCB-1248)	ug/L	0.10 U	0.10 U	0.098 U	0.097 U	0.095 U	0.10 U	0.095 U	0.095 U	0.10 U	0.097 U	0.095 U	0.097 U	0.10 U	0.10 U	0.098 U
Aroclor-1254 (PCB-1254)	ug/L	0.10 U	0.10 U	0.098 U	0.097 U	0.095 U	0.10 U	0.095 U	0.095 U	0.10 U	0.097 U	0.095 U	0.097 U	0.10 U	0.10 U	0.098 U
Aroclor-1260 (PCB-1260)	ug/L	0.10 U	0.10 U	0.098 U	0.097 U	0.095 U	0.10 U	0.095 U	0.095 U	0.10 U	0.097 U	0.095 U	0.097 U	0.10 U	0.10 U	0.098 U
Total PCBs	ug/L	0.15 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor-1016 (PCB-1016) (dissolved)	ug/L	0.10 U	0.095 U	0.095 U	0.095 U	0.098 U	0.10 U	0.10 U	0.10 U	0.095 U	0.098 U	0.10 U	0.098 U	0.096 U	0.098 U	0.097 U
Aroclor-1221 (PCB-1221) (dissolved)	ug/L	0.10 U	0.095 U	0.095 U	0.095 U	0.098 U	0.10 U	0.10 U	0.10 U	0.095 U	0.098 U	0.10 U	0.098 U	0.096 U	0.098 U	0.097 U
Aroclor-1232 (PCB-1232) (dissolved)	ug/L	0.10 U	0.095 U	0.095 U	0.095 U	0.098 U	0.10 U	0.10 U	0.10 U	0.095 U	0.098 U	0.10 U	0.098 U	0.096 U	0.098 U	0.097 U
Aroclor-1242 (PCB-1242) (dissolved)	ug/L	0.10 U	0.095 U	0.095 U	0.095 U	0.098 U	0.10 U	0.10 U	0.10 U	0.095 U	0.098 U	0.10 U	0.098 U	0.096 U	0.098 U	0.097 U
Aroclor-1248 (PCB-1248) (dissolved)	ug/L	0.10 U	0.095 U	0.095 U	0.095 U	0.098 U	0.10 U	0.10 U	0.10 U	0.095 U	0.098 U	0.10 U	0.098 U	0.096 U	0.098 U	0.097 U
Aroclor-1254 (PCB-1254) (dissolved)	ug/L	0.10 U	0.095 U	0.095 U	0.095 U	0.098 U	0.10 U	0.10 U	0.10 U	0.095 U	0.098 U	0.10 U	0.098 U	0.096 U	0.098 U	0.097 U
Aroclor-1260 (PCB-1260) (dissolved)	ug/L	0.10 U	0.095 U	0.095 U	0.095 U	0.098 U	0.10 U	0.10 U	0.10 U	0.095 U	0.098 U	0.10 U	0.098 U	0.096 U	0.098 U	0.097 U
Total PCBs (dissolved)	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (SVOCs)																
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3&4-Methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetophenone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Atrazine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzaldehyde	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Caprolactam	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3.1

Summary of Analytical Results - EI CA750 First Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Sample Location		9-4	CH-20	CH-20	CH-42	CH-42A	CH-43	CH-44	MW-X033Y147S	MW-X043Y176	MW-X043Y176	MW-X047Y236	MW-X085Y070S-1	MW-X085Y070S-2	MW-X146Y084	MW-X169Y058S-1
Sample Identification		GW-052522-MC-14	GW-052622-MC-20	GW-052622-MC-22	GW-052322-MC-02	GW-052322-MC-04	GW-052322-KH-01	GW-052322-KH-03	GW-052522-MC-16	GW-052422-KH-05	GW-052422-KH-07	GW-052422-KH-09	GW-052522-KH-15	GW-052522-KH-17	GW-052622-MC-18	GW-052622-KH-23
Sample Date		05/25/2022	05/26/2022	05/26/2022	05/23/2022	05/23/2022	05/23/2022	05/23/2022	05/25/2022	05/24/2022	05/24/2022	05/24/2022	05/25/2022	05/25/2022	05/26/2022	05/26/2022
Sample Type				Duplicate							Duplicate					
Parameters	**Units**															
N-Nitrosodi-n-propylamine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds (VOCs)																
1,1,1-Trichloroethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloroethyl vinyl ether	ug/L	10 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Bromoform	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Bromomethane (Methyl bromide)	ug/L	1.0 U	0.42 J-	R	--	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform (Trichloromethane)	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Chloromethane (Methyl chloride)	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Isopropyl benzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl cyclohexane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	ug/L	5.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Styrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	--	--
Trifluorotrichloroethane (CFC-113)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	1.0 U	R	R	--	--	--	--	--	--	--	--	--	--	1.0 U	1.5
Xylenes (total)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry																
Chloride	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	1800000	--
Field Parameters																
Conductivity, field	uS/cm	0.383	0.814	0.814	0.877	0.755	0.859	0.819	1.840	1.336	1.336	0.577	9.728	8.057	5.757	--
Dissolved oxygen (DO), field	ug/L	7560	7270	7270	740	2380	700	1910	1330	780	780	1540	90	30	3780	--
Oxidation reduction potential (ORP), field	millivolts	19.1	-44.6	-44.6	-170.6	-106.9	84.7	134.2	-42.6	40.0	40.0	99.1	-107.3	-111.3	-68.9	--
pH, field	s.u.	7.10	7.80	7.80	6.22	5.87	7.06	7.12	6.82	7.14	7.14	7.57	6.84	7.20	7.54	--
Temperature, sample	Deg C	19.65	15.04	15.04	15.89	14.30	16.75	15.94	17.56	13.07	13.07	14.63	17.46	18.19	19.8	--
Turbidity, field	NTU	14.5	7.46	7.46	2.71	1.20	5.57	2.92	8.11	13.3	13.3	0.86	5.87	25.7	15.8	--

Table 3.1

Summary of Analytical Results - EI CA750 First Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Sample Location		MW-X227Y054	MW-X261Y356D-3	MW-X277Y100	MW-X297Y305D-2	MW-X300Y199I-1	MW-X300Y199I-2	MW-X315Y115	MW-X315Y150	MW-X315Y150	ST-59	ST-59	Tributary 3-3	Trip Blank	Trip Blank	Trip Blank
Sample Identification		GW-052422-KH-11	GW-052622-KH-27	GW-052422-MC-12	GW-052622-KH-25	GW-052522-KH-21	GW-052522-KH-19	GW-052422-MC-10	GW-052422-MC-06	GW-052422-MC-08	GW-052422-KH-13	GW-052622-JL-26	GW-052622-JL-24	TB-052422-MC-01	TB-052522-MC-02	TB-052622-MC-03
Sample Date		05/24/2022	05/26/2022	05/24/2022	05/26/2022	05/25/2022	05/25/2022	05/24/2022	05/24/2022	05/24/2022	05/24/2022	05/26/2022	05/26/2022	05/24/2022	05/25/2022	05/26/2022
Sample Type										Duplicate						
Parameters	**Units**															
PCBs																
Aroclor-1016 (PCB-1016)	ug/L	5.0 U	0.099 U	0.095 U	0.097 U	0.095 U	0.10 U	0.099 U	0.096 U	0.095 U	0.098 U	--	0.095 U	--	--	--
Aroclor-1221 (PCB-1221)	ug/L	5.0 U	0.099 U	0.095 U	0.097 U	0.095 U	0.10 U	0.099 U	0.096 U	0.095 U	0.098 U	--	0.095 U	--	--	--
Aroclor-1232 (PCB-1232)	ug/L	5.0 U	0.099 U	0.095 U	0.097 U	0.095 U	0.10 U	0.099 U	0.096 U	0.095 U	0.098 U	--	0.095 U	--	--	--
Aroclor-1242 (PCB-1242)	ug/L	31	0.099 U	0.095 U	0.097 U	0.095 U	0.10 U	0.099 U	0.096 U	0.079 J	0.098 U	--	0.095 U	--	--	--
Aroclor-1248 (PCB-1248)	ug/L	5.0 U	0.099 U	0.095 U	0.097 U	0.095 U	0.10 U	0.099 U	0.096 U	0.095 U	0.098 U	--	0.095 U	--	--	--
Aroclor-1254 (PCB-1254)	ug/L	5.0 U	0.099 U	0.095 U	0.097 U	0.095 U	0.10 U	0.099 U	0.096 U	0.095 U	0.098 U	--	0.095 U	--	--	--
Aroclor-1260 (PCB-1260)	ug/L	5.0 U	0.099 U	0.095 U	0.097 U	0.095 U	0.10 U	0.099 U	0.096 U	0.095 U	0.098 U	--	0.095 U	--	--	--
Total PCBs	ug/L	31	ND	ND	ND	ND	ND	ND	ND	0.079 J	ND	--	ND	--	--	--
Aroclor-1016 (PCB-1016) (dissolved)	ug/L	0.099 U	0.10 U	0.095 U	0.095 U	0.097 U	0.095 U	0.098 U	0.096 U	0.095 U	0.097 U	--	0.095 U	--	--	--
Aroclor-1221 (PCB-1221) (dissolved)	ug/L	0.099 U	0.10 U	0.095 U	0.095 U	0.097 U	0.095 U	0.098 U	0.096 U	0.095 U	0.097 U	--	0.095 U	--	--	--
Aroclor-1232 (PCB-1232) (dissolved)	ug/L	0.099 U	0.10 U	0.095 U	0.095 U	0.097 U	0.095 U	0.098 U	0.096 U	0.095 U	0.097 U	--	0.095 U	--	--	--
Aroclor-1242 (PCB-1242) (dissolved)	ug/L	0.099 U	0.10 U	0.095 U	0.095 U	0.097 U	0.095 U	0.098 U	0.096 U	0.095 U	0.097 U	--	0.095 U	--	--	--
Aroclor-1248 (PCB-1248) (dissolved)	ug/L	0.099 U	0.10 U	0.095 U	0.095 U	0.097 U	0.095 U	0.098 U	0.096 U	0.095 U	0.097 U	--	0.095 U	--	--	--
Aroclor-1254 (PCB-1254) (dissolved)	ug/L	0.099 U	0.10 U	0.095 U	0.095 U	0.097 U	0.095 U	0.098 U	0.096 U	0.095 U	0.097 U	--	0.095 U	--	--	--
Aroclor-1260 (PCB-1260) (dissolved)	ug/L	0.099 U	0.10 U	0.095 U	0.095 U	0.097 U	0.095 U	0.098 U	0.096 U	0.095 U	0.097 U	--	0.095 U	--	--	--
Total PCBs (dissolved)	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	--	--	--
Semi-Volatile Organic Compounds (SVOCs)																
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
3&4-Methylphenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/L	--	--	R	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Acetophenone	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Atrazine	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Benzaldehyde	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Caprolactam	ug/L	--	--	R	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	ug/L	--	--	49 U	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--

Table 3.1

Summary of Analytical Results - EI CA750 First Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operations Facility
Bedford, Indiana

Sample Location		MW-X227Y054	MW-X261Y356D-3	MW-X277Y100	MW-X297Y305D-2	MW-X300Y199I-1	MW-X300Y199I-2	MW-X315Y115	MW-X315Y150	MW-X315Y150	ST-59	ST-59	Tributary 3-3	Trip Blank	Trip Blank	Trip Blank
Sample Identification		GW-052422-KH-11	GW-052622-KH-27	GW-052422-MC-12	GW-052622-KH-25	GW-052522-KH-21	GW-052522-KH-19	GW-052422-MC-10	GW-052422-MC-06	GW-052422-MC-08	GW-052422-KH-13	GW-052622-JL-26	GW-052622-JL-24	TB-052422-MC-01	TB-052522-MC-02	TB-052622-MC-03
Sample Date		05/24/2022	05/26/2022	05/24/2022	05/26/2022	05/25/2022	05/25/2022	05/24/2022	05/24/2022	05/24/2022	05/24/2022	05/26/2022	05/26/2022	05/24/2022	05/25/2022	05/26/2022
Sample Type										Duplicate						
Parameters	**Units**															
N-Nitrosodi-n-propylamine	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	ug/L	--	--	9.7 U	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds (VOCs)																
1,1,1-Trichloroethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,1,2,2-Tetrachloroethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,1,2-Trichloroethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,1-Dichloroethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,1-Dichloroethene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,2,4-Trichlorobenzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	--	2.0 U	--	--	--	--	--	--	--	--	--	2.0 U	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
1,2-Dichlorobenzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,2-Dichloroethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,2-Dichloropropane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,3-Dichlorobenzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
1,4-Dichlorobenzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	--	10 U	--	--	--	--	--	--	--	--	--	10 U	--	--
2-Chloroethyl vinyl ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--
2-Hexanone	ug/L	--	--	10 U	--	--	--	--	--	--	--	--	--	10 U	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	--	10 U	--	--	--	--	--	--	--	--	--	10 U	--	--
Acetone	ug/L	--	--	10 U	--	--	--	--	--	--	--	--	--	10 U	--	--
Benzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Bromodichloromethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Bromoform	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Bromomethane (Methyl bromide)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Carbon disulfide	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Carbon tetrachloride	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Chlorobenzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Chloroethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Chloroform (Trichloromethane)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Chloromethane (Methyl chloride)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
cis-1,2-Dichloroethene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
cis-1,3-Dichloropropene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Cyclohexane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Dibromochloromethane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Dichlorodifluoromethane (CFC-12)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Ethylbenzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Isopropyl benzene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Methyl acetate	ug/L	--	--	10 U	--	--	--	--	--	--	--	--	--	10 U	--	--
Methyl cyclohexane	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Methyl tert butyl ether (MTBE)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Methylene chloride	ug/L	--	--	5.0 U	--	--	--	--	--	--	--	--	--	5.0 U	5.0 U	--
Styrene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Tetrachloroethene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Toluene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
trans-1,2-Dichloroethene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
trans-1,3-Dichloropropene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Trichloroethene	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Trichlorofluoromethane (CFC-11)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--
Trifluorotrichloroethane (CFC-113)	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	--	--
Vinyl chloride	ug/L	--	--	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	--	--	2.0 U	--	--	--	--	--	--	--	--	--	2.0 U	--	--
General Chemistry																
Chloride	ug/L	--	--	--	--	--	--	--	--	--	--	3400	--	--	--	--
Field Parameters																
Conductivity, field	uS/cm	1.334	0.605	1.209	0.696	0.511	0.579	0.600	0.497	0.497	0.445	--	0.437	--	--	--
Dissolved oxygen (DO), field	ug/L	850	1750	1710	800	520	280	3700	2440	2440	9460	--	5730	--	--	--
Oxidation reduction potential (ORP), field	millivolts	--	84.2	-171.9	55.8	37.5	21.3	-89.1	-65.0	-65.0	59.0	--	5.5	--	--	--
pH, field	s.u.	7.20	7.29	5.70	7.02	7.16	7.08	6.97	6.87	6.87	8.06	--	7.99	--	--	--
Temperature, sample	Deg C	15.87	15.52	15.91	13.95	14.38	16.76	14.79	15.16	15.16	9.46	--	20.51	--	--	--
Turbidity, field	NTU	18.3	0.40	1.96	0.31	2.84	2.12	4.59	10.39	10.39	2.27	--	11.0	--	--	--

Notes:
U - Not detected at the associated reporting limit.
J - Estimated concentration.
R - Rejected.
J - Estimated concentration, result may be biased low.

Table 3.2

Summary of Analytical Results - EI CA750 Second Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operation Facility
Bedford, Indiana

Area		EastPlantArea	A007_EastPlantArea	EastPlantArea	EastPlantArea	EastPlantArea	EastPlantArea	ngWell_RFIBoundary_WestF	Plant_property	Plant_property	01MonitoringWell_WestPlantA 1	MonitoringWell_WestPlant/	A001	A001
Sample Location		9-4	CH-20	CH-42	CH-42A	CH-43	CH-44	MW-X033Y147S	MW-X043Y176	MW-X047Y236	MW-X085Y070S-1	MW-X085Y070S-2	MW-X146Y084	MW-X146Y084
Sample Identification		GW-120122-SS-21	GW-120122-SS-23	GW-112922-DS-04	GW-112822-DS-02	GW-112922-DS-06	GW-112822-AC-01	GW-113022-AC-13	GW-113022-AC-09	GW-113022-AC-11	GW-120122-DS-20	GW-120122-DS-22	GW-113022-AC-15	GW-113022-AC-17
Sample Date		12/01/2022	12/01/2022	11/29/2022	11/28/2022	11/29/2022	11/28/2022	11/30/2022	11/30/2022	11/30/2022	12/01/2022	12/01/2022	11/30/2022	11/30/2022
Sample Type														Duplicate
Parameters	Units													
PCBs														
Aroclor-1016 (PCB-1016)	ug/L	0.49 U	0.10 U	0.097 U	0.096 U	0.095 U	0.098 U	0.096 U	0.095 U	0.095 U	0.10 U	0.10 U	0.095 U	0.10 U
Aroclor-1221 (PCB-1221)	ug/L	0.49 U	0.10 U	0.097 U	0.096 U	0.095 U	0.098 U	0.096 U	0.095 U	0.095 U	0.10 U	0.10 U	0.095 U	0.10 U
Aroclor-1232 (PCB-1232)	ug/L	0.49 U	0.10 U	0.097 U	0.096 U	0.095 U	0.098 U	0.096 U	0.095 U	0.095 U	0.10 U	0.10 U	0.095 U	0.10 U
Aroclor-1242 (PCB-1242)	ug/L	6.8 J	0.082 J	0.54	0.079 J	0.095 U	0.098 U	0.096 U	0.095 U	0.095 U	0.10 U	0.17 J	0.095 U	0.10 U
Aroclor-1248 (PCB-1248)	ug/L	0.49 U	0.10 U	0.097 U	0.096 U	0.095 U	0.098 U	0.096 U	0.095 U	0.095 U	0.10 U	0.10 U	0.095 U	0.10 U
Aroclor-1254 (PCB-1254)	ug/L	0.49 U	0.10 U	0.097 U	0.096 U	0.095 U	0.098 U	0.096 U	0.095 U	0.095 U	0.10 U	0.10 U	0.095 U	0.10 U
Aroclor-1260 (PCB-1260)	ug/L	0.49 U	0.10 U	0.097 U	0.096 U	0.095 U	0.098 U	0.096 U	0.095 U	0.095 U	0.10 U	0.10 U	0.095 U	0.10 U
Total PCBs	ug/L	6.8 J	0.082 J	0.54	0.079 J	ND	ND	ND	ND	ND	ND	0.17 J	ND	ND
Aroclor-1016 (PCB-1016) (dissolved)	ug/L	0.50 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.10 U	0.11 U	0.10 U	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	ug/L	0.50 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.10 U	0.11 U	0.10 U	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	ug/L	0.50 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.10 U	0.11 U	0.10 U	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	ug/L	1.4	0.095 U	0.37	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.10 U	0.11 U	0.10 U	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	ug/L	0.50 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.10 U	0.11 U	0.10 U	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	ug/L	0.50 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.10 U	0.11 U	0.10 U	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	ug/L	0.50 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.10 U	0.11 U	0.10 U	0.095 U
Total PCBs (dissolved)	ug/L	1.4	ND	0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (SVOCs)														
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
3&4-Methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetophenone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Atrazine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzaldehyde	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Caprolactam	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 3.2

Summary of Analytical Results - EI CA750 Second Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operation Facility
Bedford, Indiana

Sample Location		**9-4**	**CH-20**	**CH-42**	**CH-42A**	**CH-43**	**CH-44**	**MW-X033Y147S**	**MW-X043Y176**	**MW-X047Y236**	**MW-X085Y070S-1**	**MW-X085Y070S-2**	**MW-X146Y084**	**MW-X146Y084**
Sample Identification		**GW-120122-SS-21**	**GW-120122-SS-23**	**GW-112922-DS-04**	**GW-112822-DS-02**	**GW-112922-DS-06**	**GW-112822-AC-01**	**GW-113022-AC-13**	**GW-113022-AC-09**	**GW-113022-AC-11**	**GW-120122-DS-20**	**GW-120122-DS-22**	**GW-113022-AC-15**	**GW-113022-AC-17**
Sample Date		**12/01/2022**	**12/01/2022**	**11/29/2022**	**11/28/2022**	**11/29/2022**	**11/28/2022**	**11/30/2022**	**11/30/2022**	**11/30/2022**	**12/01/2022**	**12/01/2022**	**11/30/2022**	**11/30/2022**
Sample Type														**Duplicate**
Parameters	**Units**													
Isophorone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Volatile Organic Compounds (VOCs)														
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Chloroethyl vinyl ether	ug/L	10 U	10 U	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Bromoform	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Cyclohexane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Isopropyl benzene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl cyclohexane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	ug/L	5.0 U	5.0 U	--	--	--	--	--	--	--	--	--	--	--
Styrene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Toluene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	--
Trifluorotrichloroethane (CFC-113)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U
Xylenes (total)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
General Chemistry														
Chloride	ug/L	--	--	--	--	--	--	--	--	--	--	--	2000000	2000000
Field Parameters														
Conductivity, field	uS/cm	515	532	1259	1084	1316	0.919	2.053	2.195	0.828	1608	7996	--	--
Dissolved oxygen (DO), field	ug/L	1490	1280	3840	3190	6060	9550	510	6560	840	8240	9710	--	--
Oxidation reduction potential (ORP), field	millivolts	-134.4	-182.8	-182.6	-230.6	-323.4	121.3	8.3	-65.0	-77.6	-347.5	-221.2	--	--
pH, field	s.u.	7.46	8.10	7.40	7.51	7.06	7.19	6.69	6.56	7.18	7.23	7.55	--	--
Temperature, sample	Deg C	13.78	13.05	13.99	13.62	13.86	11.36	14.43	12.29	10.06	12.45	12.79	--	--
Turbidity, field	NTU	5.08	5.64	1.97	0.73	3.19	2.79	4.79	2.31	1.83	2.60	69.1	--	--

Table 3.2

Summary of Analytical Results - EI CA750 Second Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operation Facility
Bedford, Indiana

Area		A001MonitoringWell_WestPlantArea	A001MonitoringWell_WestPlantArea	EastPlantArea	EastPlantArea	RFIBoundary_P216West	P205	P216GM_P216_east	P209	P209	P006	P006	P006	A001
Sample Location		MW-X169Y058S-1	MW-X169Y058S-1	MW-X227Y054	MW-X242Y060S	MW-X261Y356D-3	MW-X277Y100	MW-X297Y305D-2	MW-X300Y199I-1	MW-X300Y199I-2	MW-X315Y115	MW-X315Y150	MW-X315Y150	ST-59
Sample Identification		GW-120122-DS-24	GW-120122-DS-26	GW-112922-DS-10	GW-120122-DS-27	GW-113022-DS-14	GW-113022-DS-12	GW-112922-DS-08	GW-113022-DS-16	GW-113022-DS-18	GW-112922-AC-07	GW-112922-AC-03	GW-112922-AC-05	GW-113022-SS-17
Sample Date		12/01/2022	12/01/2022	11/29/2022	12/01/2022	11/30/2022	11/30/2022	11/29/2022	11/30/2022	11/30/2022	11/29/2022	11/29/2022	11/29/2022	11/30/2022
Sample Type			Duplicate										Duplicate	
Parameters	Units													
PCBs														
Aroclor-1016 (PCB-1016)	ug/L	0.097 U	0.096 U	1.9 U	48 U	0.10 U	0.095 U	0.095 U	0.095 U	0.099 U	0.11 U	0.097 U	0.095 U	0.10 U
Aroclor-1221 (PCB-1221)	ug/L	0.097 U	0.096 U	1.9 U	48 U	0.10 U	0.095 U	0.095 U	0.095 U	0.099 U	0.11 U	0.097 U	0.095 U	0.10 U
Aroclor-1232 (PCB-1232)	ug/L	0.097 U	0.096 U	1.9 U	48 U	0.10 U	0.095 U	0.095 U	0.095 U	0.099 U	0.11 U	0.097 U	0.095 U	0.10 U
Aroclor-1242 (PCB-1242)	ug/L	0.097 U	0.096 U	21	330	0.10 U	0.095 U	0.095 U	0.095 U	0.099 U	0.11 U	0.14	0.12	0.10 U
Aroclor-1248 (PCB-1248)	ug/L	0.097 U	0.096 U	1.9 U	48 U	0.10 U	0.095 U	0.095 U	0.095 U	0.099 U	0.11 U	0.097 U	0.095 U	0.10 U
Aroclor-1254 (PCB-1254)	ug/L	0.097 U	0.096 U	1.9 U	48 U	0.10 U	0.095 U	0.095 U	0.095 U	0.099 U	0.11 U	0.097 U	0.095 U	0.10 U
Aroclor-1260 (PCB-1260)	ug/L	0.097 U	0.096 U	1.9 U	48 U	0.10 U	0.095 U	0.095 U	0.095 U	0.099 U	0.11 U	0.097 U	0.095 U	0.10 U
Total PCBs	ug/L	ND	ND	21	330	ND	ND	ND	ND	ND	ND	0.14	0.12	ND
Aroclor-1016 (PCB-1016) (dissolved)	ug/L	0.10 U	0.10 U	0.48 U	9.5 U	0.098 U	0.095 U	0.095 U	0.095 U	0.12 U	0.095 U	0.13 U	0.096 U	0.11 U
Aroclor-1221 (PCB-1221) (dissolved)	ug/L	0.10 U	0.10 U	0.48 U	9.5 U	0.098 U	0.095 U	0.095 U	0.095 U	0.12 U	0.095 U	0.13 U	0.096 U	0.11 U
Aroclor-1232 (PCB-1232) (dissolved)	ug/L	0.10 U	0.10 U	0.48 U	9.5 U	0.098 U	0.095 U	0.095 U	0.095 U	0.12 U	0.095 U	0.13 U	0.096 U	0.11 U
Aroclor-1242 (PCB-1242) (dissolved)	ug/L	0.10 U	0.10 U	2.7	150	0.098 U	0.095 U	0.095 U	0.095 U	0.12 U	0.095 U	0.13 U	0.096 U	0.11 U
Aroclor-1248 (PCB-1248) (dissolved)	ug/L	0.10 U	0.10 U	0.48 U	9.5 U	0.098 U	0.095 U	0.095 U	0.095 U	0.12 U	0.095 U	0.13 U	0.096 U	0.11 U
Aroclor-1254 (PCB-1254) (dissolved)	ug/L	0.10 U	0.10 U	0.48 U	9.5 U	0.098 U	0.095 U	0.095 U	0.095 U	0.12 U	0.095 U	0.13 U	0.096 U	0.11 U
Aroclor-1260 (PCB-1260) (dissolved)	ug/L	0.10 U	0.10 U	0.48 U	9.5 U	0.098 U	0.095 U	0.095 U	0.095 U	0.12 U	0.095 U	0.13 U	0.096 U	0.11 U
Total PCBs (dissolved)	ug/L	ND	ND	2.7	150	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (SVOCs)														
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2,4-Dichlorophenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2,4-Dimethylphenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2,4-Dinitrophenol	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2-Chloronaphthalene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2-Chlorophenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2-Methylphenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
2-Nitroaniline	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
2-Nitrophenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
3&4-Methylphenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
3-Nitroaniline	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
4-Chloroaniline	ug/L	--	--	--	--	--	R	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
4-Nitroaniline	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
4-Nitrophenol	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
Acenaphthene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Acenaphthylene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Acetophenone	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Anthracene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Atrazine	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Benzaldehyde	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Caprolactam	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Carbazole	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Chrysene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Dibenzofuran	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Diethyl phthalate	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Dimethyl phthalate	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Fluoranthene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Fluorene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Hexachlorobenzene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Hexachlorobutadiene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	ug/L	--	--	--	--	--	49 U	--	--	--	--	--	--	--
Hexachloroethane	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--

Table 3.2

Summary of Analytical Results - EI CA750 Second Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operation Facility
Bedford, Indiana

Sample Location		MW-X169Y058S-1	MW-X169Y058S-1	MW-X227Y054	MW-X242Y060S	MW-X261Y356D-3	MW-X277Y100	MW-X297Y305D-2	MW-X300Y199I-1	MW-X300Y199I-2	MW-X315Y115	MW-X315Y150	MW-X315Y150	ST-59
Sample Identification		**GW-120122-DS-24**	**GW-120122-DS-26**	**GW-112922-DS-10**	**GW-120122-DS-27**	**GW-113022-DS-14**	**GW-113022-DS-12**	**GW-112922-DS-08**	**GW-113022-DS-16**	**GW-113022-DS-18**	**GW-112922-AC-07**	**GW-112922-AC-03**	**GW-112922-AC-05**	**GW-113022-SS-17**
Sample Date		**12/01/2022**	**12/01/2022**	**11/29/2022**	**12/01/2022**	**11/30/2022**	**11/30/2022**	**11/29/2022**	**11/30/2022**	**11/30/2022**	**11/29/2022**	**11/29/2022**	**11/29/2022**	**11/30/2022**
Sample Type			**Duplicate**										**Duplicate**	
Parameters	**Units**													
Isophorone	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Naphthalene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Nitrobenzene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Pentachlorophenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Phenanthrene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Phenol	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Pyrene	ug/L	--	--	--	--	--	9.8 U	--	--	--	--	--	--	--
Volatile Organic Compounds (VOCs)														
1,1,1-Trichloroethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	--	--	--	--	2.0 U	--	--	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,2-Dichloroethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	--	--	--	--	10 U	--	--	--	--	--	--	--
2-Chloroethyl vinyl ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Hexanone	ug/L	--	--	--	--	--	10 U	--	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	--	--	--	--	10 U	--	--	--	--	--	--	--
Acetone	ug/L	--	--	--	--	--	10 U	--	--	--	--	--	--	--
Benzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Bromodichloromethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Bromoform	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Bromomethane (Methyl bromide)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Carbon disulfide	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Carbon tetrachloride	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Chlorobenzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Chloroethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Chloroform (Trichloromethane)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Chloromethane (Methyl chloride)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Cyclohexane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Ethylbenzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Isopropyl benzene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Methyl acetate	ug/L	--	--	--	--	--	10 U	--	--	--	--	--	--	--
Methyl cyclohexane	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Methylene chloride	ug/L	--	--	--	--	--	5.0 U	--	--	--	--	--	--	--
Styrene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Tetrachloroethene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Toluene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Trichloroethene	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Trifluorotrichloroethane (CFC-113)	ug/L	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--
Vinyl chloride	ug/L	0.59 J	0.67 J	--	--	--	1.0 U	--	--	--	--	--	--	--
Xylenes (total)	ug/L	--	--	--	--	--	2.0 U	--	--	--	--	--	--	--
General Chemistry														
Chloride	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	5900
Field Parameters														
Conductivity, field	uS/cm	3441	3441	22.49	1729	836	1616	1190	848	864	0.595	0.399	0.399	299
Dissolved oxygen (DO), field	ug/L	7540	7540	2660	1090	7460	8530	6240	740	9050	2940	580	580	10450
Oxidation reduction potential (ORP), field	millivolts	-274.7	-274.7	-339.8	-319.8	-319.9	-265.0	-324.0	-332.4	-176.8	-77.0	-72.1	-72.1	99.1
pH, field	s.u.	7.54	7.54	7.20	6.85	7.75	7.55	6.80	7.07	7.88	7.92	7.36	7.36	8.45
Temperature, sample	Deg C	13.25	13.25	13.79	12.47	11.96	12.85	13.84	13.20	12.71	13.74	14.26	14.26	12.12
Turbidity, field	NTU	3.15	3.15	1.03	2.88	1.15	1.93	0.36	1.26	4.19	5.99	17.3	17.3	1.01

Table 3.2

Summary of Analytical Results - EI CA750 Second Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operation Facility
Bedford, Indiana

Area		**P015**		
Sample Location		**Tributary 3-3**	**Trip Blank**	**Trip Blank**
Sample Identification		**GW-120122-JL-25**	**TRIP BLANK**	**TRIP BLANK**
Sample Date		**12/01/2022**	**11/30/2022**	**12/01/2022**
Sample Type				
Parameters	**Units**			
PCBs				
Aroclor-1016 (PCB-1016)	ug/L	0.098 U	--	--
Aroclor-1221 (PCB-1221)	ug/L	0.098 U	--	--
Aroclor-1232 (PCB-1232)	ug/L	0.098 U	--	--
Aroclor-1242 (PCB-1242)	ug/L	0.098 U	--	--
Aroclor-1248 (PCB-1248)	ug/L	0.098 U	--	--
Aroclor-1254 (PCB-1254)	ug/L	0.098 U	--	--
Aroclor-1260 (PCB-1260)	ug/L	0.098 U	--	--
Total PCBs	ug/L	ND	--	--
Aroclor-1016 (PCB-1016) (dissolved)	ug/L	0.097 U	--	--
Aroclor-1221 (PCB-1221) (dissolved)	ug/L	0.097 U	--	--
Aroclor-1232 (PCB-1232) (dissolved)	ug/L	0.097 U	--	--
Aroclor-1242 (PCB-1242) (dissolved)	ug/L	0.097 U	--	--
Aroclor-1248 (PCB-1248) (dissolved)	ug/L	0.097 U	--	--
Aroclor-1254 (PCB-1254) (dissolved)	ug/L	0.097 U	--	--
Aroclor-1260 (PCB-1260) (dissolved)	ug/L	0.097 U	--	--
Total PCBs (dissolved)	ug/L	ND	--	--
Semi-Volatile Organic Compounds (SVOCs)				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	--	--	--
2,4,5-Trichlorophenol	ug/L	--	--	--
2,4,6-Trichlorophenol	ug/L	--	--	--
2,4-Dichlorophenol	ug/L	--	--	--
2,4-Dimethylphenol	ug/L	--	--	--
2,4-Dinitrophenol	ug/L	--	--	--
2,4-Dinitrotoluene	ug/L	--	--	--
2,6-Dinitrotoluene	ug/L	--	--	--
2-Chloronaphthalene	ug/L	--	--	--
2-Chlorophenol	ug/L	--	--	--
2-Methylnaphthalene	ug/L	--	--	--
2-Methylphenol	ug/L	--	--	--
2-Nitroaniline	ug/L	--	--	--
2-Nitrophenol	ug/L	--	--	--
3&4-Methylphenol	ug/L	--	--	--
3,3'-Dichlorobenzidine	ug/L	--	--	--
3-Nitroaniline	ug/L	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	--	--
4-Bromophenyl phenyl ether	ug/L	--	--	--
4-Chloro-3-methylphenol	ug/L	--	--	--
4-Chloroaniline	ug/L	--	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--
4-Nitroaniline	ug/L	--	--	--
4-Nitrophenol	ug/L	--	--	--
Acenaphthene	ug/L	--	--	--
Acenaphthylene	ug/L	--	--	--
Acetophenone	ug/L	--	--	--
Anthracene	ug/L	--	--	--
Atrazine	ug/L	--	--	--
Benzaldehyde	ug/L	--	--	--
Benzo(a)anthracene	ug/L	--	--	--
Benzo(a)pyrene	ug/L	--	--	--
Benzo(b)fluoranthene	ug/L	--	--	--
Benzo(g,h,i)perylene	ug/L	--	--	--
Benzo(k)fluoranthene	ug/L	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	--	--
bis(2-Chloroethoxy)methane	ug/L	--	--	--
bis(2-Chloroethyl)ether	ug/L	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	--	--
Butyl benzylphthalate (BBP)	ug/L	--	--	--
Caprolactam	ug/L	--	--	--
Carbazole	ug/L	--	--	--
Chrysene	ug/L	--	--	--
Dibenz(a,h)anthracene	ug/L	--	--	--
Dibenzofuran	ug/L	--	--	--
Diethyl phthalate	ug/L	--	--	--
Dimethyl phthalate	ug/L	--	--	--
Di-n-butylphthalate (DBP)	ug/L	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	--	--
Fluoranthene	ug/L	--	--	--
Fluorene	ug/L	--	--	--
Hexachlorobenzene	ug/L	--	--	--
Hexachlorobutadiene	ug/L	--	--	--
Hexachlorocyclopentadiene	ug/L	--	--	--
Hexachloroethane	ug/L	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	--	--	--

Table 3.2

Summary of Analytical Results - EI CA750 Second Half 2022
East Plant TSCA Vault Annual Report - Calendar Year 2022
GM Bedford Casting Operation Facility
Bedford, Indiana

Sample Location		**Tributary 3-3**	**Trip Blank**	**Trip Blank**
Sample Identification		**GW-120122-JL-25**	**TRIP BLANK**	**TRIP BLANK**
Sample Date		**12/01/2022**	**11/30/2022**	**12/01/2022**
Sample Type				
Parameters	**Units**			
Isophorone	ug/L	--	--	--
Naphthalene	ug/L	--	--	--
Nitrobenzene	ug/L	--	--	--
N-Nitrosodi-n-propylamine	ug/L	--	--	--
N-Nitrosodiphenylamine	ug/L	--	--	--
Pentachlorophenol	ug/L	--	--	--
Phenanthrene	ug/L	--	--	--
Phenol	ug/L	--	--	--
Pyrene	ug/L	--	--	--
Volatile Organic Compounds (VOCs)				
1,1,1-Trichloroethane	ug/L	--	1.0 U	--
1,1,2,2-Tetrachloroethane	ug/L	--	1.0 U	--
1,1,2-Trichloroethane	ug/L	--	1.0 U	--
1,1-Dichloroethane	ug/L	--	1.0 U	--
1,1-Dichloroethene	ug/L	--	1.0 U	--
1,2,4-Trichlorobenzene	ug/L	--	1.0 U	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	2.0 U	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	1.0 U	--
1,2-Dichlorobenzene	ug/L	--	1.0 U	--
1,2-Dichloroethane	ug/L	--	1.0 U	--
1,2-Dichloropropane	ug/L	--	1.0 U	--
1,3-Dichlorobenzene	ug/L	--	1.0 U	--
1,4-Dichlorobenzene	ug/L	--	1.0 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	10 U	--
2-Chloroethyl vinyl ether	ug/L	--	--	--
2-Hexanone	ug/L	--	10 U	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	10 U	--
Acetone	ug/L	--	10 U	--
Benzene	ug/L	--	1.0 U	--
Bromodichloromethane	ug/L	--	1.0 U	--
Bromoform	ug/L	--	1.0 U	--
Bromomethane (Methyl bromide)	ug/L	--	1.0 U	--
Carbon disulfide	ug/L	--	1.0 U	--
Carbon tetrachloride	ug/L	--	1.0 U	--
Chlorobenzene	ug/L	--	1.0 U	--
Chloroethane	ug/L	--	1.0 U	--
Chloroform (Trichloromethane)	ug/L	--	1.0 U	--
Chloromethane (Methyl chloride)	ug/L	--	1.0 U	--
cis-1,2-Dichloroethene	ug/L	--	1.0 U	--
cis-1,3-Dichloropropene	ug/L	--	1.0 U	--
Cyclohexane	ug/L	--	1.0 U	--
Dibromochloromethane	ug/L	--	1.0 U	--
Dichlorodifluoromethane (CFC-12)	ug/L	--	1.0 U	--
Ethylbenzene	ug/L	--	1.0 U	--
Isopropyl benzene	ug/L	--	1.0 U	--
Methyl acetate	ug/L	--	10 U	--
Methyl cyclohexane	ug/L	--	1.0 U	--
Methyl tert butyl ether (MTBE)	ug/L	--	1.0 U	--
Methylene chloride	ug/L	--	5.0 U	--
Styrene	ug/L	--	1.0 U	--
Tetrachloroethene	ug/L	--	1.0 U	--
Toluene	ug/L	--	1.0 U	--
trans-1,2-Dichloroethene	ug/L	--	1.0 U	--
trans-1,3-Dichloropropene	ug/L	--	1.0 U	--
Trichloroethene	ug/L	--	1.0 U	--
Trichlorofluoromethane (CFC-11)	ug/L	--	1.0 U	--
Trifluorotrichloroethane (CFC-113)	ug/L	--	1.0 U	--
Vinyl chloride	ug/L	--	1.0 U	1.0 U
Xylenes (total)	ug/L	--	2.0 U	--
General Chemistry				
Chloride	ug/L	--	--	--
Field Parameters				
Conductivity, field	uS/cm	0.737	--	--
Dissolved oxygen (DO), field	ug/L	9420	--	--
Oxidation reduction potential (ORP), field	millivolts	80.1	--	--
pH, field	s.u.	7.56	--	--
Temperature, sample	Deg C	8.06	--	--
Turbidity, field	NTU	3.69	--	--

Notes:
U - Not detected at the associated reporting limit.
J - Estimated concentration.
R - Rejected.

Table 3.3

2022 LCS and LDS Analytical Results
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operatons Facility
Bedford, Indiana

Sample Location		EPA LCS	EPA LCS	EPA LCS	EPA LCS	EPA LCS	EPA LCS	EPA LDS	EPA LDS
Sample Identification		WW-A007-070522-MC-41423	WW-A007-080322-MC-41439	WW-A007-090822-MC-41448	WW-A007-101122-MC-41465	WW-A007-110822-MC-41474	WW-A007-120622-MC-41483	WW-A007-070522-MC-41424	WW-A007-080322-MC-41440
Sample Date		07/05/2022	08/03/2022	09/08/2022	10/11/2022	11/08/2022	12/06/2022	07/05/2022	08/03/2022
Sample Type									
Area		A007	A007	A007	A007	A007	A007	A007	A007
Parameters	Units								
Polychlorinated biphenyl (PCBs)									
Aroclor-1016 (PCB-1016)	µg/L	0.095 U	0.48 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.48 U
Aroclor-1221 (PCB-1221)	µg/L	0.095 U	0.48 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.48 U
Aroclor-1232 (PCB-1232)	µg/L	0.095 U	0.48 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.48 U
Aroclor-1242 (PCB-1242)	µg/L	0.30	0.48 U	0.095 U	0.46	0.24	0.25	0.13	0.48 U
Aroclor-1248 (PCB-1248)	µg/L	0.095 U	1.0	0.35	0.095 U	0.095 U	0.095 U	0.095 U	0.48 U
Aroclor-1254 (PCB-1254)	µg/L	0.095 U	0.48 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.48 U
Aroclor-1260 (PCB-1260)	µg/L	0.095 U	0.48 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.48 U
Total PCBs	µg/L	0.3	1	0.35	0.46	0.24	0.25	0.13	ND
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
2-Chloroethyl vinyl ether	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	--	--
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--	--
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Field Parameters									
Conductivity, field	mS/cm	3.5	3.08	3	2.92	2.99	2.85	2.9	1.756
Dissolved oxygen (DO), field	µg/L	1400	1340	2040	2190	4560	6650	2380	2810
Oxidation reduction potential (ORP), field	millivolts	-57	-6	-13	-108	-39	60	-20	-53
pH, field	s.u.	6.9	6.7	7.1	6.8	7.1	7.1	7	6.9
Temperature, sample	Deg F	87.8	69.7	66.92	63	59.54	58.46	75.4	69.3

Table 3.3

2022 LCS and LDS Analytical Results
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operatons Facility
Bedford, Indiana

Sample Location		EPA LDS	EPA LDS	EPA LDS	EPA LDS	EPA LDS
Sample Identification		WW-A007-080322-MC-41441	WW-A007-090822-MC-41449	WW-A007-101122-MC-41466	WW-A007-110822-MC-41475	WW-A007-120622-MC-41484
Sample Date		08/03/2022	09/08/2022	10/11/2022	11/08/2022	12/06/2022
Sample Type		Duplicate				
Area		A007	A007	A007	A007	A007
Parameters	Units					
Polychlorinated biphenyl (PCBs)						
Aroclor-1016 (PCB-1016)	µg/L	0.48 U	0.095 U	0.48 U	0.19 U	0.096 U
Aroclor-1221 (PCB-1221)	µg/L	0.48 U	0.095 U	0.48 U	0.19 U	0.096 U
Aroclor-1232 (PCB-1232)	µg/L	0.48 U	0.095 U	0.48 U	0.19 U	0.096 U
Aroclor-1242 (PCB-1242)	µg/L	0.48 U	0.095 U	0.48 U	0.19 U	0.14 p
Aroclor-1248 (PCB-1248)	µg/L	0.48 U	0.095 U	0.48 U	0.19 U	0.096 U
Aroclor-1254 (PCB-1254)	µg/L	0.48 U	0.095 U	0.48 U	0.19 U	0.096 U
Aroclor-1260 (PCB-1260)	µg/L	0.48 U	0.095 U	0.48 U	0.19 U	0.096 U
Total PCBs	µg/L	ND	ND	ND	ND	0.14 p
Volatile Organic Compounds (VOCs)						
1,1,1-Trichloroethane	µg/L	--	--	--	--	--
1,1,2,2-Tetrachloroethane	µg/L	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethene	µg/L	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichloroethane	µg/L	--	--	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	--	--	--
2-Chloroethyl vinyl ether	µg/L	--	--	--	--	--
Benzene	µg/L	--	--	--	--	--
Bromodichloromethane	µg/L	--	--	--	--	--
Bromoform	µg/L	--	--	--	--	--
Bromomethane (Methyl bromide)	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	--	--	--	--	--
Chlorobenzene	µg/L	--	--	--	--	--
Chloroethane	µg/L	--	--	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	--	--	--
Chloromethane (Methyl chloride)	µg/L	--	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--	--
Dibromochloromethane	µg/L	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	µg/L	--	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--	--
Methylene chloride	µg/L	--	--	--	--	--
Tetrachloroethene	µg/L	--	--	--	--	--
Toluene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	µg/L	--	--	--	--	--
Vinyl chloride	µg/L	--	--	--	--	--
Field Parameters						
Conductivity, field	mS/cm	1.756	2.37	2.17	2.51	2.21
Dissolved oxygen (DO), field	µg/L	2810	1920	1970	4890	7020
Oxidation reduction potential (ORP), field	millivolts	-53	-67	-101	-69	110
pH, field	s.u.	6.9	7.3	7.4	7.2	6.9
Temperature, sample	Deg F	69.3	66.56	62	62.24	57.38

Notes:
U - Not detected at the associated reporting limit.
P-TestAmerica:The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Table 3.4

2022 Groundwater Treatment Plant Monitoring Analytical Results
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Beford, Indiana

Sample Location		HV-6021A	HV-6021A	HV-6021A	HV-6021A	HV-6021A	HV-6021A	HV-6021A
Sample Identification		WW-412-011322-MC-41380	WW-412-011322-MC-41381	WW-412-021022-MC-41386	WW-412-030922-MC-41392	WW-412-041322-MC-41397	WW-412-050922-MC-41410	WW-412-060722-MC-41412
Sample Date		01/13/2022	01/13/2022	02/10/2022	03/09/2022	04/13/2022	05/09/2022	06/07/2022
Sample Type			Duplicate					
Area		P412	P412	P412	P412	P412	P412	P412
Parameters	**Units**							
Polychlorinated biphenyl (PCBs)								
Aroclor-1016 (PCB-1016)	µg/L	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.099 U	0.095 U
Aroclor-1221 (PCB-1221)	µg/L	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.099 U	0.095 U
Aroclor-1232 (PCB-1232)	µg/L	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.099 U	0.095 U
Aroclor-1242 (PCB-1242)	µg/L	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.099 U	0.095 U
Aroclor-1248 (PCB-1248)	µg/L	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.099 U	0.095 U
Aroclor-1254 (PCB-1254)	µg/L	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.099 U	0.095 U
Aroclor-1260 (PCB-1260)	µg/L	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.099 U	0.095 U
Total PCBs	µg/L	ND	ND	ND	ND	ND	ND	ND
Field Parameters								
pH, field	s.u.	7	7	7	7	7	7	7

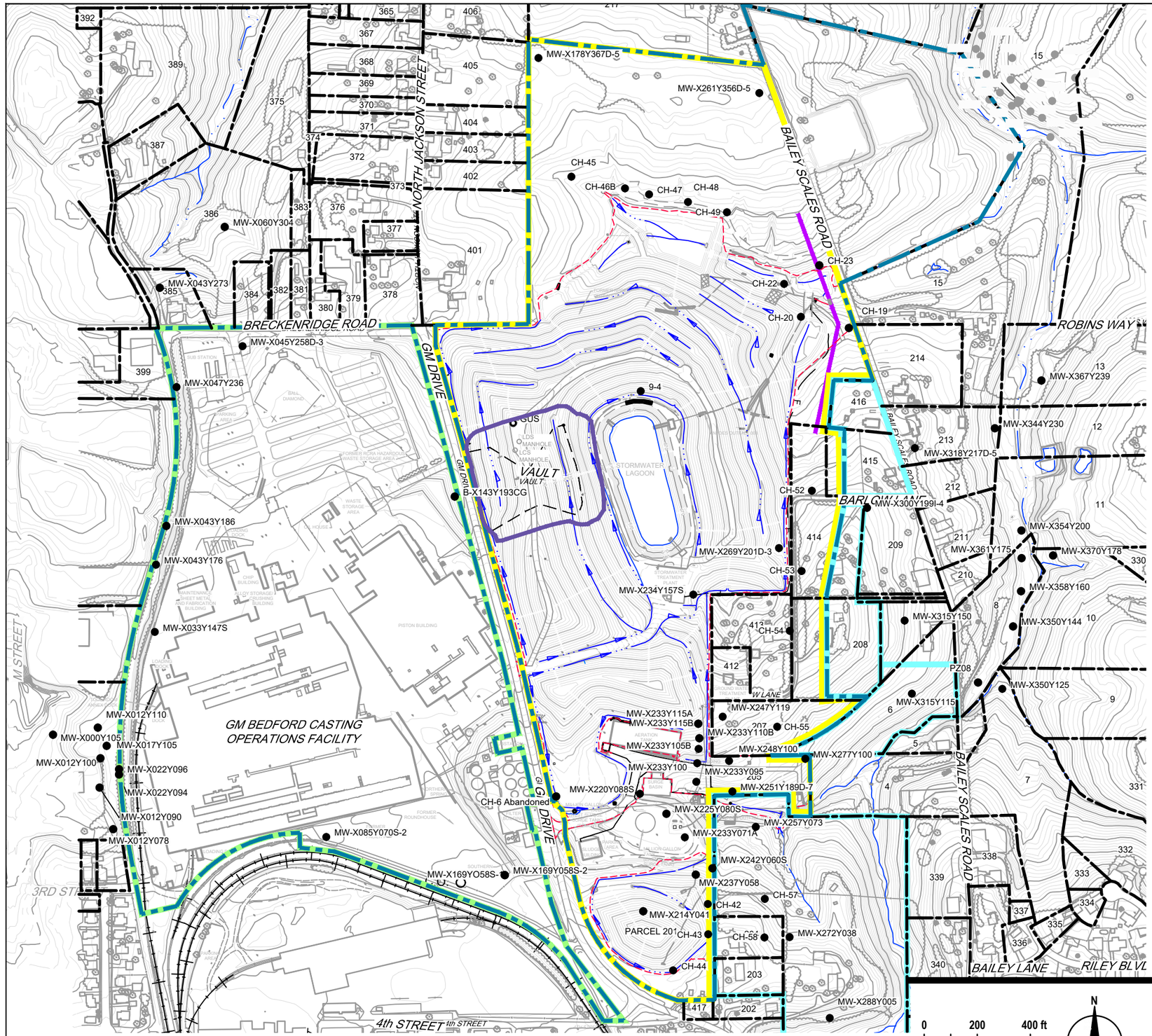
Table 3.4

2022 Groundwater Treatment Plant Monitoring Analytical Results
East Plant Area TSCA Vault Annual Report, Calendar Year 2022
GM Bedford Casting Operations Facility
Beford, Indiana

Sample Location		HV-6021A	HV-6021A	HV-6021A	HV-6021A	HV-6021A	HV-6021A	HV-6021A
Sample Identification		WW-412-070522-MC-41417	WW-412-080322-MC-41437	WW-412-090822-MC-41446	WW-412-101122-MC-41452	WW-412-110822-MC-41472	WW-412-120622-MC-41480	WW-412-120622-MC-41481
Sample Date		07/05/2022	08/03/2022	09/08/2022	10/11/2022	11/08/2022	12/06/2022	12/06/2022
Sample Type								
Area		P412	P412	P412	P412	P412	P412	P412
Parameters	**Units**							
Polychlorinated biphenyl (PCBs)								
Aroclor-1016 (PCB-1016)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U
Aroclor-1221 (PCB-1221)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U
Aroclor-1232 (PCB-1232)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U
Aroclor-1242 (PCB-1242)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U
Aroclor-1248 (PCB-1248)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U
Aroclor-1254 (PCB-1254)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U
Aroclor-1260 (PCB-1260)	µg/L	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U
Total PCBs	µg/L	ND	ND	ND	ND	ND	ND	ND
Field Parameters								
pH, field	s.u.	7	7	7	7	7	7	7

Notes:
U - Not detected at the associated reporting limit.

Figures



LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- FENCE LINE
- RAILROAD TRACKS
- DIRT ROADS
- ROADS / PAVED AREAS
- APPROXIMATE PARCEL PROPERTY
- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE SURFACE WATER LOCATION
- WEST PLANT AREA BOUNDARY
- EAST PLANT AREA BOUNDARY
- GM LLC OWNED RESIDENTIAL PROPERTIES
- VAULT LIMIT
- LIMIT OF EAST PLANT COVER SYSTEM
- GUS — VAULT GROUNDWATER UNDERDRAIN SYSTEM SUMP
- MONITORING WELL SAMPLE LOCATION

SOURCE:
BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001
AND GHD SURVEYS 2002 TO 2009

GM BCO FACILITY
BEDFORD, INDIANA
2022 EAST PLANT AREA VAULT
ANNUAL MONITORING REPORT

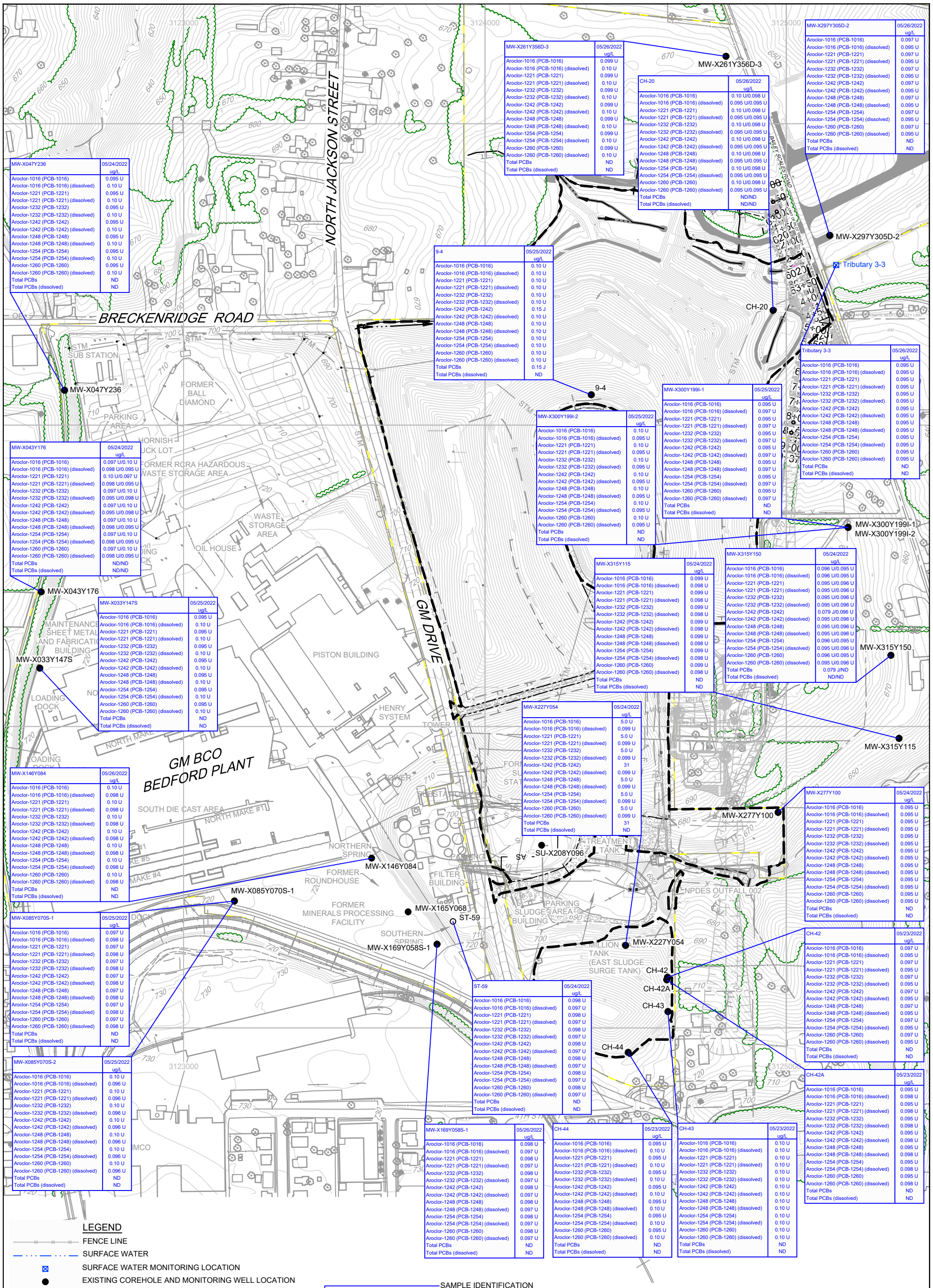
Project No. **11228036**
Date **July 2023**

GROUNDWATER SAMPLING LOCATIONS

FIGURE 3.1

Filename: N:\US\Chicago\Projects\563\11228036\Digital_Design\ACAD\Figures\RPT017\11228036-GHD-00-00-RPT-EN-D104_WA-017.DWG
Plot Date: 10 July 2023 12:11 PM

Data Source: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI. APRIL 2001 AND GHD SURVEYS 2002 TO 2009



MW-X047Y236	05/24/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U
Aroclor-1260 (PCB-1260)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X043Y176	05/24/2022 ug/L
Aroclor-1016 (PCB-1016)	0.097 U/0.10 U
Aroclor-1016 (PCB-1016) (dissolved)	0.098 U/0.095 U
Aroclor-1221 (PCB-1221)	0.10 U/0.097 U
Aroclor-1221 (PCB-1221) (dissolved)	0.098 U/0.095 U
Aroclor-1232 (PCB-1232)	0.097 U/0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U/0.098 U
Aroclor-1242 (PCB-1242)	0.097 U/0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U/0.098 U
Aroclor-1248 (PCB-1248)	0.097 U/0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.098 U/0.095 U
Aroclor-1254 (PCB-1254)	0.097 U/0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.098 U/0.095 U
Aroclor-1260 (PCB-1260)	0.097 U/0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.098 U/0.095 U
Total PCBs	ND/ND
Total PCBs (dissolved)	ND/ND

MW-X033Y147S	05/25/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U
Aroclor-1260 (PCB-1260)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X146Y084	05/26/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1016 (PCB-1016) (dissolved)	0.098 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.098 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.098 U
Aroclor-1242 (PCB-1242)	0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.098 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.098 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.098 U
Aroclor-1260 (PCB-1260)	0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.098 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X085Y070S-1	05/25/2022 ug/L
Aroclor-1016 (PCB-1016)	0.097 U
Aroclor-1016 (PCB-1016) (dissolved)	0.098 U
Aroclor-1221 (PCB-1221)	0.097 U
Aroclor-1221 (PCB-1221) (dissolved)	0.098 U
Aroclor-1232 (PCB-1232)	0.097 U
Aroclor-1232 (PCB-1232) (dissolved)	0.098 U
Aroclor-1242 (PCB-1242)	0.097 U
Aroclor-1242 (PCB-1242) (dissolved)	0.098 U
Aroclor-1248 (PCB-1248)	0.097 U
Aroclor-1248 (PCB-1248) (dissolved)	0.098 U
Aroclor-1254 (PCB-1254)	0.097 U
Aroclor-1254 (PCB-1254) (dissolved)	0.098 U
Aroclor-1260 (PCB-1260)	0.097 U
Aroclor-1260 (PCB-1260) (dissolved)	0.098 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X085Y070S-2	05/25/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1016 (PCB-1016) (dissolved)	0.096 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.096 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.096 U
Aroclor-1242 (PCB-1242)	0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.096 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.096 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.096 U
Aroclor-1260 (PCB-1260)	0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.096 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X261Y356D-3	05/26/2022 ug/L
Aroclor-1016 (PCB-1016)	0.099 U
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U
Aroclor-1221 (PCB-1221)	0.099 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U
Aroclor-1232 (PCB-1232)	0.099 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U
Aroclor-1242 (PCB-1242)	0.099 U
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U
Aroclor-1248 (PCB-1248)	0.099 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U
Aroclor-1254 (PCB-1254)	0.099 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U
Aroclor-1260 (PCB-1260)	0.099 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U
Total PCBs	ND
Total PCBs (dissolved)	ND

CH-20	05/26/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U/0.098 U
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U/0.095 U
Aroclor-1221 (PCB-1221)	0.10 U/0.098 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U/0.095 U
Aroclor-1232 (PCB-1232)	0.10 U/0.098 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U/0.095 U
Aroclor-1242 (PCB-1242)	0.10 U/0.098 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U/0.095 U
Aroclor-1248 (PCB-1248)	0.10 U/0.098 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U/0.095 U
Aroclor-1254 (PCB-1254)	0.10 U/0.098 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U/0.095 U
Aroclor-1260 (PCB-1260)	0.10 U/0.098 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U/0.095 U
Total PCBs	ND/ND
Total PCBs (dissolved)	ND/ND

MW-X297Y305D-2	05/26/2022 ug/L
Aroclor-1016 (PCB-1016)	0.097 U
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221)	0.097 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232)	0.097 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242)	0.097 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248)	0.097 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254)	0.097 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260)	0.097 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs	ND
Total PCBs (dissolved)	ND

9-4	05/25/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U
Aroclor-1242 (PCB-1242)	0.15 J
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U
Aroclor-1260 (PCB-1260)	0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U
Total PCBs	0.15 J
Total PCBs (dissolved)	ND

MW-X300Y199I-2	05/25/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242)	0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260)	0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X300Y199I-1	05/25/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.097 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.097 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.097 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.097 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.097 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.097 U
Aroclor-1260 (PCB-1260)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.097 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X315Y115	05/24/2022 ug/L
Aroclor-1016 (PCB-1016)	0.099 U
Aroclor-1016 (PCB-1016) (dissolved)	0.098 U
Aroclor-1221 (PCB-1221)	0.099 U
Aroclor-1221 (PCB-1221) (dissolved)	0.098 U
Aroclor-1232 (PCB-1232)	0.099 U
Aroclor-1232 (PCB-1232) (dissolved)	0.098 U
Aroclor-1242 (PCB-1242)	0.099 U
Aroclor-1242 (PCB-1242) (dissolved)	0.098 U
Aroclor-1248 (PCB-1248)	0.099 U
Aroclor-1248 (PCB-1248) (dissolved)	0.098 U
Aroclor-1254 (PCB-1254)	0.099 U
Aroclor-1254 (PCB-1254) (dissolved)	0.098 U
Aroclor-1260 (PCB-1260)	0.099 U
Aroclor-1260 (PCB-1260) (dissolved)	0.098 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X315Y150	05/24/2022 ug/L
Aroclor-1016 (PCB-1016)	0.096 U/0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.096 U/0.095 U
Aroclor-1221 (PCB-1221)	0.095 U/0.096 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U/0.096 U
Aroclor-1232 (PCB-1232)	0.095 U/0.096 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U/0.096 U
Aroclor-1242 (PCB-1242)	0.079 J/0.096 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U/0.096 U
Aroclor-1248 (PCB-1248)	0.095 U/0.096 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U/0.096 U
Aroclor-1254 (PCB-1254)	0.096 U/0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U/0.096 U
Aroclor-1260 (PCB-1260)	0.096 U/0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U/0.096 U
Total PCBs	0.079 J/ND
Total PCBs (dissolved)	ND/ND

MW-X227Y054	05/24/2022 ug/L
Aroclor-1016 (PCB-1016)	5.0 U
Aroclor-1016 (PCB-1016) (dissolved)	0.099 U
Aroclor-1221 (PCB-1221)	5.0 U
Aroclor-1221 (PCB-1221) (dissolved)	0.099 U
Aroclor-1232 (PCB-1232)	5.0 U
Aroclor-1232 (PCB-1232) (dissolved)	0.099 U
Aroclor-1242 (PCB-1242)	31
Aroclor-1242 (PCB-1242) (dissolved)	0.099 U
Aroclor-1248 (PCB-1248)	5.0 U
Aroclor-1248 (PCB-1248) (dissolved)	0.099 U
Aroclor-1254 (PCB-1254)	5.0 U
Aroclor-1254 (PCB-1254) (dissolved)	0.099 U
Aroclor-1260 (PCB-1260)	5.0 U
Aroclor-1260 (PCB-1260) (dissolved)	0.099 U
Total PCBs	31
Total PCBs (dissolved)	ND

MW-X277Y100	05/24/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs	ND
Total PCBs (dissolved)	ND

Tributary 3-3	05/26/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs	ND
Total PCBs (dissolved)	ND

CH-42	05/23/2022 ug/L
Aroclor-1016 (PCB-1016)	0.097 U
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221)	0.097 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232)	0.097 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242)	0.097 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248)	0.097 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254)	0.097 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260)	0.097 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs	ND
Total PCBs (dissolved)	ND

CH-42A	05/23/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.098 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.098 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.098 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.098 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.098 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.098 U
Aroclor-1260 (PCB-1260)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.098 U
Total PCBs	ND
Total PCBs (dissolved)	ND

ST-59	05/24/2022 ug/L
Aroclor-1016 (PCB-1016)	0.098 U
Aroclor-1016 (PCB-1016) (dissolved)	0.097 U
Aroclor-1221 (PCB-1221)	0.098 U
Aroclor-1221 (PCB-1221) (dissolved)	0.097 U
Aroclor-1232 (PCB-1232)	0.098 U
Aroclor-1232 (PCB-1232) (dissolved)	0.097 U
Aroclor-1242 (PCB-1242)	0.098 U
Aroclor-1242 (PCB-1242) (dissolved)	0.097 U
Aroclor-1248 (PCB-1248)	0.098 U
Aroclor-1248 (PCB-1248) (dissolved)	0.097 U
Aroclor-1254 (PCB-1254)	0.098 U
Aroclor-1254 (PCB-1254) (dissolved)	0.097 U
Aroclor-1260 (PCB-1260)	0.098 U
Aroclor-1260 (PCB-1260) (dissolved)	0.097 U
Total PCBs	ND
Total PCBs (dissolved)	ND

MW-X169Y058S-1	05/26/2022 ug/L
Aroclor-1016 (PCB-1016)	0.098 U
Aroclor-1016 (PCB-1016) (dissolved)	0.097 U
Aroclor-1221 (PCB-1221)	0.098 U
Aroclor-1221 (PCB-1221) (dissolved)	0.097 U
Aroclor-1232 (PCB-1232)	0.098 U
Aroclor-1232 (PCB-1232) (dissolved)	0.097 U
Aroclor-1242 (PCB-1242)	0.098 U
Aroclor-1242 (PCB-1242) (dissolved)	0.097 U
Aroclor-1248 (PCB-1248)	0.098 U
Aroclor-1248 (PCB-1248) (dissolved)	0.097 U
Aroclor-1254 (PCB-1254)	0.098 U
Aroclor-1254 (PCB-1254) (dissolved)	0.097 U
Aroclor-1260 (PCB-1260)	0.098 U
Aroclor-1260 (PCB-1260) (dissolved)	0.097 U
Total PCBs	ND
Total PCBs (dissolved)	ND

CH-44	05/23/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U
Aroclor-1260 (PCB-1260)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U
Total PCBs	ND
Total PCBs (dissolved)	ND

CH-43	05/23/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U
Aroclor-1242 (PCB-1242)	0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U
Aroclor-1260 (PCB-1260)	0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U
Total PCBs	ND
Total PCBs (dissolved)	ND

LEGEND

- FENCE LINE
- SURFACE WATER
- SURFACE WATER MONITORING LOCATION
- EXISTING COREHOLE AND MONITORING WELL LOCATION
- SAMPLE TAKEN FROM STORM MANHOLE
- 0.69/0.53 U — PARENT/DUPLICATE RESULT
- ND — NOT DETECTED
- U — QUALIFIED NOT DETECTED ABOVE LIMIT

MW-X169Y058S-1	05/26/2022 ug/L
Aroclor-1016 (PCB-1016)	0.098 U
Aroclor-1016 (PCB-1016) (dissolved)	0.097 U

SAMPLE IDENTIFICATION
SAMPLE DATE
SAMPLE UNITS (MICROGRAMS PER LITER)
RESULT
PARAMETER

0 150 300 ft
1" = 300 ft

Coordinate System:
NAD 83 INDIANA STATE PLANES,
WEST ZONE, US FOOT

N

GHD

GM BCO FACILITY
BEDFORD, INDIANA
FIRST HALF 2022 CA750 MONITORING RESULTS

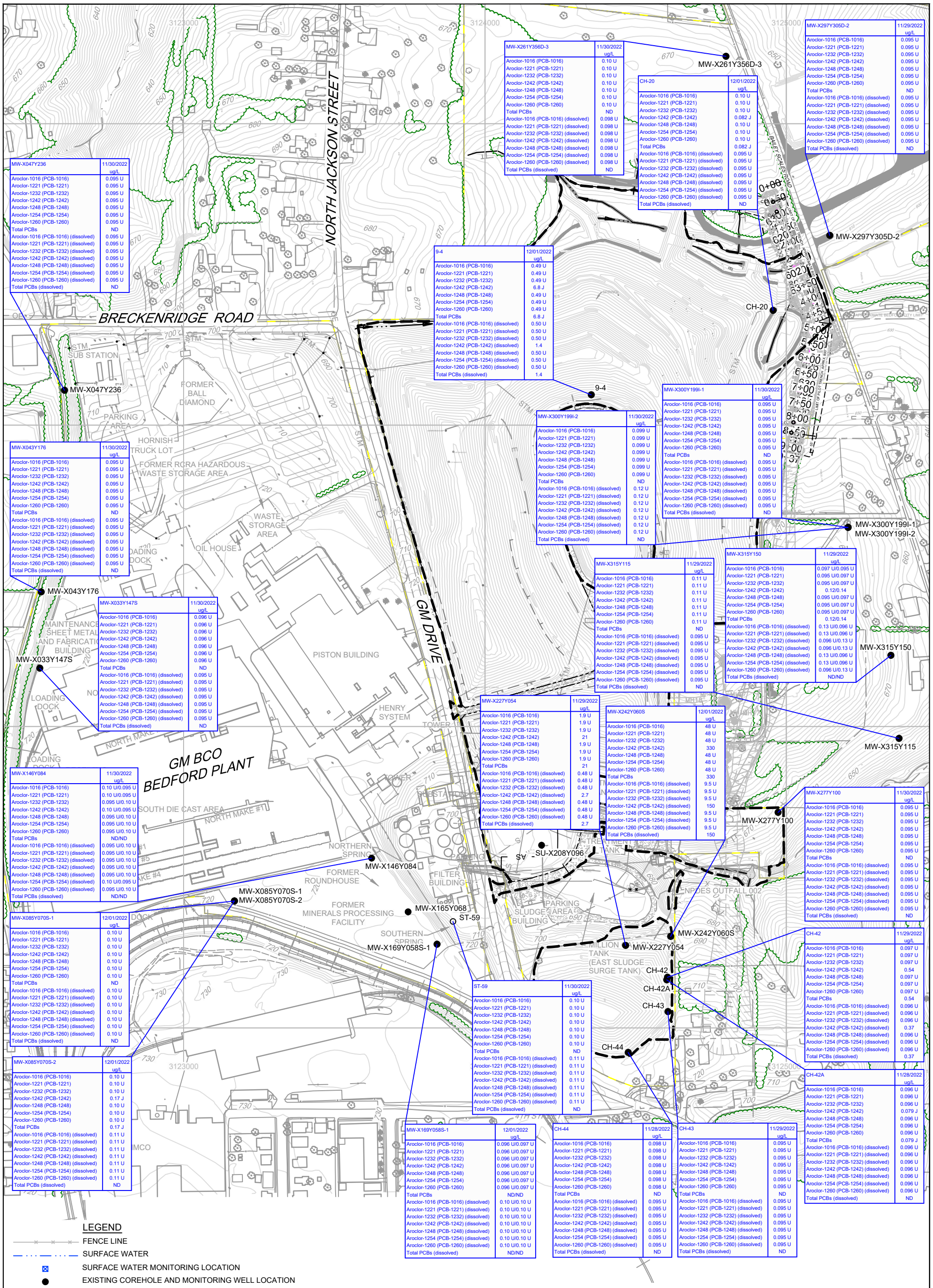
PCBs ANALYTICAL RESULT

Project No. **11228036**
Date **July 2023**

FIGURE 3.2

Filename: N:\US\Chicago\Projects\563\11228036\Digital_Design\ACAD\Figures\RPT017\11228036-GHD-00-00-RPT-EN-D105_WA-017.dwg
Plot Date: 11 July 2023 9:36 AM

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI, APRIL 2001 AND CRA SURVEYS 2002 TO 2013.



MW-X047Y236	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

MW-X043Y176	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

MW-X033Y147S	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.096 U
Aroclor-1221 (PCB-1221)	0.096 U
Aroclor-1232 (PCB-1232)	0.096 U
Aroclor-1242 (PCB-1242)	0.096 U
Aroclor-1248 (PCB-1248)	0.096 U
Aroclor-1254 (PCB-1254)	0.096 U
Aroclor-1260 (PCB-1260)	0.096 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

MW-X146Y084	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U/0.095 U
Aroclor-1221 (PCB-1221)	0.10 U/0.095 U
Aroclor-1232 (PCB-1232)	0.095 U/0.10 U
Aroclor-1242 (PCB-1242)	0.10 U/0.095 U
Aroclor-1248 (PCB-1248)	0.095 U/0.10 U
Aroclor-1254 (PCB-1254)	0.095 U/0.10 U
Aroclor-1260 (PCB-1260)	0.095 U/0.10 U
Total PCBs	ND/ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U/0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U/0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U/0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U/0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U/0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U/0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U/0.10 U
Total PCBs (dissolved)	ND/ND

MW-X085Y070S-1	12/01/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1242 (PCB-1242)	0.10 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1260 (PCB-1260)	0.10 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U
Total PCBs (dissolved)	ND

MW-X085Y070S-2	12/01/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1242 (PCB-1242)	0.17 J
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1260 (PCB-1260)	0.10 U
Total PCBs	0.17 J
Aroclor-1016 (PCB-1016) (dissolved)	0.11 U
Aroclor-1221 (PCB-1221) (dissolved)	0.11 U
Aroclor-1232 (PCB-1232) (dissolved)	0.11 U
Aroclor-1242 (PCB-1242) (dissolved)	0.11 U
Aroclor-1248 (PCB-1248) (dissolved)	0.11 U
Aroclor-1254 (PCB-1254) (dissolved)	0.11 U
Aroclor-1260 (PCB-1260) (dissolved)	0.11 U
Total PCBs (dissolved)	ND

9-4	12/01/2022 ug/L
Aroclor-1016 (PCB-1016)	0.49 U
Aroclor-1221 (PCB-1221)	0.49 U
Aroclor-1232 (PCB-1232)	0.49 U
Aroclor-1242 (PCB-1242)	6.8 J
Aroclor-1248 (PCB-1248)	0.49 U
Aroclor-1254 (PCB-1254)	0.49 U
Aroclor-1260 (PCB-1260)	0.49 U
Total PCBs	6.8 J
Aroclor-1016 (PCB-1016) (dissolved)	0.50 U
Aroclor-1221 (PCB-1221) (dissolved)	0.50 U
Aroclor-1232 (PCB-1232) (dissolved)	0.50 U
Aroclor-1242 (PCB-1242) (dissolved)	1.4
Aroclor-1248 (PCB-1248) (dissolved)	0.50 U
Aroclor-1254 (PCB-1254) (dissolved)	0.50 U
Aroclor-1260 (PCB-1260) (dissolved)	0.50 U
Total PCBs (dissolved)	1.4

MW-X261Y356D-3	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1242 (PCB-1242)	0.10 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1260 (PCB-1260)	0.10 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.098 U
Aroclor-1221 (PCB-1221) (dissolved)	0.098 U
Aroclor-1232 (PCB-1232) (dissolved)	0.098 U
Aroclor-1242 (PCB-1242) (dissolved)	0.098 U
Aroclor-1248 (PCB-1248) (dissolved)	0.098 U
Aroclor-1254 (PCB-1254) (dissolved)	0.098 U
Aroclor-1260 (PCB-1260) (dissolved)	0.098 U
Total PCBs (dissolved)	ND

CH-20	12/01/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1242 (PCB-1242)	0.082 J
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1260 (PCB-1260)	0.10 U
Total PCBs	0.082 J
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

MW-X297Y305D-2	11/29/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

MW-X300Y199I-1	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

MW-X300Y199I-2	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.099 U
Aroclor-1221 (PCB-1221)	0.099 U
Aroclor-1232 (PCB-1232)	0.099 U
Aroclor-1242 (PCB-1242)	0.099 U
Aroclor-1248 (PCB-1248)	0.099 U
Aroclor-1254 (PCB-1254)	0.099 U
Aroclor-1260 (PCB-1260)	0.099 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.12 U
Aroclor-1221 (PCB-1221) (dissolved)	0.12 U
Aroclor-1232 (PCB-1232) (dissolved)	0.12 U
Aroclor-1242 (PCB-1242) (dissolved)	0.12 U
Aroclor-1248 (PCB-1248) (dissolved)	0.12 U
Aroclor-1254 (PCB-1254) (dissolved)	0.12 U
Aroclor-1260 (PCB-1260) (dissolved)	0.12 U
Total PCBs (dissolved)	ND

MW-X315Y115	11/29/2022 ug/L
Aroclor-1016 (PCB-1016)	0.11 U
Aroclor-1221 (PCB-1221)	0.11 U
Aroclor-1232 (PCB-1232)	0.11 U
Aroclor-1242 (PCB-1242)	0.11 U
Aroclor-1248 (PCB-1248)	0.11 U
Aroclor-1254 (PCB-1254)	0.11 U
Aroclor-1260 (PCB-1260)	0.11 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

MW-X315Y150	11/29/2022 ug/L
Aroclor-1016 (PCB-1016)	0.097 U/0.095 U
Aroclor-1221 (PCB-1221)	0.095 U/0.097 U
Aroclor-1232 (PCB-1232)	0.095 U/0.097 U
Aroclor-1242 (PCB-1242)	0.12/0.14
Aroclor-1248 (PCB-1248)	0.095 U/0.097 U
Aroclor-1254 (PCB-1254)	0.095 U/0.097 U
Aroclor-1260 (PCB-1260)	0.095 U/0.097 U
Total PCBs	0.12/0.14
Aroclor-1016 (PCB-1016) (dissolved)	0.13 U/0.096 U
Aroclor-1221 (PCB-1221) (dissolved)	0.13 U/0.096 U
Aroclor-1232 (PCB-1232) (dissolved)	0.096 U/0.13 U
Aroclor-1242 (PCB-1242) (dissolved)	0.096 U/0.13 U
Aroclor-1248 (PCB-1248) (dissolved)	0.13 U/0.096 U
Aroclor-1254 (PCB-1254) (dissolved)	0.13 U/0.096 U
Aroclor-1260 (PCB-1260) (dissolved)	0.096 U/0.13 U
Total PCBs (dissolved)	ND/ND

MW-X227Y054	11/29/2022 ug/L
Aroclor-1016 (PCB-1016)	1.9 U
Aroclor-1221 (PCB-1221)	1.9 U
Aroclor-1232 (PCB-1232)	1.9 U
Aroclor-1242 (PCB-1242)	21
Aroclor-1248 (PCB-1248)	1.9 U
Aroclor-1254 (PCB-1254)	1.9 U
Aroclor-1260 (PCB-1260)	1.9 U
Total PCBs	21
Aroclor-1016 (PCB-1016) (dissolved)	0.48 U
Aroclor-1221 (PCB-1221) (dissolved)	0.48 U
Aroclor-1232 (PCB-1232) (dissolved)	0.48 U
Aroclor-1242 (PCB-1242) (dissolved)	2.7
Aroclor-1248 (PCB-1248) (dissolved)	0.48 U
Aroclor-1254 (PCB-1254) (dissolved)	0.48 U
Aroclor-1260 (PCB-1260) (dissolved)	0.48 U
Total PCBs (dissolved)	2.7

MW-X242Y060S	12/01/2022 ug/L
Aroclor-1016 (PCB-1016)	48 U
Aroclor-1221 (PCB-1221)	48 U
Aroclor-1232 (PCB-1232)	48 U
Aroclor-1242 (PCB-1242)	330
Aroclor-1248 (PCB-1248)	48 U
Aroclor-1254 (PCB-1254)	48 U
Aroclor-1260 (PCB-1260)	48 U
Total PCBs	330
Aroclor-1016 (PCB-1016) (dissolved)	9.5 U
Aroclor-1221 (PCB-1221) (dissolved)	9.5 U
Aroclor-1232 (PCB-1232) (dissolved)	9.5 U
Aroclor-1242 (PCB-1242) (dissolved)	150
Aroclor-1248 (PCB-1248) (dissolved)	9.5 U
Aroclor-1254 (PCB-1254) (dissolved)	9.5 U
Aroclor-1260 (PCB-1260) (dissolved)	9.5 U
Total PCBs (dissolved)	150

MW-X277Y100	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

ST-59	11/30/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U
Aroclor-1232 (PCB-1232)	0.10 U
Aroclor-1242 (PCB-1242)	0.10 U
Aroclor-1248 (PCB-1248)	0.10 U
Aroclor-1254 (PCB-1254)	0.10 U
Aroclor-1260 (PCB-1260)	0.10 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.11 U
Aroclor-1221 (PCB-1221) (dissolved)	0.11 U
Aroclor-1232 (PCB-1232) (dissolved)	0.11 U
Aroclor-1242 (PCB-1242) (dissolved)	0.11 U
Aroclor-1248 (PCB-1248) (dissolved)	0.11 U
Aroclor-1254 (PCB-1254) (dissolved)	0.11 U
Aroclor-1260 (PCB-1260) (dissolved)	0.11 U
Total PCBs (dissolved)	ND

MW-X169Y058S-1	12/01/2022 ug/L
Aroclor-1016 (PCB-1016)	0.096 U/0.097 U
Aroclor-1221 (PCB-1221)	0.096 U/0.097 U
Aroclor-1232 (PCB-1232)	0.096 U/0.097 U
Aroclor-1242 (PCB-1242)	0.096 U/0.097 U
Aroclor-1248 (PCB-1248)	0.096 U/0.097 U
Aroclor-1254 (PCB-1254)	0.096 U/0.097 U
Aroclor-1260 (PCB-1260)	0.096 U/0.097 U
Total PCBs	ND/ND
Aroclor-1016 (PCB-1016) (dissolved)	0.10 U/0.10 U
Aroclor-1221 (PCB-1221) (dissolved)	0.10 U/0.10 U
Aroclor-1232 (PCB-1232) (dissolved)	0.10 U/0.10 U
Aroclor-1242 (PCB-1242) (dissolved)	0.10 U/0.10 U
Aroclor-1248 (PCB-1248) (dissolved)	0.10 U/0.10 U
Aroclor-1254 (PCB-1254) (dissolved)	0.10 U/0.10 U
Aroclor-1260 (PCB-1260) (dissolved)	0.10 U/0.10 U
Total PCBs (dissolved)	ND/ND

CH-44	11/28/2022 ug/L
Aroclor-1016 (PCB-1016)	0.098 U
Aroclor-1221 (PCB-1221)	0.098 U
Aroclor-1232 (PCB-1232)	0.098 U
Aroclor-1242 (PCB-1242)	0.098 U
Aroclor-1248 (PCB-1248)	0.098 U
Aroclor-1254 (PCB-1254)	0.098 U
Aroclor-1260 (PCB-1260)	0.098 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

CH-43	11/29/2022 ug/L
Aroclor-1016 (PCB-1016)	0.095 U
Aroclor-1221 (PCB-1221)	0.095 U
Aroclor-1232 (PCB-1232)	0.095 U
Aroclor-1242 (PCB-1242)	0.095 U
Aroclor-1248 (PCB-1248)	0.095 U
Aroclor-1254 (PCB-1254)	0.095 U
Aroclor-1260 (PCB-1260)	0.095 U
Total PCBs	ND
Aroclor-1016 (PCB-1016) (dissolved)	0.095 U
Aroclor-1221 (PCB-1221) (dissolved)	0.095 U
Aroclor-1232 (PCB-1232) (dissolved)	0.095 U
Aroclor-1242 (PCB-1242) (dissolved)	0.095 U
Aroclor-1248 (PCB-1248) (dissolved)	0.095 U
Aroclor-1254 (PCB-1254) (dissolved)	0.095 U
Aroclor-1260 (PCB-1260) (dissolved)	0.095 U
Total PCBs (dissolved)	ND

CH-42	11/29/2022 ug/L
Aroclor-1016 (PCB-1016)	0.097 U
Aroclor-1221 (PCB-1221)	0.097 U
Aroclor-1232 (PCB-1232)	0.097 U
Aroclor-1242 (PCB-1242)	0.54
Aroclor-1248 (PCB-1248)	0.097 U
Aroclor-1254 (PCB-1254)	0.097 U
Aroclor-1260 (PCB-1260)	0.097 U
Total PCBs	0.54
Aroclor-1016 (PCB-1016) (dissolved)	0.096 U
Aroclor-1221 (PCB-1221) (dissolved)	0.096 U
Aroclor-1232 (PCB-1232) (dissolved)	0.096 U
Aroclor-1242 (PCB-1242) (dissolved)	0.37
Aroclor-1248 (PCB-1248) (dissolved)	0.096 U
Aroclor-1254 (PCB-1254) (dissolved)	0.096 U
Aroclor-1260 (PCB-1260) (dissolved)	0.096 U
Total PCBs (dissolved)	0.37

CH-42A	11/28/2022 ug/L
Aroclor-1016 (PCB-1016)	0.096 U
Aroclor-1221 (PCB-1221)	0.096 U
Aroclor-1232 (PCB-1232)	0.096 U
Aroclor-1242 (PCB-1242)	0.079 J
Aroclor-1248 (PCB-1248)	0.096 U
Aroclor-1254 (PCB-1254)	0.096 U
Aroclor-1260 (PCB-1260)	0.096 U
Total PCBs	0.079 J
Aroclor-1016 (PCB-1016) (dissolved)	0.096 U
Aroclor-1221 (PCB-1221) (dissolved)	0.096 U
Aroclor-1232 (PCB-1232) (dissolved)	0.096 U
Aroclor-1242 (PCB-1242) (dissolved)	0.096 U
Aroclor-1248 (PCB-1248) (dissolved)	0.096 U
Aroclor-1254 (PCB-1254) (dissolved)	0.096 U
Aroclor-1260 (PCB-1260) (dissolved)	0.096 U
Total PCBs (dissolved)	ND

LEGEND

- FENCE LINE
- SURFACE WATER
- SURFACE WATER MONITORING LOCATION
- EXISTING COREHOLE AND MONITORING WELL LOCATION
- SAMPLE TAKEN FROM STORM MANHOLE
- 0.10 U/0.10 U — PARENT/DUPLICATE RESULT
- ND — NOT DETECTED
- U — QUALIFIED NOT DETECTED ABOVE LIMIT

MW-X085Y070S-2	12/01/2022 ug/L
Aroclor-1016 (PCB-1016)	0.10 U
Aroclor-1221 (PCB-1221)	0.10 U

- SAMPLE IDENTIFICATION
- SAMPLE DATE
- SAMPLE UNITS (MICROGRAMS PER LITER)
- RESULT
- PARAMETER

0 150 300 ft

1" = 300 ft

Coordinate System:
NAD 83 INDIANA STATE PLANES,
WEST ZONE, US FOOT

N

GHD

GM BCO FACILITY
BEDFORD, INDIANA
SECOND HALF 2022 CA750 MONITORING RESULTS

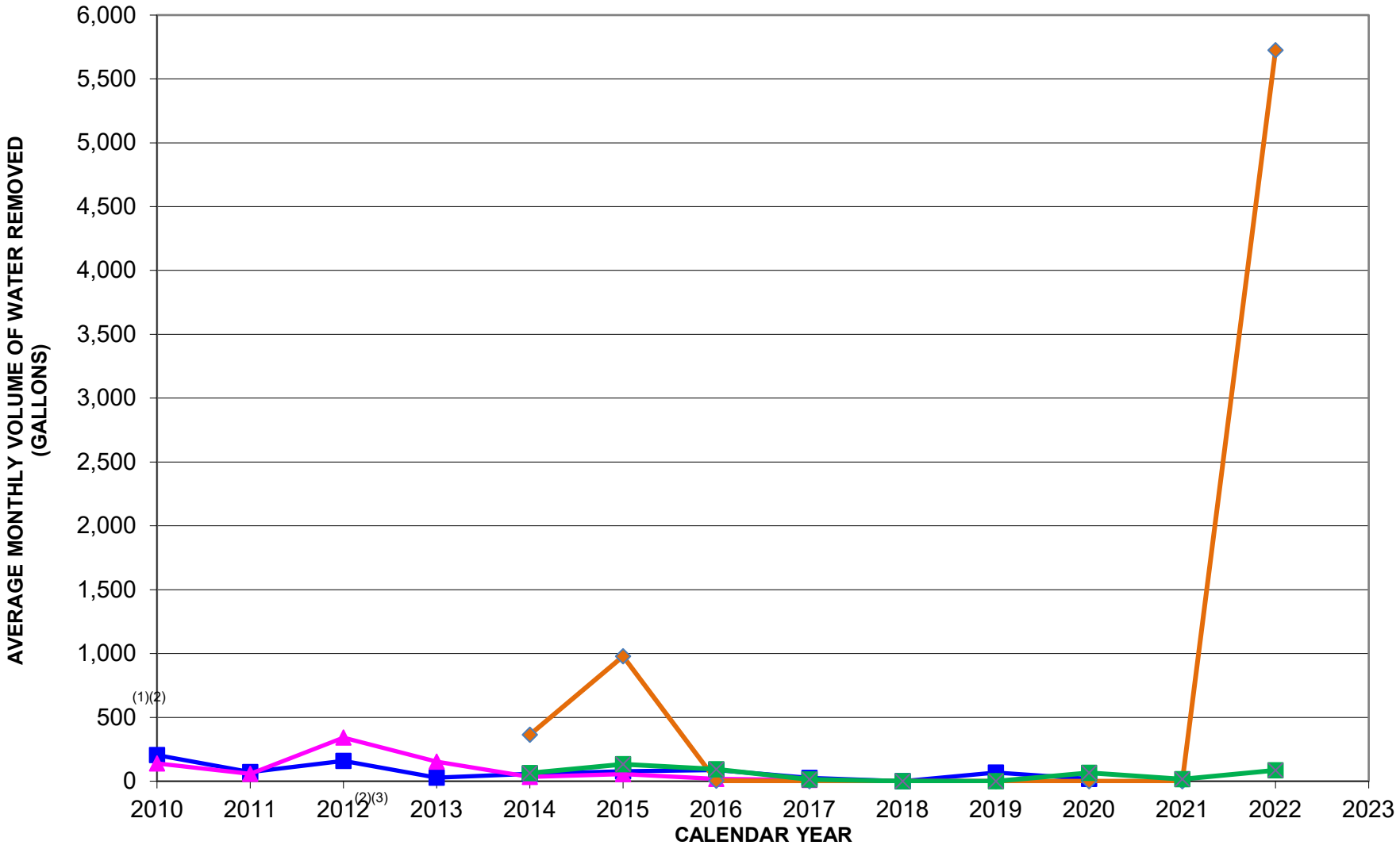
PCBs ANALYTICAL RESULT

Project No. **11228036**
Date **July 2023**

FIGURE 3.3

Filename: N:\US\Chicago\Projects\563\11228036\Digital_Design\ACAD\Figures\RPT017\11228036-GHD-00-00-RPT-EN-D106_WA-017.dwg
Plot Date: 10 July 2023 12:13 PM

SOURCE: BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI, APRIL 2001 AND CRA SURVEYS 2002 TO 2013.



LEGEND

- LCS Calculated
- LDS Calculated
- LCS Flow Meter
- LDS Flow Meter

NOTES

2016 - 2018 LCS flow meter readings have been excluded due to the flow meter being by-passed while temporary pump in place.
LCS flow meter readings from 2021have been excluded due false positive flow being recorded at PLC
LCS flow meter readings for the first half of 2022 have been excluded due false positive flow being recorded at PLC

figure 5.1

SUMMARY OF AVERAGE MONTHLY VOLUME OF WATER REMOVED FROM LCS AND LDS
EAST PLANT AREA TSCA VAULT ANNUAL REPORT, CALENDAR YEAR 2021
GM BEDFORD CASTING OPERATIONS FACILITY
Bedford, Indiana

Appendices

Appendix A

GUS Sump Logs

YEAR: 2022 MONTH: JANUARY

GRAVEL UNDERDRAIN SYSTEM

REV. 4
December 9, 2015
Page 1 of 1

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 665.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	76.2	668.53	0	*		14369	
2	0800	76.4	668.56	0	*		14758	
3	0800	76.6	668.54	0	*		15151	
4	0800	76.5	668.55	0	*		15475	
5	0800	76.5	668.55	0	*		15768	
6	0800	76.5	668.55	0	*		16094	
7	0800	76.5	668.55	0	*		16444	
8	0800	76.6	668.56	0	*		16817	
9	09:00	76.4	668.54	0	*		17111	
10	0800	76.5	668.55	0	*		17524	
11	0800	76.5	668.55	0	*		17805	
12	0800	76.5	668.55	0	*		18010	
13	0800	76.8	668.58	0	*		18259	
14	0800	76.4	668.54	0	*		18598	
15	0800	76.8	668.58	0	*		18949	
16	0800	76.7	668.57	0	*		19194	
17	0800	77.0	668.59	0	*		19474	
18	0800	76.5	668.55	0	*		19783	
19	0800	76.5	668.55	0	*		20095	
20	0800	76.6	668.56	0	*		20382	
21	0800	76.6	668.56	0	*		20661	
22	0800	76.6	668.56	0	*		20945	
23	0800	76.6	668.56	0	*		21201	
24	0800	76.5	668.55	0	*		21458	
25	0800	76.5	668.55	0	*		21744	
26	0800	76.5	668.55	0	*		21976	
27	0800	76.7	668.57	0	*		22215	
28	0800	76.8	668.58	0	*		22445	
29	0800	76.8	668.58	0	*		22685	
30	0800	76.6	668.56	0	*		22934	
31	0800	76.4	668.74	0	*		23214	

* NO MANUAL MEASUREMENT CAN BE TAKEN.

YEAR: 2022 MONTH: February

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	76.3	668.53	0	*		23379	
2	0800	76.7	668.57	0	*		23606	
3	0800	76.6	668.56	0	*		23942	
4	0800	76.7	668.57	0	*		24314	
5	0800	76.5	668.55	0	*		24538	
6	0800	76.4	668.54	0	*		24857	
7	0900	76.6	668.56	0	*		25159	
8	0800	76.6	668.56	0	*		25463	
9	0800	76.5	668.55	0	*		25783	
10	0800	76.5	668.55	0	*		26097	
11	0800	76.4	668.54	0	*		26401	
12	0800	76.2	668.53	0	*		26684	
13	0800	76.2	668.53	0	*		26854	
14	0800	76.1	668.52	0	*		27132	
15	0800	76.2	668.53	0	*		27407	
16	0800	76.2	668.53	0	*		27696	
17	0800	76.2	668.53	0	*		28173	
18	0800	76.2	668.53	0	*		28324	
19	0800	76.5	668.55	0	*		28674	
20	0800	76.5	668.55	0	*		29020	
21	0800	76.4	668.54	0	*		29259	
22	0800	76.1	668.52	0	*		29516	
23	0800	76.3	668.53	0	*		29877	
24	0800	76.4	668.54	0	*		30355	
25	0800	76.4	668.54	0	*		30643	
26	0800	76.5	668.55	0	*		30983	
27	0800	76.5	668.55	0	*		31330	
28	0800	76.7	668.57	0	*		31572	
29								
30								
31								

* NO MANUAL MEASUREMENT CAN be taken

YEAR: 2022 MONTH: March

GRAVEL UNDERDRAIN SYSTEM

REV: 4
December 9, 2015
Page 1 of 1

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number =1055B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [c] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	76.3	668.53	0	*		31952	
2	0800	76.4	668.54	0	*		32292	
3	0800	76.4	668.54	0	*		32684	PC 3-4-22
4	0800	76.1	668.52	0	*		[illegible] 33066	
5	0800	76.3	668.53	0	*		33456	
6	0800	76.1	668.52	0	*		33866	
7	0800	76.4	668.54	0	*		34154	
8	0800	76.4	668.54	0	*		34595	
9	0800	76.3	668.53	0	*		34934	
10	0800	76.3	668.53	0	*		35372	
11	0800	76.3	668.53	0	*		35788	
12	0800	76.1	668.52	0	*		36287	
13	0800	76.6	668.56	0	*		36721	
14	0800	76.1	668.52	0	*		37129	
15	0800	76.1	668.52	0	*		37532	
16	0800	76.4	668.54	0	*		37914	
17	0800	76.4	668.54	0	*		38303	
18	0800	76.4	668.54	0	*		38702	
19	0800	76.5	668.55	0	*		39179	
20	0800	76.1	668.52	0	*		39609	
21	0800	76.4	668.54	0	*		39962	
22	0800	76.2	668.53	0	*		40337	
23	0800	76.4	668.54	0	*		40614	
24	0800	76.0	668.51	0	*		41071	
25	0800	76.2	668.53	0	*		41470	
26	0800	76.2	668.53	0	*		41901	
27	0800	76.1	668.52	0	*		42344	
28	0800	76.2	668.53	0	*		42729	
29	0800	76.2	668.53	0	*		43136	
30	0800	76.2	668.53	0	*		43554	
31	0800	76.0	668.51	0	*		43987	

* NO MANUAL MEASURMENT CAN be taken

YEAR: 2022 MONTH: April

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	76.1	668.52	0	*		44489	
2	0800	76.1	668.52	0	*		44915	
3	0800	75.8	668.49	0	*		45355	
4	0800	76.4	668.54	0	*		45751	
5	0800	76.1	668.52	0	*		46141	
6	0800	76.2	668.53	0	*		46530	
7	0800	76.2	668.53	0	*		~~46908~~ 4-7-22 46908	
8	0800	76.2	668.53	0	*		47405	
9	0800	76.1	668.52	0	*		47850	
10	0800	76.0	668.51	0	*		48292	
11	0800	76.1	668.52	0	*		48598	
12	0800	76.1	668.52	0	*		49020	
13	0800	75.8	668.49	0	*		49393	
14	0800	75.8	668.49	0	*		56335	
15	0800	76.0	668.51	0	*		56714	
16	0800	76.1	668.52	0	*		56902	
17	0800	75.8	668.49	0	*		57227	
18	0800	76.1	668.52	0	*		57586	
19	0800	76.3	668.53	0	*		57855	
20	0800	76.1	668.52	0	*		58219	
21	0800	75.8	668.49	0	*		58551	
22	0800	75.9	668.50	0	*		58890	
23	08:00	75.8	668.49	0	*		59211	
24	08:00	75.9	668.50	0	*		59533	
25	08:00	75.8	668.49	0	*		59840	
26	0800	75.8	668.49	0	*		60129	
27	0800	75.6	668.48	0	*		60469	
28	0800	75.8	668.49	0	*		60803	
29	0800	75.9	668.50	0	*		61163	
30	0800	75.9	668.50	0	*		61450	
31								

NO MANUAL MEASUREMENT CAN BE TAKEN

YEAR: 2022 MONTH: MAY

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	75.7	668.48		*		61743	
2	0800	75.7	668.48		*		62075	
3	0800	75.8	668.49		*		62339	
4	0800	75.7	668.48		*		62642	
5	0800	75.7	668.48		*		62987	
6	0800	76.1	668.52		*		63345	
7	0800	75.8	668.49		*		63603	
8	0800	75.7	668.48		*		63983	
9	0800	75.7	668.48		*		64320	
10	0800	75.6	668.48		*		64674	
11	0800	75.7	668.48		*		65003	
12	0800	75.7	668.48		*		65249	
13	0800	75.7	668.48		*		65547	
14	0800	75.6	668.48		*		65810	
15	0800	75.7	668.48		*		65979	
16	0800	75.5	668.47		*		66336	
17	0800	75.7	668.48		*		66676	
18	0800	75.7	668.48		*		67003	
19	0800	75.7	668.48		*		67332	
20	0800	75.7	668.48		*		67506	
21	0800	75.6	668.48		*		67561	
22	0800	75.5	668.47		*		67674	
23	0800	75.8	668.49		*		67753	
24	0800	75.6	668.48		*		67840	
25	0800	75.6	668.48		*		67932	
26	0800	75.7	668.48		*		68035	
27	0800	75.5	668.47		*		68118	
28	0800	75.7	668.48		*		68463	
29	0800	75.6	668.48		*		68678	
30	0800	75.5	668.47		*		68887	
31	0800	75.5	668.47		*		69190	

* NO MANUAL MEASUREMENT CAN BE TAKEN

YEAR: 2022 MONTH: June

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	75.6	668.48		*		69427	
2	0800	75.6	668.48		*		69822	
3	0800	75.6	668.48		*		69926	
4	0800	75.5	668.47		*		70220	
5	0800	75.5	668.47		*		70493	
6	0800	75.8	668.49		*		70785	
7	0800	75.7	668.48		*		71029	
8	0800	75.7	668.48		*		71311	
9	0800	75.7	668.48		*		71585	
10	0800	75.8	668.49		*		71862	
11	0800	75.7	668.48		*		72138	
12	0800	75.4	668.46		*		72382	
13	0800	75.5	668.47		*		72629	
14	0800	75.5	668.47		*		72923	
15	0800	75.6	668.48		*		73161	
16	0800	75.5	668.47		*		73410	
17	0800	75.2	668.44		*		73643	
18	0800	75.4	668.46		*		73929	
19	0800	75.4	668.46		*		74122	
20	0800	75.4	668.46		*		74303	
21	0800	75.6	668.48		*		74522	
22	0800	75.4	668.46		*		74755	
23	0800	75.6	668.48		*		74987	
24	0800	75.6	668.48		*		75184	
25	0800	75.4	668.46		*		75398	
26	0800	75.4	668.46		*		75704	
27	0800	75.0	668.43		*		75837	
28	0800	75.3	668.45		*		76043	
29	0800	75.3	668.45		*		76226	
30	0800	75.3	668.45		*		76492	
31								

* NO MANUAL MEASUREMENT CAN be taken

YEAR: 2022 MONTH: July

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be nitiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	75.3	668.45		*		76666	
2	0800	75.4	668.46		*		76909	
3	0800	75.1	668.43		*		77034	
4	0800	75.4	668.46		*		77214	
5	0800	75.4	668.46		*		77407	
6	0800	75.4	668.46		*		81909	
7	0800	75.4	668.46		*		82232	- SCADA work - fixed false readings
8	0800	75.5	668.47		*		82342	
9	0800	75.3	668.45		*		82342	
10	0800	75.3	668.45		*		82342	
11	0800	75.2	668.44		*		82342	
12	0800	75.4	668.46		*		82342	
13	0800	75.3	668.45		*		82342	
14	0800	75.2	668.44		*		82342	
15	0800	75.3	668.45		*		82342	
16	0800	75.4	668.46		*		82342	
17	0800	75.2	668.44		*		82342	
18	0800	75.1	668.43		*		82342	
19	0800	75.2	668.44		*		82342	
20	0800	75.2	668.44		*		82342	
21	0800	75.2	668.44		*		82342	
22	0800	75.1	668.43		*		82342	
23	0800	75.3	668.45		*		82342	
24	0800	75.2	668.44		*		82342	
25	0800	74.9	668.42		*		82342	
26	0800	75.1	668.43		*		82342	
27	0800	75.1	668.43		*		82342	
28	0800	75.2	668.44		*		82342	
29	0800	75.1	668.43		*		82342	
30	0800	75.3	668.45		*		92717	
31	0800	75.3	668.45		*		103197	

* NO MANUAL MEASUREMENT CAN be taken

YEAR: 2022 MONTH: August

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	75.3	668.45	0	*		103198	
2	0800	75.4	668.46	0	*		103202	
3	0800	75.4	668.46	0	*		104889	
4	0800	75.0	668.43	0	*		109897	
5	0700	75.1	668.43	0	*		109897	
6	0800	75.1	668.43	0	*		119652	
7	0800	75.2	668.44	0	*		119660	
8	0800	75.1	668.43	0	*		119660	
9	0800	74.8	668.41	0	*		122741	
10	0800	74.9	668.42	0	*		122743	
11	0800	75.0	668.43	0	*		122746	
12	0800	74.8	668.41	0	*		122749	
13	0800	75.2	668.44	0	*		122749	
14	0800	75.1	668.43	0	*		122750	
15	0800	75.1	668.43	0	*		122750	
16	0800	75.2	668.44	0	*		144509	
17	0800	74.9	668.42	0	*		144509	
18	0800	75.1	668.43	0	*		144509	
19	0800	75.3	668.45	0	*		144509	
20	0800	75.2	668.42	0	*		144509	
21	0800	75.1	668.43	0	*		144509	
22	0800	74.7	668.40	0	*		144509	
23	0800	75.0	668.43	0	*		144509	
24	0800	75.0	668.43	0	*		144509	
25	0800	74.9	668.42	0	*		144509	
26	0800	75.0	668.43	0	*		144509	
27	0800	74.7	668.40	0	*		144509	
28	0800	74.9	668.42	0	*		144509	
29	0800	74.8	668.41	0	*		144509	
30	0800	75.0	668.43	0	*		144509	
31	0800	74.7	668.40	0	*		144509	

* NO MANUAL MEASUREMENT CAN be taken

YEAR: 2022 MONTH: September

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	74.7	668.40	0	*		144509	
2	0800	74.6	668.39	0	*		144509	
3	0800	74.6	668.39	0	*		144509	
4	0800	74.8	668.41	0	*		144509	
5	0800	74.6	668.39	0	*		144509	
6	0800	74.8	668.41	0	*		144509	
7	0800	74.8	668.41	0	*		144509	
8	0800	74.7	668.40	0	*		144509	
9	0800	74.7	668.40	0	*		144722	
10	0800	74.7	668.40	0	*		144722	
11	0700	75.0	668.43	0	*		144722	
12	0800	74.7	668.40	0	*		144722	
13	0800	74.6	668.39	0	*		144722	
14	0800	74.6	668.39	0	*		144722	
15	0800	74.5	668.38	0	*		144722	
16	0800	74.9	668.42	0	*		144722	
17	0800	74.4	668.38	0	*		144722	
18	0800	74.4	668.38	0	*		144722	
19	0800	74.4	668.38	0	*		144722	
20	0800	74.4	668.38	0	*		144722	
21	0800	74.7	668.40	0	*		144722	
22	0800	74.7	668.40	0	*		144722	
23	0800	74.6	668.39	0	*		144722	
24	0800	74.7	668.40	0	*		144722	
25	0800	74.6	668.39	0	*		144722	
26	0800	74.6	668.39	0	*		144722	
27	0800	74.5	668.38	0	*		144722	
28	0800	74.6	668.39	0			144722	
29	0800	74.7	668.40	0			144722	
30	0700	74.7	668.40	0			144722	
31								

* NO MANUAL READING CAN be taken

YEAR: 2022 MONTH: October

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	74.7	668.40		*		144722	
2	0800	74.4	668.38		*		144722	
3	0800	74.3	668.37		*		144722	
4	0800	74.7	668.40		*		144722	
5	0800	74.7	668.40		*		144722	
6	0800	74.4	668.38		*		144722	
7	0800	74.4	668.38		*		144722	
8	0800	74.3	668.37		*		144722	
9	0800	74.4	668.38		*		144722	
10	0800	74.4	668.38		*		144722	
11	0800	74.4	668.38		*		145315	
12	0800	74.4	668.38		*		145315	
13	0800	74.7	668.40		*		145315	
14	0800	74.8	668.41		*		145315	
15	0800	74.7	668.40		*		145315	
16	0800	74.7	668.40		*		145315	
17	0800	74.5	668.38		*		145315	
18	0800	74.4	668.38		*		145315	
19	0800	74.4	668.38		*		145315	
20	0800	74.7	668.40		*		145315	
21	0800	74.4	668.38		*		145315	
22	0800	74.4	668.38		*		145315	
23	0800	74.4	668.38		*		145315	
24	0800	74.4	668.38		*		145315	
25	0800	74.7	668.40		*		145315	
26	0800	74.7	668.40		*		145315	
27	0800	74.7	668.40		*		145315	
28	0800	74.7	668.40		*		145317	- no flow but flowmeter added
29	0800	74.7	668.40		*		145317	
30	0800	74.4	668.38		*		145317	
31	0800	74.7	668.40		*		145317	

* No manual measurement can be taken

YEAR: 2022 MONTH: November

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	74.4	668.38	0	*		145317	
2	0800	74.3	668.37	0	*		145317	
3	0800	74.4	668.38	0	*		145317	
4	0800	74.4	668.38	0	*		145317	
5	0800	74.7	668.40	0	*		145317	
6	0800	74.4	668.38	0	*		145317	
7	0800	74.4	668.38	0	*		145317	
8	0800	74.4	668.38	0	*		145317	
9	0800	74.4	668.38	0	*		145957	
10	0800	74.4	668.38	0	*		145957	
11	0800	74.7	668.40	0	*		145957	
12	0800	74.4	668.38	0	*		145957	
13	0800	74.4	668.38	0	*		145957	
14	0800	74.4	668.38	0	*		145957	
15	0800	74.7	668.40	0	*		145957	
16	0800	74.7	668.40	0	*		145957	
17	0800	74.8	668.41	0	*		145957	
18	0800	74.7	668.40	0	*		145957	
19	0800	74.7	668.40	0	*		145957	
20	0800	74.7	668.40	0	*		145957	
21	0800	74.4	668.38	0	*		145957	
22	0800	74.4	668.38	0	*		145957	
23	0800	74.7	668.40	0	*		145957	
24	0800	74.7	668.40	0	*		145957	
25	0800	74.7	668.40	0	*		145957	
26	0800	74.4	668.38	0	*		145957	
27	0800	74.4	668.38	0	*		145957	
28	0800	74.7	668.40	0	*		145957	
29	0800	74.7	668.40	0	*		145957	
30	0800	74.7	668.40	0	*		145957	
31	[redacted]	[redacted]	[redacted]					

YEAR: 2022 MONTH: December

GRAVEL UNDERDRAIN SYSTEM

Notes: *Top of sump [top of concrete] (feet AMSL): 738.99* *Bottom of sump (feet AMSL): 662.18* *Inside diameter of sump (feet): 3* *Total depth of sump manhole (feet): 76.81*
Pump operating level between 2.5 ft (664.68 ft AMSL or 74.31 ft below the top of sump) and 4.33 ft (666.5 ft AMSL or 72.49 ft below the top of sump) of water in the GUS manhole.

(a) **Water level not to rise above 52 inches deep** (equates to a water level of 666.5 ft AMSL or 72.49 ft below top of the sump). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm PLC water level measurement by taking a manual water level measurement. If both measurements exceed the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(b) **Depth to water level should not be less than 72.49 ft below the top of sump** (equates to a water level of 666.5 ft AMSL or water depth of 52 inches). Pumping must be initiated if the water level is above 666.5 ft AMSL. Confirm manual water level measurement. If confirmed measurement exceeds the maximum allowable level (666.5 ft AMSL), notify the PM immediately.
(c) Readout from display on magnetic flow meter (serial number F1095B16000). Readings are cumulative unless noted otherwise.

DAY	TIME OF MANUAL MEASUREMENT (hh:mm)	(Y) WATER LEVEL DEPTH AT PLC [a] (inches) *should not be more than 52 inches*	(1) CONVERT PLC WATER DEPTH TO ELEVATION [a] (ft AMSL) =[(Y)/12] + 662.18 *should not be more than 666.5 ft AMSL*	QUANTITY PUMPED @ PLC (gallons removed)	(X) MANUAL DEPTH TO WATER LEVEL [b] (ft below top of sump) *should not be less than 72.49 ft*	(2) CONVERT MANUAL DEPTH TO WATER LEVEL TO ELEVATION [b] (ft AMSL) = 738.99 - (X) *should not be more than 666.5 ft AMSL*	LOCAL FLOW METER READING [c] (gallons)	COMMENTS Note when samples are collected, any maintenance activities occur, any calibration/reprogramming efforts, etc. ** (1) and (2) should be compared and any discrepancies between measurements explained here.
1	0800	74.4	668.38		*		145957	
2	0800	74.4	668.38		*		145957	
3	0800	74.7	668.40		*		145957	
4	0800	74.7	668.40		*		145957	
5	0800	74.4	668.38		*		145957	
6	0800	74.4	668.38		*		145957	
7	0800	74.4	668.38		*		146660	
8	0800	74.4	668.38		*		146660	
9	0800	74.6	668.39		*		146660	
10	0800	74.4	668.38		*		146660	
11	0800	74.4	668.38		*		146660	
12	0800	74.4	668.38		*		146660	
13	0800	74.4	668.38		*		146660	
14	0800	74.5	668.38		*		146660	
15	0800	74.5	668.38		*		146660	
16	0800	74.5	668.38		*		146660	
17	0800	74.5	668.38		*		146660	
18	0800	74.5	668.38		*		146660	
19	0800	74.5	668.38		*		146660	
20	0800	74.5	668.38		*		146660	
21	0800	74.5	668.38		*		146660	
22	0800	74.4	668.38		*		146660	
23	0800	74.7	668.40		*		146660	
24	0800	74.7	668.40		*		146660	
25	0800	74.7	668.40		*		146660	
26	0800	74.6	668.39		*		146660	
27	0800	74.6	668.39		*		146660	
28	0800	74.4	668.38		*		146660	
29	0800	74.4	668.38		*		146660	
30	0800	74.4	668.38		*		146660	
31	0800	74.4	668.38		*		146660	

* NO MANUAL DEPTH CAN BE TAKEN

Appendix B

Cover System Inspection Log

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 FS6	

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 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

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 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

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			
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

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			
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	✔				

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			
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		

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			
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	✔				

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			
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		✔			

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			
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		✔			

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

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 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

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 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

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			
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

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			
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	✔		.		

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			
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		

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			
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	✔				

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			
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		✔			

TABLE D.1

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

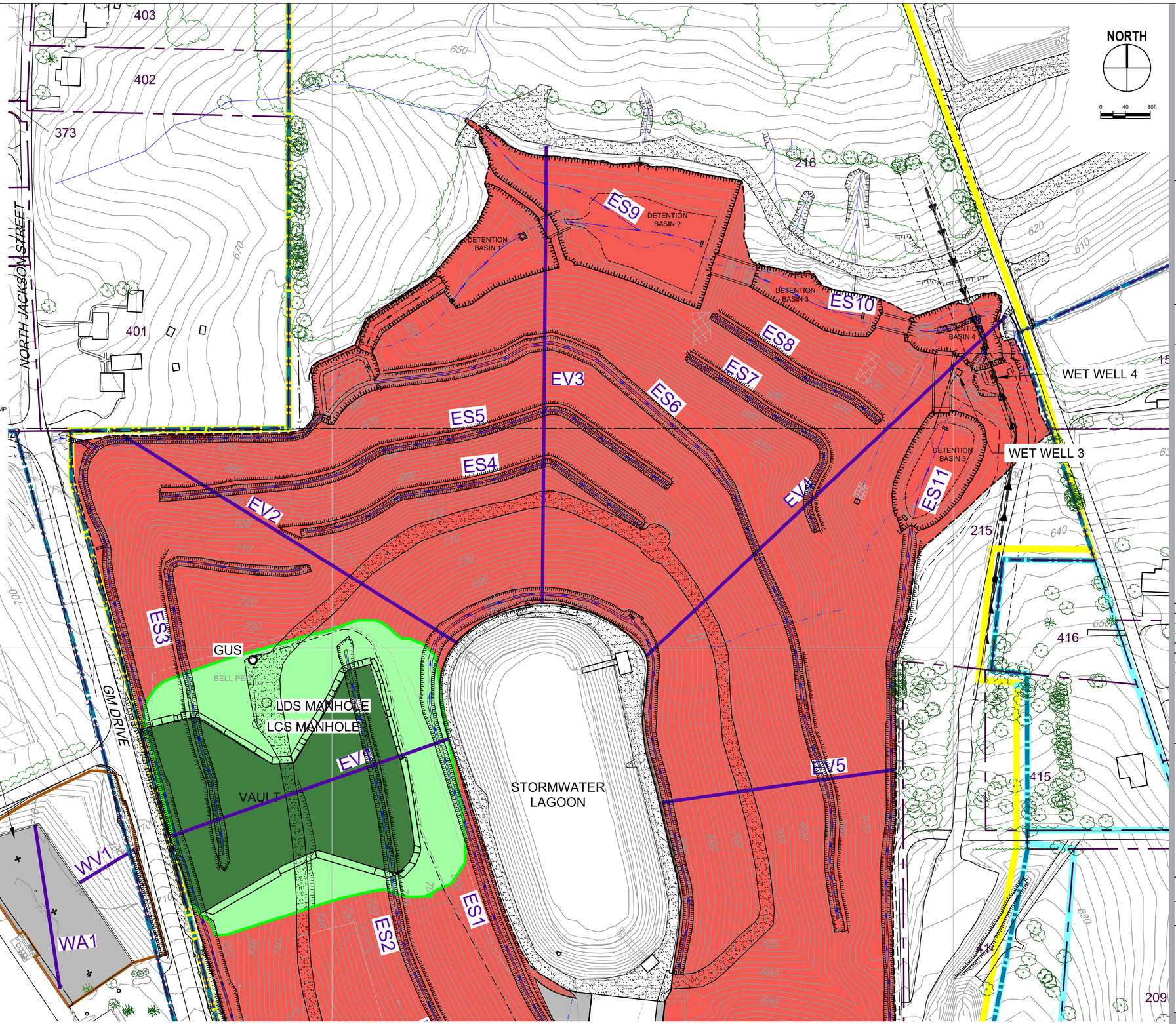
ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
SWALE/DRAINAGE DITCHES (CONTINUED)							
	Transect ES13	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✔				
		- 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	✔		es.		
		- ROOTING OF TREES		✔			

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



GHD Inc.
6400 Shafer Court #400
Rosemont Illinois 60018 USA
T 1 773 380 9933
www.ghd.com

Bar is one inch on original size sheet
0 1"

No.	Issue	Checked	Approved	Date

Author		Designer	
Drafting Check		Design Check	
Project Manager		Project Director	

Client

GM BCO FACILITY

Project

LONG TERM OMMP

Date	Scale
Jul 26/21	1" = 80'

Project No.
13968

Title
EAST PLANT AND WEST PLANT COVER SYSTEM INSPECTIONS

Size
ANSI D

Sheet No
FIGURE B.1

Plot Date: 26 July 2021 - 4:58 PM Plotted By: Nicholas Quehl Path and Filename: N:\CA\Waterloo\Legacy\CAD\drawings\13000s\13968\13968-REPORTS\13968-00(436)\13968-00(436)GN\13968-00(436)GN-WA005-fig b. and b.2.DWG

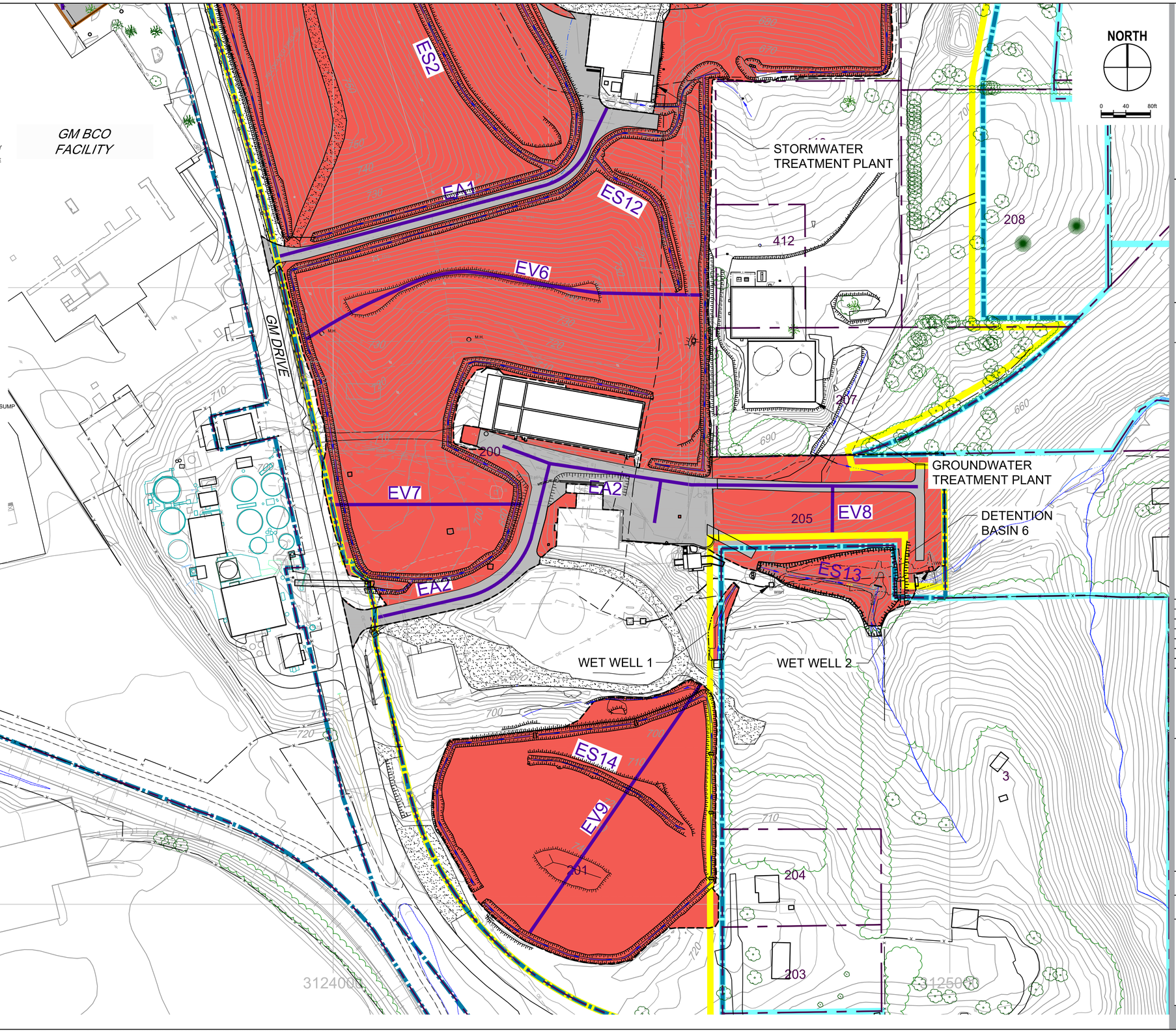
LEGEND

- 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

GUS
LDS
LCS

TRANSECT LABELING

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



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Bar is one inch on original size sheet
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No.	Issue	Checked	Approved	Date

Author	Designer
Drafting Check	Design Check
Project Manager	Project Director

Client

GM BCO FACILITY

Project

LONG TERM OMMP

Date	Scale
Jul 26/21	1" = 80'

Project No.
13968

Title

EAST PLANT PLANT COVER SYSTEM INSPECTIONS

Size
ANSI D

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FIGURE B.2

Plot Date: 26 July 2021 - 4:59 PM Plotted By: Nicholas Quehl Path and Filename: N:\CA\Waterloo\Legacy\CAD\drawings\13000s\13968\13968-REPORTS\13968-00(436)\13968-00(436)GN\13968-00(436)GN-WA005-fig b. and b.2.DWG

Appendix C

Technical Memorandum dated October 21, 2022

Technical Memorandum

October 21, 2022

To	Peter Ramanauskas, U.S. EPA	**Contact No.**	+ 1 773 380-9933
Copy to	Jean Greensley, U.S.EPA Chris Myer; IDEM Ed Peterson, GM John Maher, GM Alexa Sebastian, GM Julie Luzwick, GHD	**Email**	katie.kamm@ghd.com
From	Katie Kamm/mg/15	**Project No.**	11228036
Subject	Summary of Unexpected Leachate Volumes		

1. Introduction

This memorandum summaries the investigations and conclusions pertaining to the unexpected and isolated increase in leachate collection system (LCS) volume observed in the TSCA-compliant landfill vault (Vault) at the General Motors LLC (GM) facility in Bedford, Indiana.

On July 29, 2002, the groundwater treatment plant (GWTP) operator removed 10,363 gallons of leachate from the LCS. This was unexpected in that the leachate volumes collected from the LCS over the past 10 years have been low (average annual volume removed was 700 gallon). As a result of this unexpected volume of leachate, the following operating and physical conditions were reviewed to assess a cause for this observed leachate accumulation:

1. The transducer within the LCS began to record leachate levels on July 29, 2022. Transducer reading for the past year (through July 28, 2022) had been recorded as a negative number, indicating that the water level within the sump was too low to be recognized by the transducer. The return of the transducer readings indicated that a surge of leachate had entered the LSC.
2. To confirm the validity of the transducer readings, the manual depth to leachate was recorded and compared to the readings collected on July 25, 2022 (weekly manual reading are generally collected on Mondays). The manual readings confirmed the transducer readings. The water level within the LSC rose roughly 3 feet between Monday and Friday.
3. Logs for the water level in the leak detection system (LDS) was reviewed to confirm there was no accumulation that would suggest a failure of the bottom vault liner system. Weekly data from the LDS water level measurements were consistent with past readings, indicating the LDS was functioning as intended with no increase in water level and thus no obvious connection between the LCS and LDS.
4. The operator walked the ground surface around the Vault and did not observe depressions or integrity issues, or ponding of water that would have indicated settlement of the Vault cover system.
5. Groundwater elevation in proximity to the Vault (monitoring well 9-4, located east of the Vault and north of the stormwater pond) was measured to determine if recent rain impacted groundwater levels. The site

received roughly 3 inches of rain in the two days preceding the initial spike in leachate collection. The groundwater elevation was consistent with historical levels.

GM and GHD continued to monitor conditions while reviewing potential causes for the unexpected increase in leachate volume. Based on the available information, it was theorized that the isolated increase in volume was a result of normal redistribution of water within the Vault. U.S. EPA was notified of the observations by email dated August 9, 2022, along with the intent to conduct further monitoring of the system then provide a summary of the findings.

2. Monitoring

Following the initial investigation, the following tasks were performed:

1. Conducted additional surface inspections to identify signs of cover system settling
2. Inspected the liner conditions around the vault sumps
3. Compared leachate volume removed and leachate water levels with precipitation events
4. Compared leachate quality data from samples collected in August and September 2022 with historical data
5. Re-surveyed the LCS sump to determine if there has been localized settlement
6. Continued to monitor leachate collection volumes and water levels within the LSC sump to see if water levels have stabilized

Surface Inspections

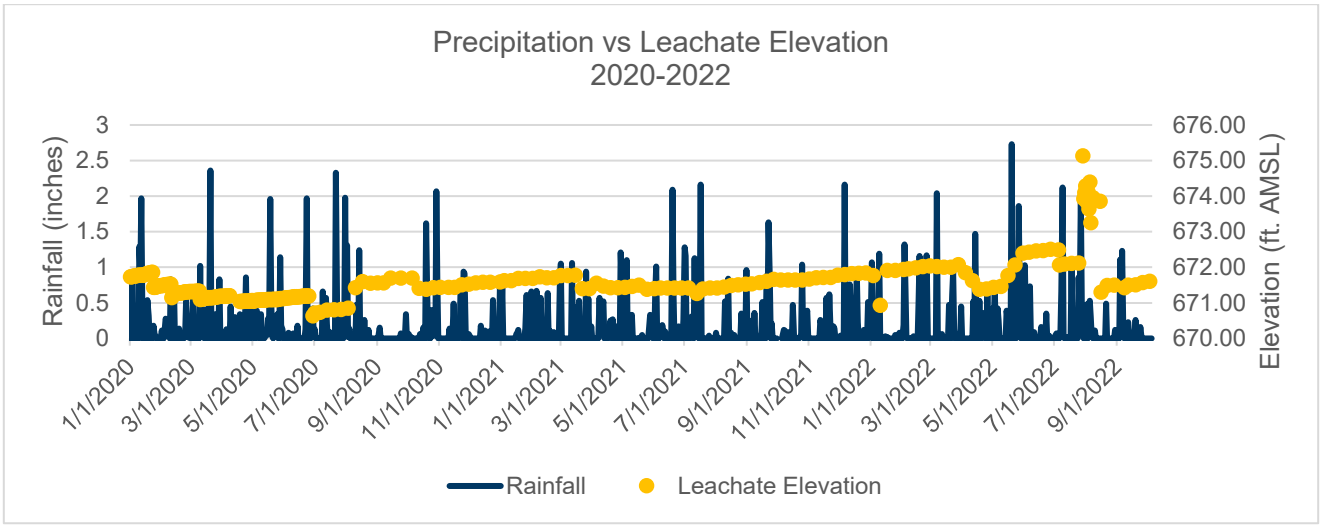
The Vault surface was inspected to identify signs of differential settling of the cover system that could point to a failure of the liner system. A recent mowing of the Vault cover system enhanced the ability to observe any signs of settling. Personnel looked for areas of slumping, surface depressions, standing water or saturated soil. Two inspections were conducted following the initial inspection by the GWTP operator. On August 4, 2022, field personnel who normally conduct the semi-annual cover system inspections walked the Vault cover system. On August 11, 2022, the Vault design engineer inspected the cover system. Neither observed signs of cover system settlement that would indicate a system failure.

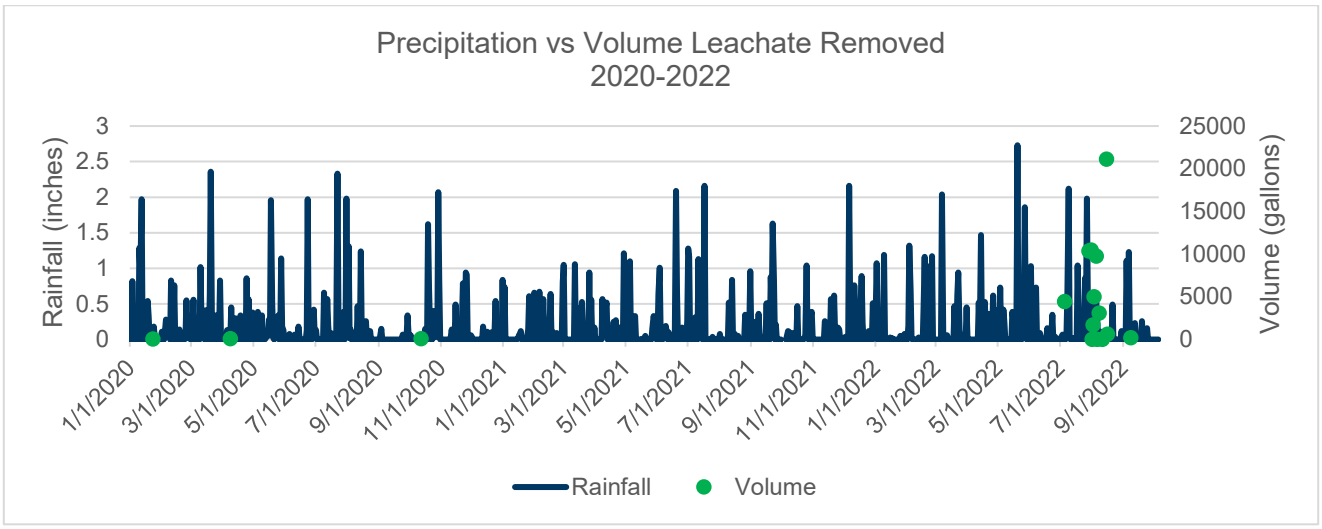
Liner Inspections

The liner around the LCS sump was inspected. This liner is part of the East Plant Area cover system. A small portion of the liner has pulled away from the restraining band where the liner is booted to the LCS sump. The liner attachment at the surface will be fixed but the small gap would not contribute to the increase in leachate volume. It is important to recall that the liner associated with the Vault cover system is similarly affixed to the LCS sump, approximately 20 feet below ground surface. For stormwater to have reached the LCS, stormwater would have infiltrated through the gap in the upper liner as well as past the retraining band where the Vault liner is booted to the LCS sump.

Leachate vs Precipitation

Leachate water levels and volumes were compared to precipitation to see if there was a correlation, indicating a subsurface/unseen failure of the cover system which would allow stormwater to reach the LCS. Below are charts comparing precipitation events (as recorded by National Weather Station Bedford 3.7N) to leachate water levels and volumes for the past 3 years. No correlation between precipitation and leachate water levels or volume of leachate removed was found.

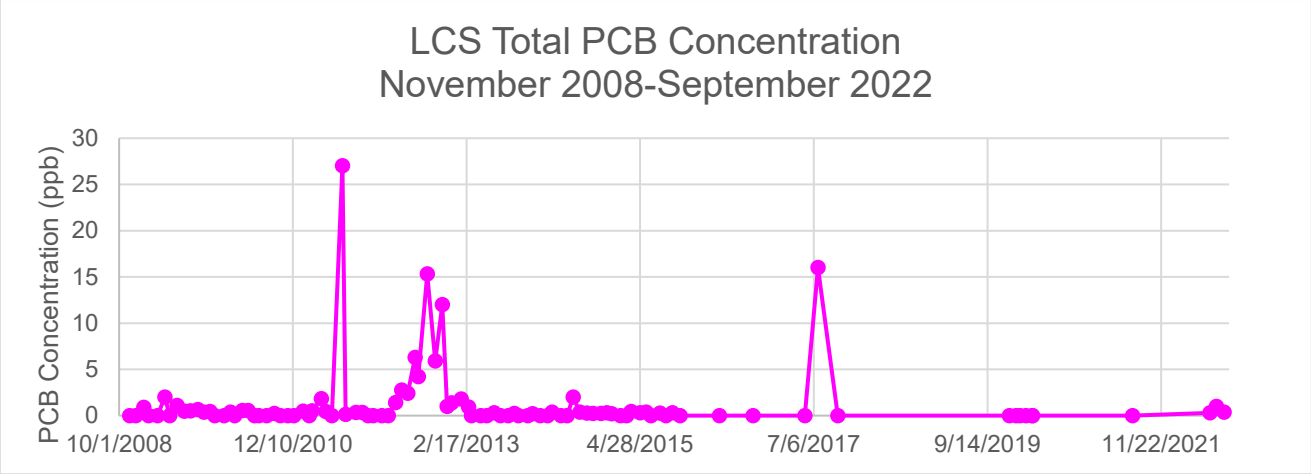




Leachate Quality

The August 2022 monthly LCS sampling event was conducted during the period where increased volumes of leachate were being removed. Total PCB data was compared to historical PCB levels in leachate following the Vault liner installation in October 2008. The result from the August 2022 sampling event (1 ppb) was consistent with the leachate sample results following the initial dewatering of the soils within the vault. The total PCB concentration from the September 2022 event showed a decrease in total PCB concentrations (0.35 ppb) from the August sampling event.

Sample results from the LDS during August and September were non-detect for PCBs. PCB concentrations in the groundwater below the LDS averages 30 ppb PCBs. This is consistent with the assessment that there is no connection between the LDS and LCS and that the water collected from the LCS was not from groundwater.



Survey Results

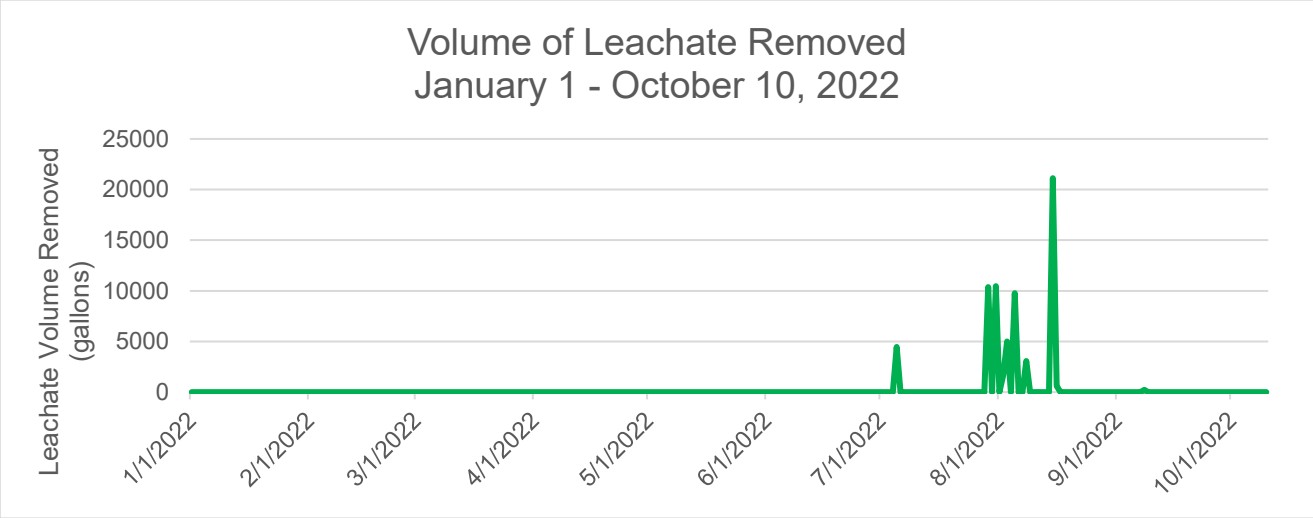
On September 28, 2022, Bledsoe Riggert Cooper James (BRCJ) re-surveyed the top of the concrete LCS sump structure (from which manual leachate levels are recorded) and the ground surface at the base of the sump. A comparison of the as-built survey information from 2012 and the September 2022 survey data found a 0.48-inch difference. This could either be attributed to a uniform settlement of 0.48 inches or slight variations in survey point locations. In either case, the elevation change is insufficient for the linear low-density polyethylene (LLDPE) liner to reach the elongation at break (800%) which represents how much a material can be stretched as a percentage of the original dimensions before it breaks. Based on the survey information and the physical properties of the liner material, we do not believe it is plausible for settlement to have caused an elongation and subsequent break in the liner through which stormwater water could have been introduced into the Vault interior.

Location	2012 As-Built Elevation (ft. AMSL)	September 28, 2022 Re-Survey	Change in Elevation
Monitoring point	740.83	740.87	-0.4 ft (0.48 inches)
Ground surface	736.78	736.82	-0.04 ft (0.48 inches)

Leachate Elevation and Water Level

The leachate elevation within the LCS slowly builds over time. As expected, the rate of leachate production and collection has significantly diminished since Vault closure with less than 1000 gallons/year over the past several years, including several years where no leachate was collected. In the months leading up to the July 2022 leachate measurements, no leachate was collected until July 5, 2022, when the operator manually removed 4,452 gallons during a monthly sampling event. Between July 29 and August 8, 2022, a total of

40,353 gallons of leachate were removed. The August 15, 2022 spike in removed volume shown on the graph below was a result of testing the pump communications and controls, not due to a rise in leachate levels. Subsequently, no leachate has been removed excepting 213 gallons on September 8, 2022, as part of the monthly sampling event.



Note that the "volume removed" readings from January – July 2022 which were attributed to signal variations/fluctuations were not considered in this evaluation. Manual measurements of leachate levels during this time period indicated that leachate levels within the LCS had not risen to a point in which the pump would automatically be engaged. Further, it was determined that the negative transducer readings (recorded during this same time frame) indicated that the water level is below the measuring range of the device.

3. Conclusion

Data gathered following the initiate influx of leachate indicate that the condition was isolated and a likely the result of a redistribution of perched water within the fill material and not a result of landfill liner system failure.

Much of the PCB-impacted soil that was placed in the Vault was mixed with bed ash to drive off excess moisture and improve compaction. Soil placement began in May 2006 (placed in compacted lifts) and the liner system was completed in October 2008. During these 29 months while the Vault was 'open', precipitation continued to fall within the Vault footprint. Following construction completion, solidified soils within the vault continued to dewater, settle and compact under gravity and placement conditions. As the landfill ages and continues to differentially settle combined with local water pressure build-up, preferential pathways can be created allowing for a perched slug of leachate to make its way to the LCS.

GM and GHD will continue to monitor the LCS as part of the Vault routine operation, monitoring and maintenance activities and report any changed conditions.

Regards,

Katie Kamm
Project Manager/Project Director