GZA GeoEnvironmental of New York

Engineers and Scientists

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Re: Storm Sewer Investigation Report
BCP Sites # C932138, C932139, C932140
GM Components Holdings
200 Upper Mountain Road
Lockport, NY 14094

Dear Glenn:

On behalf of GM Components Holdings (GMCH), GZA GeoEnvironmental of New York (GZA) has prepared this updated report to provide a summary of the storm sewer activities completed to date at the GMCH Lockport facility located at 200 Upper Mountain Road, Lockport, New York (Site). The activities have been completed to assess if volatile organic compound (VOC) impacted groundwater may be infiltrating the storm sewer system at locations where the storm sewer piping is present at or below the groundwater table.

A Storm Sewer Sampling Report[1] dated March 8, 2013 was submitted to NYSDEC. It included a summary of storm sewer related activities completed between August 2012 and January 2013 along with conclusions and recommendations for some additional activities. GMCH received a comment letter from NYSDEC dated April 22, 2013 regarding the March 8, 2013 report (see Appendix 1). The April 22, 2013 letter requested that the comments be incorporated into a revised report following the completion of the additional investigations recommended. This updated report addresses the comments received from NYSDEC and the additional storm sewer activities completed in 2013.

BACKGROUND

Storm water data provided for Outfalls D002 and D003 (see Figure 1) in the Brownfield Cleanup Program (BCP) Remedial Investigation Reports (RIR; Haley & Aldrich (H&A)/GZA, November 2011) for Buildings 7, 8 and 10 indicated that chlorinated VOCs are present in the storm water discharge from the GMCH Facility. The storm water data provided in the RIR was from high-flow conditions, meaning that storm water was being discharged through the outfalls to the swale present on-site. We note that under low-flow

[1] "Storm Sewer Sampling Report, BCP Sites #C932138, C932139, C9332140, GM Components Holdings, 200 Upper Mountain Road, Lockport, New York" dated March 8, 2013.

conditions, storm water is diverted to the Lockport POTW and does not discharge through the outfalls.

DRAFT Remedial Work Plans (RWPs; H&A/GZA, December 2011), submitted to the New York State Department of Environmental Conservation (NYSDEC) for BCP Sites Buildings 7, 8 and 10, proposed conducting an assessment of potential groundwater infiltration into the storm sewer system and to take corrective measures as necessary.

A Storm Sewer Sampling Work Plan (SSSWP) was developed to perform the storm sewer sampling proposed in the DRAFT RWPs. NYSDEC reviewed the SSSWP and provided comments in a letter dated August 2, 2012. A Revised SSSWP was prepared, submitted to NYSDEC for review and approved by NYSDEC in a letter dated August 23, 2012.

NYSDEC, in a letter dated September 20, 2012, stated that a Decision Document related to the RWPs could not be issued at this time as it unknown if a remedy to address groundwater infiltration will be necessary and any remedy would need to be included in the Decision Document.

We note that the storm sewer system configuration in the eastern portion of the facility has been altered. These alterations have occurred because Building 6 and some of the land surrounding Building 6 will be transferred from GMCH to Delphi Properties Management LLC. The utilities associated with Building 6 (e.g., storm water, fire suppression, sanitary, potable water and electricity) are in the process of being separated from the remainder of the GMCH facility. The storm sewers affected by this utility separation include those running in a north-south direction between Buildings 6 and 8, and those located in the parking lot and grass area south of Building 6. The storm sewer lines shown in the figures provided in this report are representative of the configuration at the time of the sampling and do not reflect the changes made to the system in the eastern portion of the property.

The storm sewer sampling completed in the eastern portion of the facility, at locations affected by the storm sewer changes, were conducted prior to the changes being made. The storm sewer portion of the Building 6 utility separation project are scheduled to be completed in early 2014.

STORM SEWER INVESTIGATION ACTIVITIES

The storm sewer investigation involved the following activities.

- Water samples have been collected from select storm sewer structures (i.e., catch basins, manholes (MHs) or piping) where sampling specific structure(s) were estimated capable of assessing potential infiltration locations and/or exclude portions of the storm sewer system as an area of concern. Sampling was completed in four (4) events as defined below.
- Groundwater elevations were measured in conjunction with the first low-flow sampling event in September 2012.
- Review of previously completed storm sewer videos.

- A storm sewer clean out and camera survey was completed on a portion of the storm sewer line located between Buildings 7 and 10, as recommended in the March 8, 2013 report.

Figure 1 depicts the storm sewer system at the GMCH Lockport facility at the time the sampling was completed as part of the investigation.

Storm Sewer Water Sampling

Prior to the first sampling event in August 2012, Lockport had experienced a relatively dry summer. According to the website wunderground[2], the weather station located at the Niagara Falls Airport in Niagara Falls, New York (KIAG) registered less than 3 inches of rain between June 21 (first day of summer) and August 30, 2012 (first day of sampling). According to the historic weather data from this weather station for this same date interval, the average rain fall for the past 10 years was about 7 inches.

Groundwater elevations were measured at select monitoring wells within the storm sewer sampling area after the first sampling event. The groundwater measurements are depicted as groundwater contours shown on Figure 2. A comparison was done of the groundwater contours and the elevations of the various storm sewer components. The storm sewer component elevations were determined from a drawing provided by GMCH or from measurements collected from select storm sewer components in the field. These elevations are provided on Table 1. The portions of the storm sewer system highlighted in orange on Figure 3 represent portions of the system that are located at or below the groundwater elevation based on the comparison completed.

The storm sewer sampling discussed in this report occurred in four (4) events and included 26 different storm sewer structures as shown on Figure 3. [Note that location #7 could not be opened and was not sampled.]. The sampling has been conducted under both low-flow conditions and high-flow conditions.

The type of sampling condition (low-flow or high-flow) was determined by the discharge condition occurring at Outfalls D002 and D003. Low-flow sampling events were not conducted after significant rains or when snow melt was occurring. All storm water at Outfalls D002 and D003, at the time of the low-flow sampling events, was being diverted to the Lockport POTW under low-flow conditions. Low-flow conditions at Outfall D002 indicated flow from the portions of the storm sewer system associated with this outfall are less than 200 gallons per minute (gpm). Low-flow conditions at Outfall D003 indicated flow from the portions of the storm sewer system associated with this outfall are less than 100 gpm. During the three (3) low-flow events, all storm water at Outfalls D002 and D003 was being diverted to the City of Lockport POTW.

[2] Wunderground website for summary for weather from June 21, 2012 through September 12, 2012. http://www.wunderground.com/history/airport/KIAG/2012/6/21/CustomHistory.html?dayend=31&monthend=8&yearend=2012&req_city=NA&req_state=NA&req_statename=NA

The high-flow sampling event was completed after a rain event and the storm waters from Outfalls D002 and D003 were discharging to the on-site drainage swales and were not being diverted to the Lockport POTW. Therefore, flows from Outfalls D002 and D003 were greater than the 200 gpm and 100 gpm thresholds, respectively.

The following is a summary of the four (4) sampling events.

- August 30 & 31, 2012, Low-Flow Sampling: 15 locations; MH-1 through MH-6 and MH-8 through MH-15. MH-7 could not be opened and was not sampled. A tap water sample was also collected from inside Building 7A.

- October 5, 2012, Low-flow Sampling: 9 locations; MH-6 was resampled, MH-16 through MH-21, Outfall D002 and Outfall D003 influent.

- January 4, 2013, Low-flow Sampling: 4 locations; MH-22 through MH-25.

- June 13, 2013, High-flow Sampling: 12 locations, 13 samples; MH-1, south pipe discharging into MH-1, MH-4, MH-5, MH-6, MH-8, MH-10, MH-11, MH-16, MH-17, MH-21, Outfall D002 and Outfall D003.

The following scenarios were encountered during the three (3) low-flow sampling events (August 2012, October 2012 and January 2013).

- Flow was observed entering into the structure; the water sample was collected from the standing water within the bottom of the structure.

  MH-1, -3, -9, -17, and -18

- Flow was observed from one specific pipe entering into the structure; the water sample was collected from that pipe.

  MH-2, -12, -20, Outfalls D002 and D003

- Flow was observed from multiple pipes entering into the structure; the water sample was collected from water accumulated within the bottom of the structure.

  MH-4, -5, -13, -14, -15, -22, and -23

- MH could not be opened; the water sample was collected through an opening in the cover from water within the bottom of the structure.

  MH-6

- MH consisted of a pipe flowing through the MH bottom; the water sample was collected from the flow through the structure.

  MH-8, -10, -11, -16, -19, and -21

- Flow was observed from one specific pipe entering into the structure but the pipe inverts were below the water level within the structure; the water sample was collected from water accumulating within the structure.

  MH-24 and -25

In addition to sample collection, observations of the structures sampled were made and recorded (e.g., sheen observed, organic vapor meter readings, flow within the structure, pipe orientation, etc.). These observations are documented on Table 1.

The following scenarios were encountered during the one (1) high-flow sampling event (June 2013).

- Flow was observed discharging from the storm sewer pipe to the on-site drainage swale at Outfalls D002 and D003 and a sample was collected from the discharge.

- Flow was observed from pipe entering into the structure and the water sample was collected from a specific pipe. A sample was collected from the discharge of the southern storm sewer pipe that discharges into MH-1. The sample was designated MH-1-SP.

- Flow was observed entering into the structure and the water sample was collected from water accumulated within the structure.

  MH-1, MH-4, MH-5, MH-6, MH-8, MH-10, MH-11, MH-16, MH-17 and MH-21

We note that during the high-flow sampling event a petroleum odor was noted within MH-1 and a sheen was observed within structures MH-8 and MH-10.

Storm Sewer Sampling Methodologies

The storm water sampling was conducted by opening the selected structure and placing a pre-cleaned polyethylene dip cup into the structure to collect the sample for analysis.

Samples identified as Outfall D002 and D003 were collected from the discharge of the storm sewer pipes upstream of the actual outfall structure locations.

Samples were collected and analyzed for VOCs via EPA Method 8260 Target Compound List (TCL) and Total Oil and Grease (O&G) via EPA Method 1664a during the three (3) low-flow sampling events. During the high-flow event, samples were collected and

analyzed for compounds of concern (discussed later in the report) VOCs via EPA Method 8260 TCL.

Additionally, one water sample was collected from a bathroom sink faucet in Building 7A during the August 2013 low-flow event. The sample was analyzed for VOC via EPA Method 8260 TCL only. The purpose of this sample was to help determine if potable water makes up some or all of the flow present in the storm sewer system under dry weather or drought-like conditions. Untreated potable water is used in the fire suppression system throughout the facility. Leaks from the underground portions of the fire suppression system may be infiltrating into the storm sewer system.

SAMPLING RESULTS

The detected compound concentrations from the VOC and oil and grease samples are summarized on attached figures and discussed in the analytical quality assessment and validation reports in Appendix 2 [Note: Table 3 in the analytical quality assessment and validation reports provide the analytical data in a tabular format]. The results of the oil and grease samples collected under low-flow conditions are summarized on Figure 4. The results of the VOC compounds of concern (discussed below) for the four (4) storm sewer sampling events and the nearby monitoring wells are summarized on Table 2 and Figure 5.

The analytical results are discussed below.

COMPOUNDS OF CONCERN

We note that compounds of concern (COCs), as identified in previous soil and groundwater investigations throughout the Site, are chlorinated solvent compounds, tetrachloroethene (PCE) and trichloroethene (TCE), and their associated breakdown products: cis-1,2-dichloroethene (cis-DCE), 1,1-dichloroethene (1,1-DCE), trans-1,2-dichloroethene (trans-DCE), and vinyl chloride (VC). The chlorinated solvents were used primarily in historical degreasing operations at the facility.

During the four (4) sampling event COCs have were detected in 17 of the 26 storm sewer locations sampled as part of the storm sewer investigation. The analytical results for the COCs along with recent groundwater monitoring well data are summarized on Figure 5.

Low-flow Sampling Events

The highest total COC concentrations (greater than 500 ppb) from the three (3) low-flow sampling events, which included 26 sampling locations, was detected at four (4) sampling locations.

- MH-6 (581 ppb), MH-17 (1,689) and MH-21 (1,051) are associated with the storm sewer servicing Building 10 and the area between Buildings 7 and 10. Elevated concentrations of COCs have been detected in the monitoring well inside Building 10 (MW-10-1) and five (5) wells located between Building 7 and 10 (MW-7-A-6,

MW-7-7 MW-7-8, MW-10-2 and MW-10-3). We note that there was no flow into MH-17 at the time of the sampling.

- MH-10 (1,033 ppb) is located along the main west-east orientated storm sewer line running through the GMCH facility located near the southeast corner of Building 8. Storm water from Building 10, northern portion of Building 7, southern portion of Building 8 and exterior storm water runoff from between the main buildings flow through MH-10 towards Outfall D002.

COC concentrations at the other 13 sampling locations ranged from 4.2 ppb (MH-4) to 265 ppb (MH-16). These locations are primarily located east of Buildings 9 and 10. A few locations of note are as follows.

- COC concentrations detected at MH-4, MH-5, MH-14 (associated with Building 8 storm sewer system) have a similar COC concentration profile as the nearby monitoring wells associated with Building 8 (MH-4 vs MW-8-1, MH-5 vs MW-8-3, and MH-14 vs MW-8-4).

- COC concentrations detected in MH-1 (222 ppb), MH-2 (25 ppb) and MH-9 (6 ppb) (associated with Building 7) decrease from west to east, similar to groundwater COC concentrations from previous investigations. We note that there was no flow into MH-1 and MH-9 at the time of the sampling. The detections of the COCs may be due to impacted sediment in the bottom of the structure or infiltration into the manhole itself.

- COC concentrations increase along the main west-east oriented storm sewer line running through the GMCH facility from MH-19 (non-detect) to MH-8 (242 ppb) to MH-10 (1,034 ppb), but decreases at MH-13 (158 ppb) and Outfall D002 (257 ppb). This decrease may be attributed to dilution from other storm sewer lines from Building 6 and northern portion of Building 8.

No COCs were detected above method detection limits at nine (9) manhole locations (MH-3, -12, -15, -19, -20, -22, -23, -24, and -25).

High-flow Sampling Event

The highest total COC concentration (greater than 500 ppb) from the one (1) high-flow sampling event, which included a total of 12 sampling locations, was detected at one (1) sampling location, MH-10. The total COC concentration for the high-flow event was 900 ppb compared to the low-flow event (1,033 ppb) at the same sample location.

COC concentrations at the other 12 sampling locations ranged from below method detection limits (MH-4, MH-5, and MH-16) to 315 ppb (Outfall D002).

Of the 12 locations sampled as part of the high-flow sampling event, there was a decrease in the concentrations at 11 of the locations when compared to the results of low-flow

sampling events at the same locations. The decrease in concentration was at least one order of magnitude at 9 locations (MH-1, MH-2, MH-4, MH-5, MH-11, MH-16, MH-17, MH-21 and Outfall D003). The location that did not have a decrease in concentration was Outfall D002. The concentration during the high-flow event was 315 ppb versus 250 ppb during the low-flow event; however, the detected concentrations are similar.

OTHER VOCS DETECTED

1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113) was used in a limited number of degreasers inside Building 8 for a relatively short period of time (1986 to 1994). It was detected at five (5) sampling locations. These five (5) locations are either directly associated with the Building 8 storm sewer system (MH-5 and MH-14) or are downgradient receivers of Building 8 storm water (MH-10, MH-13, and Outfall D002).

Acetone was detected at low concentrations at two locations (MH-19 (3 ppb) and MH-23 (6.6 ppb)) and it was the only compound detected above method detection limits at these locations. Acetone is not a concern, due to its low level detections, limited number of detections and its common appearance as a laboratory contaminant.

Tap Water Sample results indicated the presence of bromodichloromethane, bromoform, dibromochloromethane and chloroform. These four (4) compounds were detected in the sample collected from MH-12 and chloroform was detected in MH-1 and MH-16. This may indicate that tap water is infiltrating the storm sewer system (i.e., leaking fire suppression system or leaking water line).

OIL & GREASE

Oil & Grease was detected at eight (8) sample locations (MH-1, -2, -3, -4, -6, -10, -11, and -16) with detected concentrations ranging from 2 ppb to 5.4 ppb at an average of 3 ppb. Three (3) of the locations are associated with the Building 7 storm sewer system (MH-1, MH-2, and MH-11). One (1) location (MH-4) is upgradient of Building 8 and downgradient of Building 9. Three (3) locations are associated with Building 10 (MH-3, MH-6 and MH-16). One (1) location is associated with the main west-east oriented storm sewer line running through the facility (MH-10).

We note that during the high-flow sampling event, a petroleum odor was noted when MH-1 was opened for sampling. However, no sheen was observed on the water within the structure. The odor may be due to petroleum present in the vicinity of the storm sewer piping. The storm pipe from MH-1 north to MH-8 was previously slip-lined to prevent oil infiltration.

STORM WATER AND GROUNDWATER DATA COMPARISON

The COC concentrations detected in the storm water samples collected during low-flow sampling events were compared to the groundwater results of nearby monitoring wells. The results of that comparison are discussed below followed by the individual storm sewer

sampling locations. Figure 5 contains the results of the four (4) sampling events and the 2013 monitoring well groundwater data.

Low-flow sampling events were used rather than the high-flow, as low-flow are more likely representative of infiltration conditions into the storm sewer system and there were more non-detect concentrations during the high-flow event. [For example, the high-flow sample event results for MH-6 and MH-8 are generally the same concentration and same contaminant profile; however, their low-flow sampling event results have different concentrations and different contaminant profiles. MH-6 is about 450 feet upgradient of MH-8] We note that the following locations were excluded from the discussion below as there were no COCs detected at these locations: MH-3, -12, -15, -19, -20, -22, -23, -24, and -25.

The potential for groundwater infiltration into the storm sewer system appears to be evident at four locations throughout the storm sewer system, when comparing the results of the low-flow storm sewer events to the groundwater results (see Figure 5). They are as follows.

Building 8

The three (3) manholes that were sampled in association with Building 8 (MH-4, MH-5 and MH-14) have cis-DCE as the COC with the highest detected concentration and have similar cis-DCE concentrations results as the three (3) Building 8 monitoring wells (MW-8-1, MW-8-3 and MW-8-4) that are near the manholes that were sampled. Infiltration into the storm sewer pipes beneath Building 8 may be the cause of the COCs detected at these locations. However, the total COCs detected within each of the three (3) manholes is well below 500 ppb.

Between Building 7 and 10

Five (5) of the manholes that were sampled in association with Building 10 (MH-6, MH-16, MH-17, MH-18 and MH-21) have similarities to the nearby Building 7 and 10 monitoring wells, as follows.

MH-6 and MH-18 have similar COC profiles to nearby monitoring well, MW-10-3.

MH-16 has a similar cis-DCE concentration with nearby monitoring well, MW-7-8.

MH-17 has a similar COC profile to nearby monitoring wells, Bldg 10-MW-1 and MW-7-A-6.

MH-21 has a similar COC profile to nearby monitoring wells, MW-7-7 and Bldg 10-MW-1.

Infiltration into the storm sewer pipes between Buildings 7 and 10 may be the cause of the COCs detected at these locations. With the exception of MH-18, the total COCs detected at each of the other locations exceeds 500 ppb.

Southeast of Building 8

The contaminant profile detected at MH-10, MH-13 and Outfall D002 is similar to that of MW-7, but significantly lower in concentration (3 orders of magnitude). The detected concentrations at MH-13 are one order of magnitude lower than at MH-10 and Outfall D002, with the same contaminant profile. Storm water flowing from MH-10 flows through MH-13 (approximately 600 feet downgradient) and then to Outfall D002 (approximately 150 feet downgradient of MH-13). Infiltration in the vicinity of MH-10 may be the cause of the COCs detected at these locations. The total COCs detected at MH-10 are greater than 500 ppb and decrease in concentration to downgradient location MH-13 and Outfall D002 to less than 500 ppb.

East of Building 7

Two manholes (MH-11 and MH-25) and Outfall D003 were sampled in association with the storm sewers located east of Building 7. The total COC concentration at MH-11 (11.6 ppb) is similar to MW-7-P-1 (15.1 ppb, located about 300 feet upgradient of MH-11), but their contaminant profiles are not similar. No COCs were detected at MH-25.

Individual Manhole Location Discussion

MH-1: The closest monitoring well to MH-1 is MW-10-3 located about 300 feet west and upgradient (assuming an easterly flow direction). Cis-DCE was the COC detected at the highest concentration followed by TCE at both locations. However, the total COCs were actually higher in MH-1 (222 ppb) compared to MW-10-3 (87.4 ppb). Other nearby wells include MW-8-003-B, MW-8-2, and MW-7-7 but could be considered cross or down gradient.

MH-2: The closest monitoring well to MH-2 is MW-8-003-B located 180 feet northeast and cross-gradient based on the groundwater contours shown on Figure 2. The total COC concentrations at these locations are 24.8 ppb and 2,180 ppb (two orders of magnitude difference) with MW-8-003-B being the higher of the two. MH-2 does not appear to have a similar contaminant profile to other nearby wells.

MH-4: The closest monitoring well to MH-4 is MW-8-1 located about 180 feet north. Cis-DCE (4.2 ppb) was the only compound detected at MH-4 in August 2012 and cis-DCE (<1 ppb) was the only COC detected at MW-8-4 in both 2011 and 2012. The 2013 COC results for MW-8-1 were below method detection limits.

MH-5: The closest monitoring well to MH-5 is MW-8-3 located about 100 feet southeast. Cis-DCE was the COC detected at the highest concentration at both locations. Total COC at MH-5 (13.8 ppb) was slightly higher than MW-8-3 (4.3 ppb).

MH-6: The closest monitoring well to MH-6 is MW-10-3 located about 90 feet south. The total COCs detected at MH-6, during the two low-flow sampling events, are an order of magnitude higher than MW-10-3, but have a similar contaminant profile; cis-DCE detected at the highest concentration generally followed by PCE, TCE and VC.

MH-8: The closest monitoring wells to MH-8 are MW-8-2 (210 ft north) and MW-8-003-B (330 ft east). The COC contaminant profile at MH-8 is similar to that of MW-8-003-B, but the total COCs at MW-8-003-B (2,182 ppb) is an order of magnitude higher than MH-8 (242 ppb). There are no similarities with the contaminant profile at MW-8-2.

MH-9: The closest monitoring wells to MH-9 are MW-8-003-B (210 ft northwest) and MW-7-C-2 (285 ft southeast). The total COC concentrations are 2 to 3 order of magnitude higher than MH-9 and do not have similar contaminant profiles.

MH-10: The closest monitoring well to MH-10 is MW-7 located about 120 feet northwest. The total COC concentrations are almost 3 orders of magnitude different, MW-7 being higher, but TCE and cis-DCE were the top two contaminants detected at both locations.

MH-11: The closest monitoring well to MH-11 is MW-7-P-1 located 300 feet southwest. Although the total COC concentration at MH-11 (11.6 ppb) and MW-7-P-1 (15.1 ppb) are similar, their contaminant profiles are not.

MH-13: The closest monitoring well to MH-13 is MW-10 located about 75 feet west. Although the total COC concentration at MH-13 (157.9 ppb) and MW-10 (250 ppb) are similar, their contaminant profiles are not. The contaminant profile at MH-13 is similar to that at MH-10 and MW-7, with MH-10 directly upgradient from MH-13.

MH-14: The closest monitoring well to MH-6 is MW-8-4 located about 60 feet northwest. The total COC concentration at MH-11 (134 ppb) is about double that of MW-8-4 (62.9 ppb), but their contaminant profiles are the same.

MH-16: The closest monitoring well to MH-16 is MW-7-8 located about 110 feet northeast. Cis-DCE was the highest detected compound at both MH-16 (200 ppb) and MW-7-8 (280 ppb), the remaining portions of the contaminant profiles are not similar.

MH-17: The closest monitoring well to MH-17 is MW-10-2 located about 100 feet east. The total COC concentration at MH-17 (1,686 ppb) is about half that of MW-10-2 (3,260 ppb) and there are no similarities in their contaminant profiles.

MH-18: The closest monitoring well to MH-18 is MW-10-3 located about 150 feet southeast. The total COC concentrations at MH-18 (42 ppb) are the same order of magnitude as MW-10-3 (87.4 ppb) and have similar contaminant profiles.

MH-21: The closest monitoring wells to MH-21 are MW-7-7 (60 ft east) and Bldg 10-1 (180 ft west). The concentration profile for MH-21 is similar to both Bldg 10-1 and MW-7-7 but total COC concentrations are two orders of magnitude lower.

Storm Sewer Cleanout and Video Inspection

On October 22, 23, and 24, 2013, GZA subcontracted National Vacuum to clean and conduct a video camera inspection of approximately 1,600 linear feet of storm sewer piping located between Buildings 7 and 10, as shown on Figure 6. The work included the cleanout of the sediment in the pipes and manholes present along the storm sewer line prior to the video camera inspection.

The sediment that was removed from the storm sewer lines and manholes was placed into a lined roll-off container for disposal at Modern Landfill as non-hazardous soils, based on waste characterization sample analysis. The disposal documentation and laboratory results are included in Appendix 3. Approximately 6.85 tons of sediment was removed from the storm sewer system between Building 7 and 10. Because the sediment had to be removed in order to conduct the camera survey, no sediment samples were collected directly from the manhole structures. The water generated from the cleanout was containerized within the vacuum truck and decanted into the storm sewer system under low-flow conditions. Therefore, storm water flow and water generated from the cleanout project were discharged to the City of Lockport POTW, with their approval[3].

Appendix 4 contains the inspection report generated by National Vacuum. Figure 6 identifies the locations of the manhole structures and storm sewer pipes that were cleaned and inspected. Based on the review of the DVD video and inspection report provided, there are eleven (11) locations of "running" infiltration[4] which are noted on Figure 6. These locations appear to be providing the majority of the infiltration observed in the storm sewer on the video inspection.

Existing Storm Sewer Video Review

Although not part of the work plan, GMCH provided GZA with storm sewer videos for review. The videos were from storm sewer inspections completed between May 1994 and May 2002 by various contractors. Figure 7 identifies the approximate location of the storm sewer lines that were video inspected (shown in green). GZA reviewed the videos to assess the conditions of the storm sewers at the time of the video and if groundwater infiltration is potentially occurring. The quality of the videos reviewed varied. Review of the videos identified the following types of infiltration conditions at various locations of the storm sewers previously inspected.

[3] GMCH Environmental staff contacted and discussed the water generation and decant process with the City of Lockport POTW and received approval to discharge the water to the POTW under low-flow conditions.
[4] "running" infiltration refers to water infiltration that was observed on the video as entering the pipe and not infiltration that is assumed by moisture located on the walls of the pipe near joints or cracks.

- Grout at pipe connections was in poor condition or missing.
- Pipe joint separation.
- Infiltration from pipe bedding from pipe lateral crossing storm sewer.
- Infiltration at section of missing pipe wall.
- Sediment or standing water within pipes.
- Infiltration into manhole from pipe bedding beneath pipe.
- Longitudinal cracks in pipes.

CONCLUSIONS & RECOMMENDATIONS

Storm water samples collected during a high-flow event indicated a decrease in COC concentrations compared to the results from low-flow events, as to be expected. Based on the storm sewer sampling results, groundwater elevations, comparison to nearby groundwater data and storm sewer pipe video inspection in the vicinity of the structures sampled, groundwater infiltration is likely occurring at some locations. Video recordings of storm sewers located between Buildings 7 and 10 and previously completed videos indicated infiltration is occurring at pipe joints, missing pipe wall sections, or cracks in the pipes within the storm sewer system.

COCs were detected in some structures (MH-1, MH-9 and MH-17) where there was no flow at the time of the sampling and water was collected from the bottom of structures. These detections may be due to groundwater infiltration into the manhole structures or may have resulted from the presence of impacted sediments within the bottom of the structures.

We recommend evaluating remedial strategies to limit infiltration into the storm sewer system. The remedial strategies evaluation will be included in the Revised RWP to be submitted and may include slip lining, injection grouting, storm sewer replacement, and/or targeted repair of damaged pipe/joints. It is our opinion that the focus should be on the areas with elevated concentrations detected within the storm sewer system (greater than 500 ppb) and the impact it will have on the overall storm water quality.

If you need additional information or would like to discuss the project, please contact Jim Hartnett (GM Project Manager) at (315) 856-0211 or Chris Boron (GZA Project Manager) at (716) 844-7046.

Respectfully,

GZA GeoEnvironmental of New York

Christopher Boron
Senior Project Manager

Bart A. Klettke, P. E.
Associate Principal

Attachments:

	Figure 1	Site Plan &Location of Storm Sewers
	Figure 2	Groundwater Contour Map
	Figure 3	Storm Sewer Sampling Locations & Sewer Locations At or Below Groundwater
	Figure 4	Storm Sewer Oil & Grease Sampling Results
	Figure 5	Stormwater & Groundwater Sampling Results
	Figure 6	Storm Sewer Cleanout & Video Inspection Area
	Figure 7	Locations of Detected COCs & Storm Sewer Videos
	Table 1	Storm Sewer Structure Summary
	Table 2	Summary of Storm Sewer and Groundwater Analytical Results
	Appendix 1	NYSDEC April 22, 2013letter
	Appendix 2	Analytical Quality Assessment and Validation Reports
	Appendix 3	Waste Characterization Data & Waste Disposal Documentation
	Appendix 4	Storm Sewer Video Inspection Report

Cc: James Hartnett (GM, electronic copy)
Roy Knapp (GMCH, electronic copy)
Hillie LaDue (GMCH, electronic copy)
Denis Conley (Haley & Aldrich, electronic copy)

TABLES

TABLE 1
Storm Sewer Structure Summary
GMCH Lockport Facility
Lockport, New York

Location		Flow	COC Detections	Sheen	OVM Readings	MH Construction	MH Bottom Elevation	Depth to Water	# of Pipes	Pipe Location	Pipe Invert Elevation	Nearby GW Elevation Range	Nearby Well Info Used	Groundwater Elevation Relative to Bottom of Manhole & Pipe Inverts	Notes/Comments
MH-1	Interior Bldg 7 Col J63, NW corner	No	Yes	possible slight sheen	ND	Brick lined	606.96	NM	3			606.99 to 607.38	MW-7-7 MW-10-3 MW-8-2	At	Low-flow sample collected in August 2012 was from from water that had accumulated in bottom of MH. High-flow sample collected in June 2013 was from water accumulating within manhole. A sample was also collected directly from the southern pipe discharging into MH-1. A petroleum oder was noted within the manhole during the high-flow sampling event. The north pipe discharging from MH-1 appears to be slip-lined.
										South	609.95			Above	
										West	609.96			Above	
										North	607.55			At	
MH-2	Interior Bldg 7 Col V65, North central	Slight flow from south pipe	Yes	No	0.2ppm above background (0.4 ppm)	Brick lined	606.96	609.96	3			605.73 to 607.38	MW-7-7 MW-10-3 MW-8-2 MW-8-003B	At	Low-flow sample collected August 2012 was from discharge into the manhole from southern pipe.
										South	609.95			Above	
										West	607.46			At	
										North	607.45			At	
MH-3	Interior Bldg 10 Col WG43	No	No	No	ND	Brick lined	608.66	609.66	4			607.16 to 608.64	MW-10-1 MW-7-7 MW-10-3	At	Low-flow sample collected August 2012 was collected from water accumulated in bottom of MH.
										South	611.35			Above	
										East	613.25			Above	
										West	611.35			Above	
										North	611.35			Above	
MH-4	Exterior between Bldgs 8 & 9	Yes, flow from north upper pipe, north lower pipe, south lower pipe and west pipe.	Yes	Yes	ND	Brick lined	605.4	605.8	6			605.79 to 609.49	MW-8-1 MW-8-2 MW-9-12	Below	Low-flow (August 2012) and high-flow (June 2013) samples were collected from bottom of MH.
										North Lower	606.6			Below	
										North Upper	608.5			Below	
										South Lower	607.6			Below	
										South Upper	609.8			At	
										West	605.4			Below	
										East	605.4			Below	
MH-5	Interior of Bldg 8 Col V101 (Cold Storage)	Yes	Yes	No	ND	Brick lined	603.36	603.66	6			606.31 to 609.49	MW-8-1 MW-8-2 MW-8-3	Below	A water softener was discharging to the manhole via tubing through a perforation in the top of the MH cover. Low-flow sample (August 2012) and high-flow sample (June 2013) were collected from the water accumulating in the bottom of the MH.
										West	604.46			Below	
										North	608.46			Below	
										South	606.46			Below	
										Upper East	611.66			Above	
										Middle East	608.86			Above	
										Lower East	604.06			Below	
MH-6	Exterior near NW corner of Bldg 10	No	Yes	No	ND	Brick lined	605.22	605.62	3			606.99 to 607.07	MW-7-7 MW-10-3	Below	Two low-flow samples (August & October 2012) and one high-flow sample (June 2013) were collected from this location. Low-flow samples were collected with a bailer through the top of the structure.
										South	605.8			Below	
										West	605.88			Below	
										North	605.77			Below	
MH-7	Exterior between Bldg 7 & 10	Flow from south and west pipes in MH	NS	No	ND	Brick lined	5 feet bgs	4.9 feet bgs	3			No elevation data so GW assumed to be 2.3 to 3.9 feet bgs in vicinity of MH-7 based on MW-7-A-6, MW-7-8 and MW-10-2 GW measurements.	MW-10-2 MW-7-8 MW-7-A-6	Below	No sample collected, could not open or access MH. Observations and measurements made through MH cover.
										South	5 feet bgs			Below	
										West	5 ft bgs			Below	
										North	4.4.7 ft bgs			Below	

TABLE 1
Storm Sewer Structure Summary
GMCH Lockport Facility
Lockport, New York

Location		Flow	COC Detections	Sheen	OVM Readings	MH Construction	MH Bottom Elevation	Depth to Water	# of Pipes	Pipe Location	Pipe Invert Elevation	Nearby GW Elevation Range	Nearby Well Info Used	Pipe Relative to GW elevation and Bottom of Manhole	Notes/Comments
MH-8	Exterior near SE corner of Bldg 8	Flow from west to east through MH	Yes	No	ND	Brick lined	604.53	605.43	3			605.73 to 607.38	MW-8-2 MW-8-003B	Below	Both the low-flow (August 2012) and high-flow (June 2013) sample collected from water flowing though the manhole location. Pipe appears to be slip lined.
										West	605.13			Below	
										South	605.13			Below	
										East	605.13			Below	
MH-9	Exterior near NE corner of Bldg 7	No	Yes	No	0.3 ppm above background (0 ppm)	Brick lined	607.94	608.84	2			602.11 to 605.73	MW-8-003B MW-8	Above	Low-flow samples (August 2012) was collected from water that had accumulated in bottom of the manhole.
										South	609.95			Above	
										North	608.6			Above	
MH-10	Exterior near NE corner of Cooling Tower east of Bldg 8	Flow from west to east through MH	Yes	Yes	ND	Brick lined	595.19	595.2	3			605.05 to 606.32	MW-3S MW-7	Below	Both the low-flow (August 2012) and high-flow (June 2013) samples were collected from water flowing through the manhole. There is a solid ~1 ft diameter steel pipe passing through the manhole.
										West	595.19			Below	
										East	595.19			Below	
										North/South	597.49			Below	
MH-11	Exterior near SE corner of Bldg 7	Very low flow	Yes	Slight sheen	ND	Concrete lined	10.3 ft bgs	10.3 ft bgs	4			No elevation data so GW assumed to be 7 to 10 feet bgs in vicinity of MH-11 based on MW-7-P-1 and MW-7-5 GW measurements.	MW-7-P-1 MW-7-5	Below	Low-flow (August 2012) and high-flow (June 2013) samples were collected from the bottom of the manholes. The 1L amber for oil & grease sample during the low flow sampling could not be filled due to the very low flow.
										North	5.7 ft bgs			Above	
										Southeast	4.5 ft bgs			Above	
										East	10.3 ft bgs			Below	
										West	10.3 ft bgs			Below	
MH-12	Exterior, south side of Bldg 6	Flow from north pipe	No	No	ND	Brick lined	5.6 ft bgs	4.6 ft bgs	2			No elevation data so GW assumed to be 6 to 12 feet bgs in vicinity of MH-12 based on MW-4 and MW-10 GW measurements.	MW-4 MW-10	Above	Low-flow sample (August 2013) was collected from discharge from the north pipe into the manhole.
										North	4.7 ft bgs			Above	
										Southeast	4.7 ft bgs			Above	
MH-13	Exterior near MW-10 and Road 3	Yes	Yes	Yes	ND	Concrete lined	9.0 feet bgs	8.3 feet bgs	4			No elevation data so GW assumed to be 12 feet bgs in vicinity of MH-12 based on MW-10 GW measurements.	MW-10	Above	Low-flow sample (August 2013) was collected from water that was accumulating within the bottom of this large structure. MH-13 is part of a much larger structure than shown on sewer drawings. This structure no longer recieves discharge from Building 6 (MH-12) are this discharge was separated as part of the Building 6 separation project.
										Northwest	7 ft bgs			Above	
										East North	9 ft bgs			Above	
										East South	9 ft bgs			Above	
										West	NM			Above	
MH-14	Exterior, near SW corner of Bldg 6	Yes	Yes	Yes	ND	Brick lined	11.5 ft bgs	10.6 ft bgs	3			No elevation data so GW assumed to be 8 feet bgs in vicinity of MH-14 based on MW-8-4 GW measurements.	MW-8-4	Below	Low-flow sample (August 2013) was collected from water accumulated in bottom of the manhole.
										North	10.9			Below	
										West	10.5			Below	
										Southeast	10.7			Below	
MH-15	Exterior, near NW corner of Bldg 6, near former USTs	Yes	No	Yes	ND	Concrete lined	606	606.4	3			609.53	MW-6-F-8	Below	Low-flow sample (August 2013) was collected from the water that had accumulated in bottom of the manhole.
										North	606.37			Below	
										South	606.32			Below	
										West	607.32			Below	

TABLE 1
Storm Sewer Structure Summary
GMCH Lockport Facility
Lockport, New York

Location		Flow	COC Detections	Sheen	OVM Readings	MH Construction	MH Bottom Elevation	Depth to Water	# of Pipes	Pipe Location	Pipe Invert Elevation	Nearby GW Elevation Range	Nearby Well Info Used	Pipe Relative to GW elevation and Bottom of Manhole	Notes/Comments
MH-16	Exterior between Bldgs 7 & 10 near SE corner of Building 10	Yes, slight flow from south to north	Yes	No	ND	Brick lined	NM	NM	4			609.22	MW-7-8	Below	During the low-flow sampling (October 2012) the manhole could not be opened so the sample was collected with a bailer through the top of manhole cover grate. For the high-flow sampling (June 2013) the structure was opened and sampled.
										North	607.24			Below	
										South	NM			Below	
										East	NM			unknown	
										West	NM			unknown	
MH-17	Interior east central portion of Bldg 10	No	Yes	No	ND	Concrete lined	605.66	607.47	4			607.73	MW-10-2	Below	The flow-flow sample (October 2012) was collected from water that had accumulated in the bottom of the manhole. The high-flow sample (June 2013) was collected from water that was accumulating within the manhole.
										South	609.28			Above	
										Upper West	NM			Above	
										Lower West	612.58			Above	
										East	609.28			Above	
MH-18	Located in the northern loading dock of Bldg 10	No	Yes	No	ND	Brick lined	5.71	5.58	3			607.16	MW-10-3	Below	Low-flow sample (October 2012) was collected from water that had accumulated in bottom of the manhole.
										South	606.35			Below	
										East	606.35			Below	
										West	608.45			Above	
MH-19	Exterior location between Bulds 9 & 10 along main storm sewer line running west to east through Site	Yes, slight flow west to east	No	No	ND	Concrete lined	4.13	3.73	2			607.16	MW-10-3	Below	Low-flow samples (October 2012) was collected from the slight west to east flow through the manhole.
										West	606.33			Below	
										East	606.33			Below	
MH-20	Interior central portion of Bldg 9	Yes, slight flow from west to east	No	No	ND	Brick lined	607.24	608.03	4			~609	MW-9-101A MW-8-1	Below	Low-flow sample (October 2012) was collected from a slight west to east flow through the manhole.
										North	609.59			At	
										South	609.46			At	
										East	608.64			At	
										West	608.14			At	
MH-21	Exterior between Bldgs 7 & 10, near MW-7-7	Yes, slight flow from south to north	Yes	No	ND	Brick lined	NM	NM	2			607.46	MW-7-7	Below	The low-flow sample (October 2012) was collected from slight south to north flow through the sturcture. The high-flow sample (June 2013) was collected from water flowing through the sturcture. The bottom of the manhole was filled with sediment which was cleaned out in October 2013.
										North	606.18			Below	
										South	606.31			Below	
MH-22	Interior of Bldg 10 near Col WG5	Yes, slight flow frm South, SE and West and flowing to the north	No	No	ND	Brick lined	608.82	610.87	5			Aprroximately 609	Contour Map Estimation	Below	Low-flow samples (January 2013) was collected from water that had accumulated in bottom of the manhole.
										North	612.38			Above	
										South	613.33			Above	
										West	612.63			Above	
										SE	613.31			Above	
										NW	NM			Above	
MH-23	Interior of Bldg 10 near Col WG21	Yes, flow from south and slight flow from west and exit to the north	No	No	ND	Brick lined	607.51	608.58	5			Aprroximately 609	Coutour Map Estimation	Below	Low-flow sample (January 2013) was collected from water that had accumulated in bottom of the manhole.
										North	610.28			Above	
										South	610.53			Above	
										West	612.63			Above	
										East	613.3			Above	
										SE	NM			Above	
										NW	NM			Above	
MH-24	Interior of Bldg 10 near Col WV31	Yes, slight flow in to MH from south to east	No	No	ND	Brick lined	609.7	611.99	3			Approximately 610	Contour Map Estimation	Below	Low-flow sample (January 2013) was collected from water that had accumulated in bottom of the manhole.
										West	613.96			Above	
										South	613.7			Above	
										East	613.7			Above	
MH-25	Exterior, South of Bldg 7A	Yes, slight flow from west to south	No	No	ND	Brick lined	6.9	6.21	3			~600	Contour Map Estimation	Below	Low-flow sample (January 2013) was collected from water that had accumulated in bottom of the manbhole.
										North	598.55			Below	
										South	599.55			Below	
										West	600.77			At	

GZA interperted elevation or depth based on field measurements.
bgs = below ground surface.
ND = non detect
NM = not measured

Table 2
Summary of the Storm Sewer and Groundwater Analytical Results
GMCH Lockport Facility
Lockport, New York

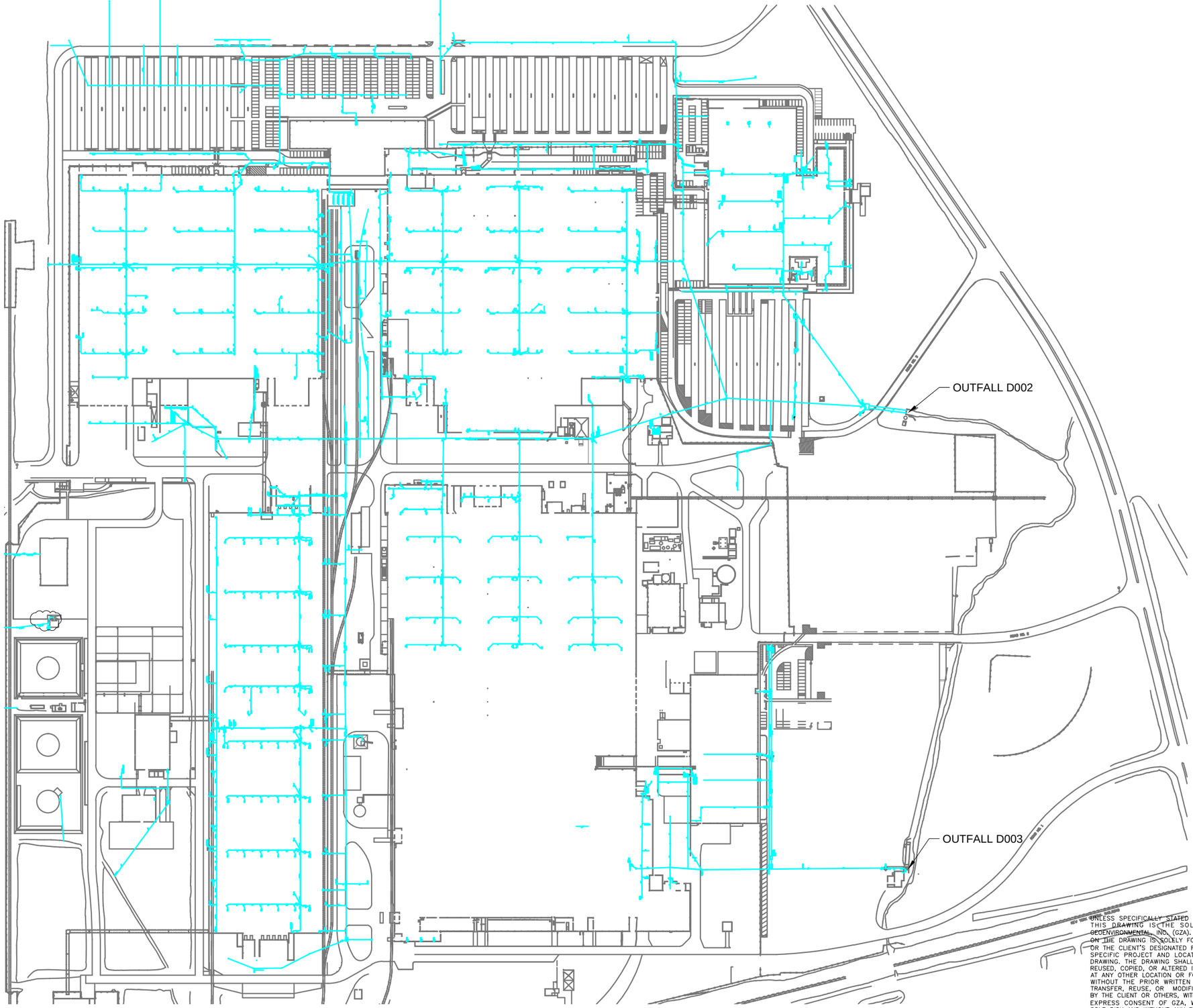
	Storm Sewer Sampling Results																		
Location	MH-1	MH-1	MH-2	MH-3	MH-4	MH-4	MH-5	MH-5	MH-6	MH-6	MH-6	MH-8	MH-8	MH-9	MH-10	MH-10	MH-11	MH-11	MH-12	MH-13
Date	8/30/2012	6/13/2013	8/30/2013	8/30/2012	8/30/2012	6/13/2013	8/30/2012	6/13/2013	8/30/2012	10/5/2012	6/13/2013	8/30/2012	6/13/2013	8/30/2012	8/30/2013	6/13/2013	8/30/2012	6/13/2013	8/30/2012	8/30/2012
cis-DCE	120	3.2	7.4		4.2		9.4		300	650	44	78	46	3.5	360	240	4.5			63
PCE	1.2	0.43	14						150	19	92	90	92	0.69	140	150	4	0.65		15
trans-DCE	1.7		3.4						2.2						3					
TCE	96	20					3.1		98	16	43	59	43	2.1	510	510	1.9			74
VC	3.1						1.3		30	99	3.4	15	5		20		1.2			5.9
Total VOCs	222	23.63	24.8	0	4.2	0	13.8	0	580.2	784	182.4	242	186	6.29	1033	900	11.6	0.65	0	157.9

	Storm Sewer Sampling Results																		
Location	MH-14	MH-15	MH-16	MH-16	MH-17	MH-17	MH-18	MH-19	MH-20	MH-21	MH-21	MH-22	MH-23	MH-24	MH-25	Outfall 002	Outfall 002	Outfall 003	Outfall 003
Date	8/30/2012	8/30/2012	10/5/2012	6/13/2013	10/5/2012	6/13/2013	10/5/2012	10/5/2012	10/5/2012	10/5/2012	6/13/2013	1/4/2013	1/4/2013	1/4/2013	1/4/2013	10/5/2013	6/13/2013	10/5/2013	6/13/2013
cis-DCE	98		200		310	3.1	29			200	18					96	89	140	3.2
PCE			3.6		730	7.5	8.5			620	74					25	62	5.7	0.92
trans-DCE			6.3																
TCE	6		7.5		640	5.9	4.5			220	17					120	160	5.4	
VC	30		47		5.9					11	1.4					9.4	4.1	6.3	
Total VOCs	134	0	264.4	0	1685.9	16.5	42	0	0	1051	110.4	0	0	0	0	250.4	315.1	157.4	4.12

	Building 7 BCP Site Monitoring Wells											Building 8 BCP Site Monitoring Wells							
Location	MW-7-1	MW-7-2	MW-7-3	MW-7-4	MW-7-5	MW-7-6	MW-7-7	MW-7-8	MW-7-A-6	MW-7-C-2	MW-7-P-1	MW-6-1	MW-6-2	MW-6-F-8	MW-8-1	MW-8-2	MW-8-3	MW-8-4	MW-8-003-B
Date	5/6/2013	5/6/2013	5/6/2013	5/7/2013	5/7/2013	5/7/2013	5/8/2013	5/9/2013	5/8/2013	5/7/2013	5/8/2013	5/14/2013	5/14/2013	5/14/2013	5/10/2013	5/13/2013	5/14/2013	5/13/2013	5/10/2013
cis-DCE			7.0		1,000	750	4,400	280	26,000	430	1.1					7,800	3	43	790
PCE					11,000	980	120,000	110	140,000								0.49		880
trans-DCE											2.3					77			
TCE					1,200	440	2,300	66	28,000		0.74					200	0.78	7.9	390
VC			38			88				18	11					270		12	120
Total VOCs	0	0	45	0	13,200	2,258	126,700	456	194,000	448	15.14	0	0	0	0	8,347	4.27	62.9	2,180

	Building 10 BCP Site Wells				Delphi Harrison Thermal System Site Monitoring Wells							
Location	MW-9-101A	DG-10-MW	MW-10-2	MW-10-3	MW-4	MW-7	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15
Date	5/10/2013	5/9/2013	5/9/2013	5/9/2013	5/1/2013	5/3/2013	5/1/2013	5/2/2013	5/3/2013	5/2/2013	5/3/2013	5/1/2013
cis-DCE			2,600	38	45,000	55,000	180	1.1	150			
PCE	11	180,000	150	24								6.8
trans-DCE									1			
TCE	1.7	3,000	450	24	24,000	880,000	56		2			0.64
VC			60	1.4	6,600		14	1.1	73			
Total VOCs	12.7	183,000	3,260	87.4	75,600	935,000	250	2.2	226	0	0	7.44

FIGURES



N
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LEGEND:

LOCATION OF STORM SEWER

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING PROVIDED BY DELPHI THERMAL AND INTERIOR SYSTEMS SEPT. 2007.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 150 300 600

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

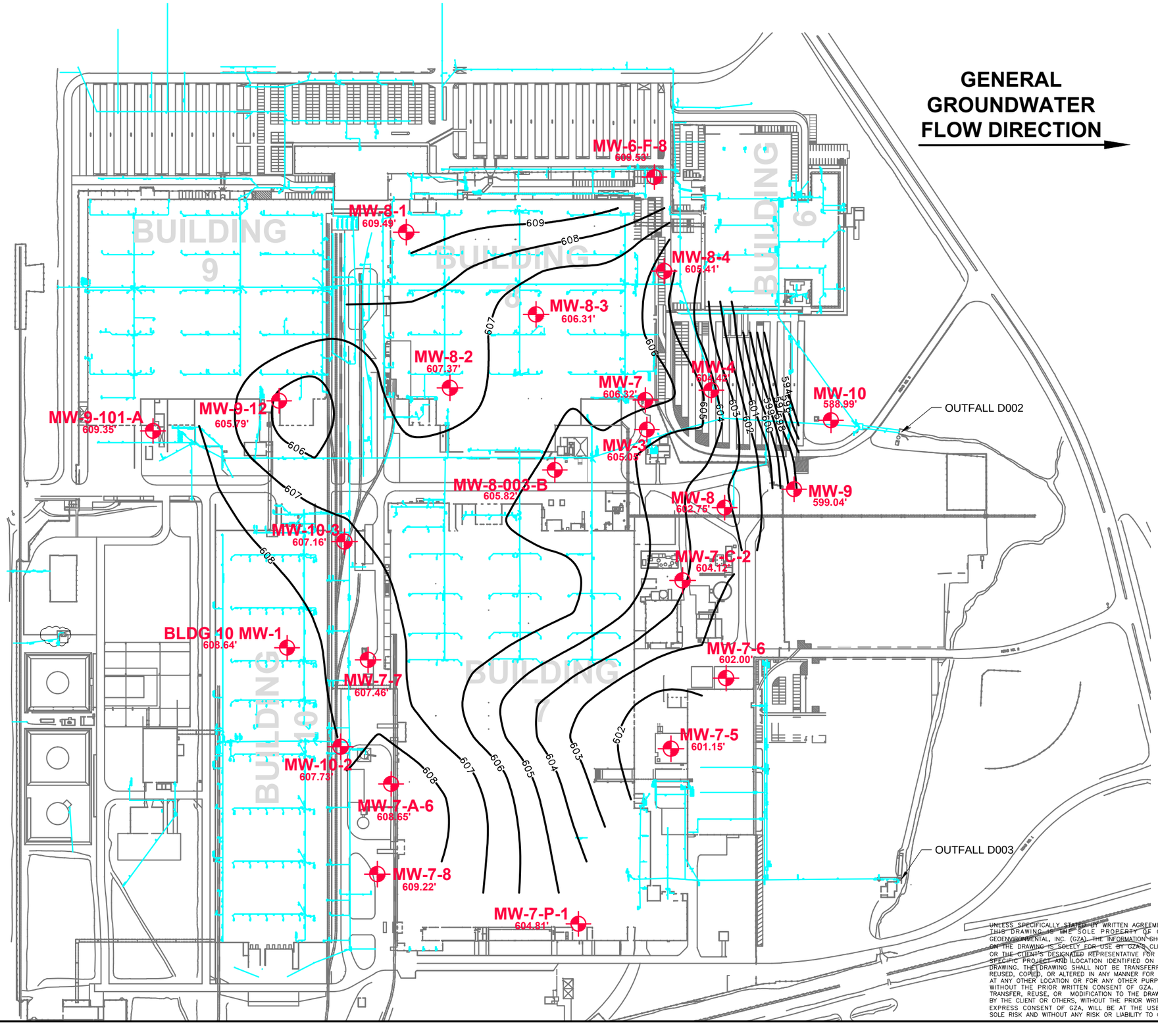
LOCKPORT FACILITY
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

SITE PLAN & LOCATION OF STORM SEWERS

PREPARED BY:
GZA GeoEnvironmental of N.Y.
Engineers and Scientists
535 WASHINGTON STREET 11th FLOOR
BUFFALO, NEW YORK 14203
(716) 685-2300

PREPARED FOR:
GM COMPONENTS HOLDINGS, LLC

PROJ MGR: CZB	REVIEWED BY:	CHECKED BY:	FIGURE
DESIGNED BY:	DRAWN BY: DEW	SCALE: AS SHOWN	1
DATE JANUARY 2014	PROJECT NO. 21.0056546.00	REVISION NO.	



LEGEND:

MW-10 588.99' — APPROXIMATE LOCATION AND DESIGNATION OF EXISTING MONITORING WELLS WITH CORRESPONDING GROUNDWATER ELEVATION FROM 9/12/2012

LOCATION OF STORM SEWER

602 — GROUNDWATER ELEVATION CONTOURS

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING PROVIDED BY DELPHI THERMAL AND INTERIOR SYSTEMS SEPT. 2007.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 150 300 600

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

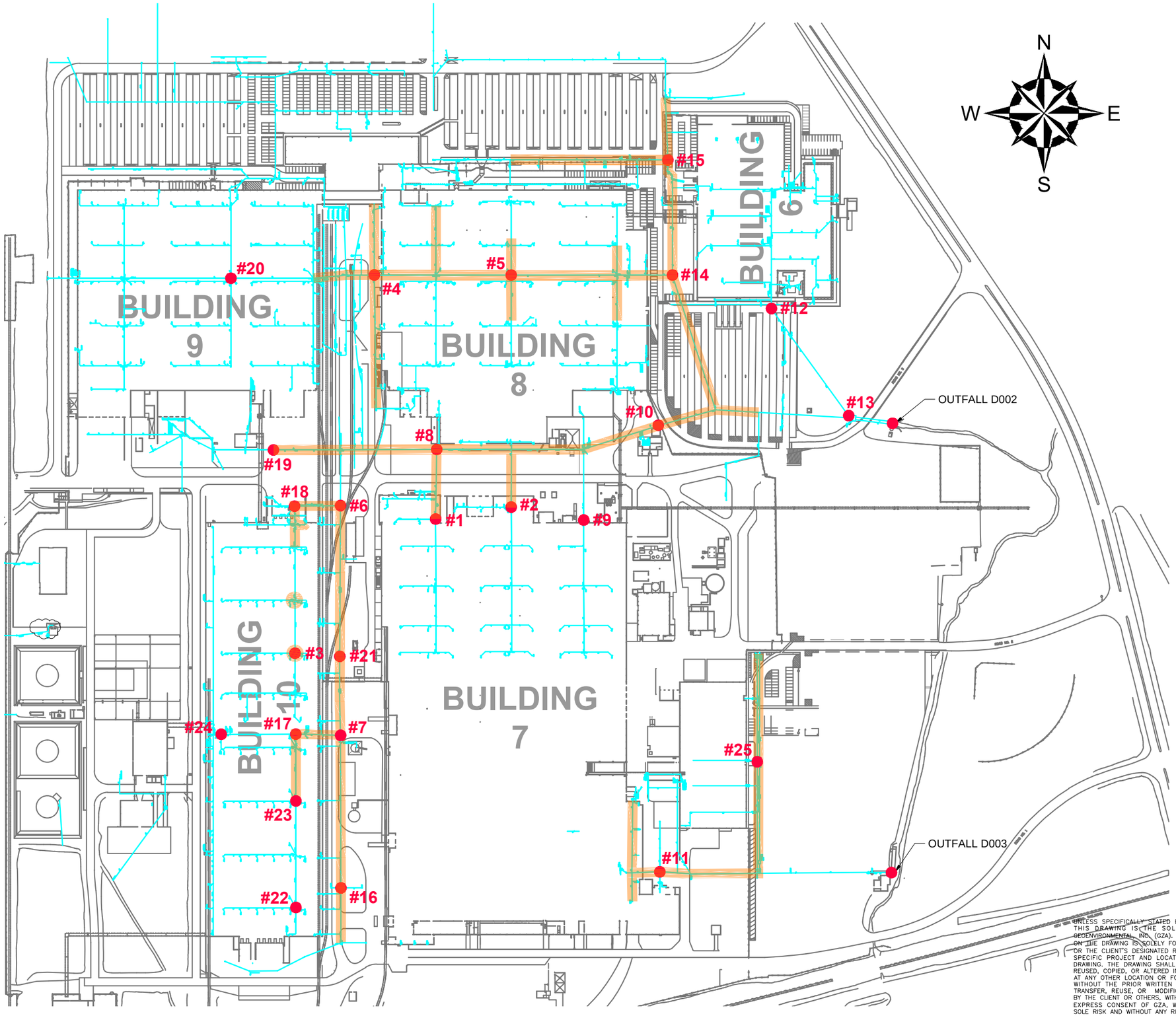
LOCKPORT FACILITY
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

GROUNDWATER CONTOUR MAP

PREPARED BY:
GZA GeoEnvironmental of N.Y.
Engineers and Scientists
535 WASHINGTON STREET 11th FLOOR
BUFFALO, NEW YORK 14203
(716) 685-2300

PREPARED FOR:
GM COMPONENTS HOLDINGS, LLC

PROJ MGR: CZB	REVIEWED BY:	CHECKED BY:	FIGURE 2
DESIGNED BY:	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE JANUARY 2014	PROJECT NO. 21.0056546.00	REVISION NO.	



LEGEND:

- APPROXIMATE LOCATION OF STORM SEWER AT OR BELOW GROUNDWATER
- LOCATION OF STORM SEWER
- #1 APPROXIMATE LOCATION AND DESIGNATION OF STORM SEWER SAMPLING POINT

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING PROVIDED BY DELPHI THERMAL AND INTERIOR SYSTEMS SEPT. 2007.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 150 300 600

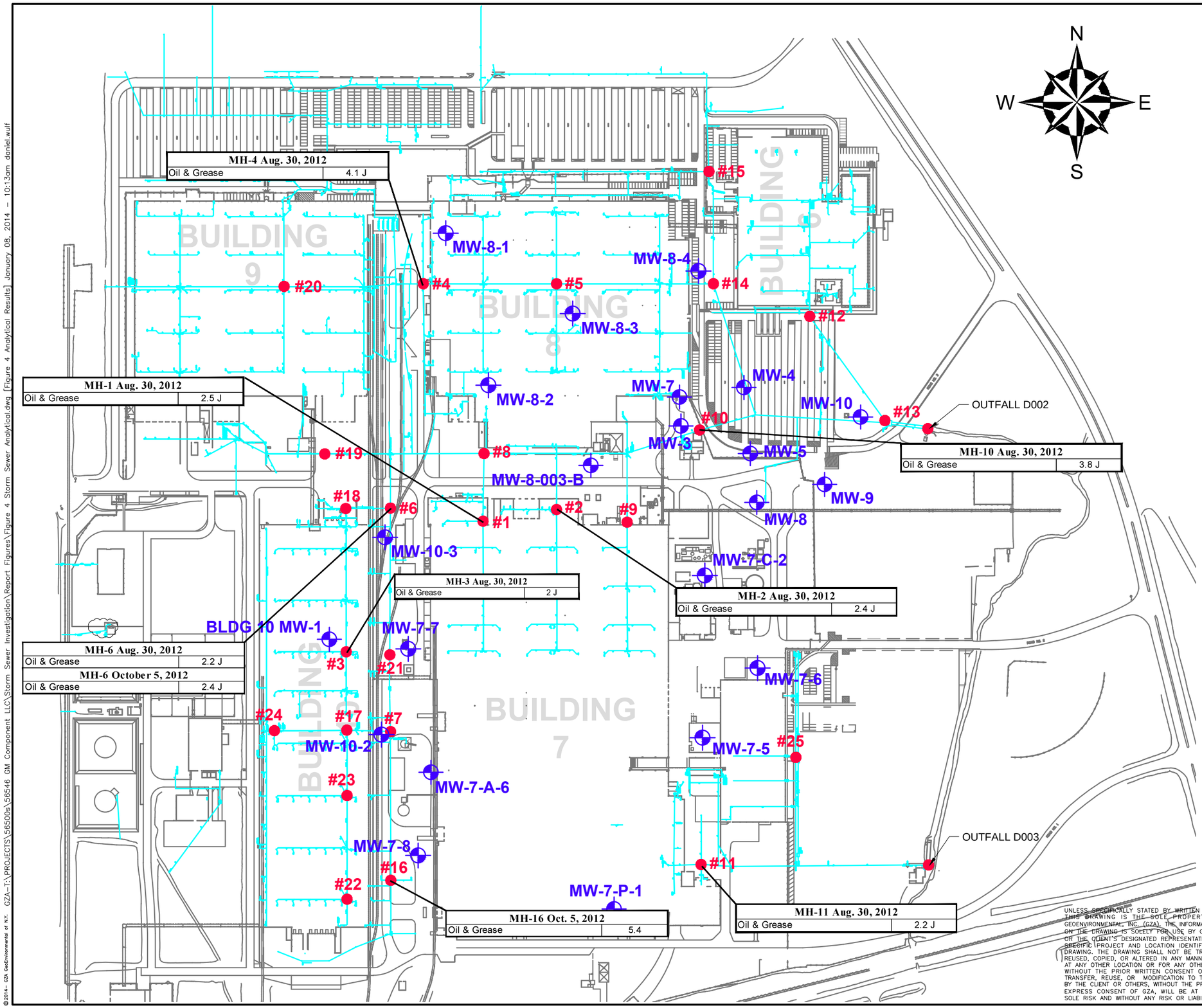
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

LOCKPORT FACILITY
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

STORM SEWER SAMPLING LOCATIONS & SEWER LOCATIONS AT OR BELOW GROUNDWATER

PREPARED BY: GZA GeoEnvironmental of N.Y. Engineers and Scientists, 535 WASHINGTON STREET 11th FLOOR, BUFFALO, NEW YORK 14203, (716) 685-2300		PREPARED FOR: GM COMPONENTS HOLDINGS, LLC	
PROJ MGR: CZB	REVIEWED BY:	CHECKED BY:	FIGURE 3
DESIGNED BY:	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE JANUARY 2014	PROJECT NO. 21.0056546.00	REVISION NO.	



LEGEND:

MW-10	APPROXIMATE LOCATION AND DESIGNATION OF EXISTING MONITORING WELLS
#1	APPROXIMATE LOCATION AND DESIGNATION OF STORM SEWER SAMPLING POINTS
	LOCATION OF STORM SEWER
J	RESULT IS LESS THAN THE RL BUT GREATER THAN OR EQUAL TO THE MDL AND THE CONCENTRATION IS AN APPROXIMATE VALUE
DL	INDICATES A DILUTION ANALYSIS OF THE SAMPLE

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING PROVIDED BY DELPHI THERMAL AND INTERIOR SYSTEMS SEPT. 2007.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

3. ANALYTICAL RESULTS SHOWN ARE IN UNITS OF ug/L (PARTS PER BILLION).

0 150 300 600

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

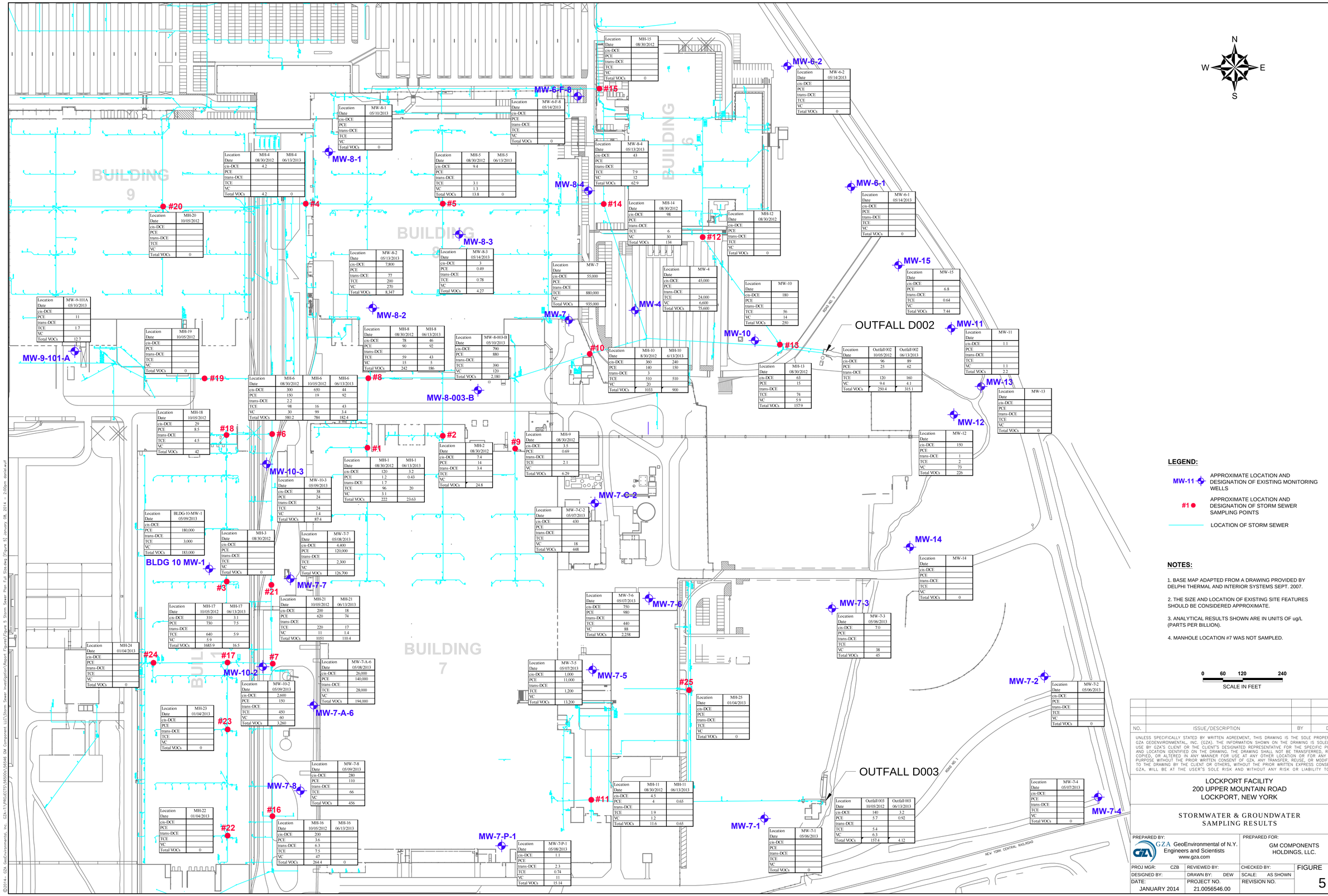
LOCKPORT FACILITY
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

STORM SEWER OIL & GREASE SAMPLING RESULTS

PREPARED BY:
GZA GeoEnvironmental of N.Y.
Engineers and Scientists
535 WASHINGTON STREET 11th FLOOR
BUFFALO, NEW YORK 14203
(716) 685-2300

PREPARED FOR:
GM COMPONENTS HOLDINGS, LLC

PROJ MGR: CZB	REVIEWED BY:	CHECKED BY:	FIGURE 4
DESIGNED BY:	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE JANUARY 2014	PROJECT NO. 21.0056546.00	REVISION NO.	



Location	MW-8-1
Date	05/10/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-6-F-8
Date	05/14/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MH-15
Date	08/30/2012
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-8-4
Date	05/13/2013
cis-DCE	43
PCE	
trans-DCE	
TCE	7.9
VC	12
Total VOCs	62.9

Location	MW-6-2
Date	05/14/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MH-4	MH-4
Date	08/30/2012	06/13/2013
cis-DCE	4.2	
PCE		
trans-DCE		
TCE		
VC		
Total VOCs	4.2	0

Location	MH-5	MH-5
Date	08/30/2012	06/13/2013
cis-DCE	9.4	
PCE		
trans-DCE		
TCE	3.1	
VC	1.3	
Total VOCs	13.8	0

Location	MH-14
Date	08/30/2012
cis-DCE	98
PCE	
trans-DCE	
TCE	6
VC	30
Total VOCs	134

Location	MH-12
Date	08/30/2012
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-6-1
Date	05/14/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MH-20
Date	10/05/2012
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-8-2
Date	05/13/2013
cis-DCE	7,800
PCE	
trans-DCE	77
TCE	200
VC	270
Total VOCs	8,347

Location	MW-8-3
Date	05/14/2013
cis-DCE	3
PCE	0.49
trans-DCE	
TCE	0.78
VC	
Total VOCs	4.27

Location	MW-7
Date	
cis-DCE	55,000
PCE	
trans-DCE	
TCE	880,000
VC	
Total VOCs	935,000

Location	MW-4
Date	
cis-DCE	45,000
PCE	
trans-DCE	
TCE	24,000
VC	6,600
Total VOCs	75,600

Location	MW-10
Date	
cis-DCE	180
PCE	
trans-DCE	
TCE	56
VC	14
Total VOCs	250

Location	MW-15
Date	
cis-DCE	
PCE	6.8
trans-DCE	
TCE	0.64
VC	
Total VOCs	7.44

Location	MW-9-101A
Date	05/10/2013
cis-DCE	
PCE	11
trans-DCE	
TCE	1.7
VC	
Total VOCs	12.7

Location	MH-19
Date	10/05/2012
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MH-8	MH-8
Date	08/30/2012	06/13/2013
cis-DCE	78	46
PCE	90	92
trans-DCE		
TCE	59	43
VC	15	5
Total VOCs	242	186

Location	MW-8-003-B
Date	05/10/2013
cis-DCE	790
PCE	880
trans-DCE	
TCE	390
VC	120
Total VOCs	2,180

Location	MH-10	MH-10
Date	8/30/2012	6/13/2013
cis-DCE	360	240
PCE	140	150
trans-DCE	3	
TCE	510	510
VC	20	
Total VOCs	1033	900

Location	MH-13
Date	08/30/2012
cis-DCE	63
PCE	15
trans-DCE	
TCE	74
VC	5.9
Total VOCs	157.9

Location	Outfall 002	Outfall 002
Date	10/05/2012	06/13/2013
cis-DCE	96	89
PCE	25	62
trans-DCE		
TCE	120	160
VC	9.4	4.1
Total VOCs	250.4	315.1

Location	MW-11
Date	
cis-DCE	1.1
PCE	
trans-DCE	
TCE	
VC	1.1
Total VOCs	2.2

Location	MW-13
Date	
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MH-18
Date	10/05/2012
cis-DCE	29
PCE	8.5
trans-DCE	
TCE	4.5
VC	
Total VOCs	42

Location	MH-1	MH-1
Date	08/30/2012	06/13/2013
cis-DCE	120	3.2
PCE	1.2	0.43
trans-DCE	1.7	
TCE	96	20
VC	3.1	
Total VOCs	222	23.63

Location	MH-2
Date	08/30/2012
cis-DCE	7.4
PCE	14
trans-DCE	3.4
TCE	
VC	
Total VOCs	24.8

Location	MH-9
Date	08/30/2012
cis-DCE	3.5
PCE	0.69
trans-DCE	
TCE	2.1
VC	
Total VOCs	6.29

Location	MW-12
Date	
cis-DCE	150
PCE	
trans-DCE	1
TCE	2
VC	73
Total VOCs	226

Location	MW-10-3
Date	05/09/2013
cis-DCE	38
PCE	24
trans-DCE	
TCE	24
VC	1.4
Total VOCs	87.4

Location	MW-7-C-2
Date	05/07/2013
cis-DCE	430
PCE	
trans-DCE	
TCE	
VC	18
Total VOCs	448

Location	BLDG-10-MW-1
Date	05/09/2013
cis-DCE	
PCE	180,000
trans-DCE	
TCE	3,000
VC	
Total VOCs	183,000

Location	MH-3
Date	08/30/2012
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-7-7
Date	05/08/2013
cis-DCE	4,400
PCE	120,000
trans-DCE	
TCE	2,300
VC	
Total VOCs	126,700

Location	MW-7-6
Date	05/07/2013
cis-DCE	750
PCE	980
trans-DCE	
TCE	440
VC	88
Total VOCs	2,258

Location	MW-7-3
Date	05/06/2013
cis-DCE	7.0
PCE	
trans-DCE	
TCE	
VC	38
Total VOCs	45

Location	MH-17	MH-17
Date	10/05/2012	06/13/2013
cis-DCE	310	3.1
PCE	780	7.5
trans-DCE		
TCE	640	5.9
VC	5.9	
Total VOCs	1685.9	16.5

Location	MH-21	MH-21
Date	10/05/2012	06/13/2013
cis-DCE	200	18
PCE	620	74
trans-DCE		
TCE	220	17
VC	11	1.4
Total VOCs	1051	110.4

Location	MW-7-5
Date	05/07/2013
cis-DCE	1,000
PCE	11,000
trans-DCE	
TCE	1,200
VC	
Total VOCs	13,200

Location	MH-25
Date	01/04/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-7-2
Date	05/06/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MH-24
Date	01/04/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-7-A-6
Date	05/08/2013
cis-DCE	26,000
PCE	140,000
trans-DCE	
TCE	28,000
VC	
Total VOCs	194,000

Location	MW-10-2
Date	05/09/2013
cis-DCE	2,600
PCE	150
trans-DCE	
TCE	450
VC	60
Total VOCs	3,260

Location	MH-23
Date	01/04/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-7-8
Date	05/09/2013
cis-DCE	280
PCE	110
trans-DCE	
TCE	66
VC	
Total VOCs	456

Location	MH-11	MH-11
Date	08/30/2012	06/13/2013
cis-DCE	4.5	
PCE	4	0.65
trans-DCE		
TCE	1.9	
VC	1.2	
Total VOCs	11.6	0.65

Location	MW-7-4
Date	05/07/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	MW-7-1
Date	05/06/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

Location	Outfall 003	Outfall 003
Date	10/05/2012	06/13/2013
cis-DCE	140	3.2
PCE	5.7	0.92
trans-DCE		
TCE	5.4	
VC	6.3	
Total VOCs	157.4	4.12

Location	MH-16	MH-16
Date	10/05/2012	06/13/2013
cis-DCE	200	
PCE	3.6	
trans-DCE	6.3	
TCE	7.5	
VC	47	
Total VOCs	264.4	0

Location	MW-7-P-1
Date	05/08/2013
cis-DCE	1.1
PCE	
trans-DCE	2.3
TCE	0.74
VC	11
Total VOCs	15.14

Location	MH-22
Date	01/04/2013
cis-DCE	
PCE	
trans-DCE	
TCE	
VC	
Total VOCs	0

LEGEND:

MW-11 — APPROXIMATE LOCATION AND DESIGNATION OF EXISTING MONITORING WELLS

#1 — APPROXIMATE LOCATION AND DESIGNATION OF STORM SEWER SAMPLING POINTS

LOCATION OF STORM SEWER

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING PROVIDED BY DELPHI THERMAL AND INTERIOR SYSTEMS SEPT. 2007.
2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.
3. ANALYTICAL RESULTS SHOWN ARE IN UNITS OF ug/L (PARTS PER BILLION).
4. MANHOLE LOCATION #7 WAS NOT SAMPLED.

0 60 120 240
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

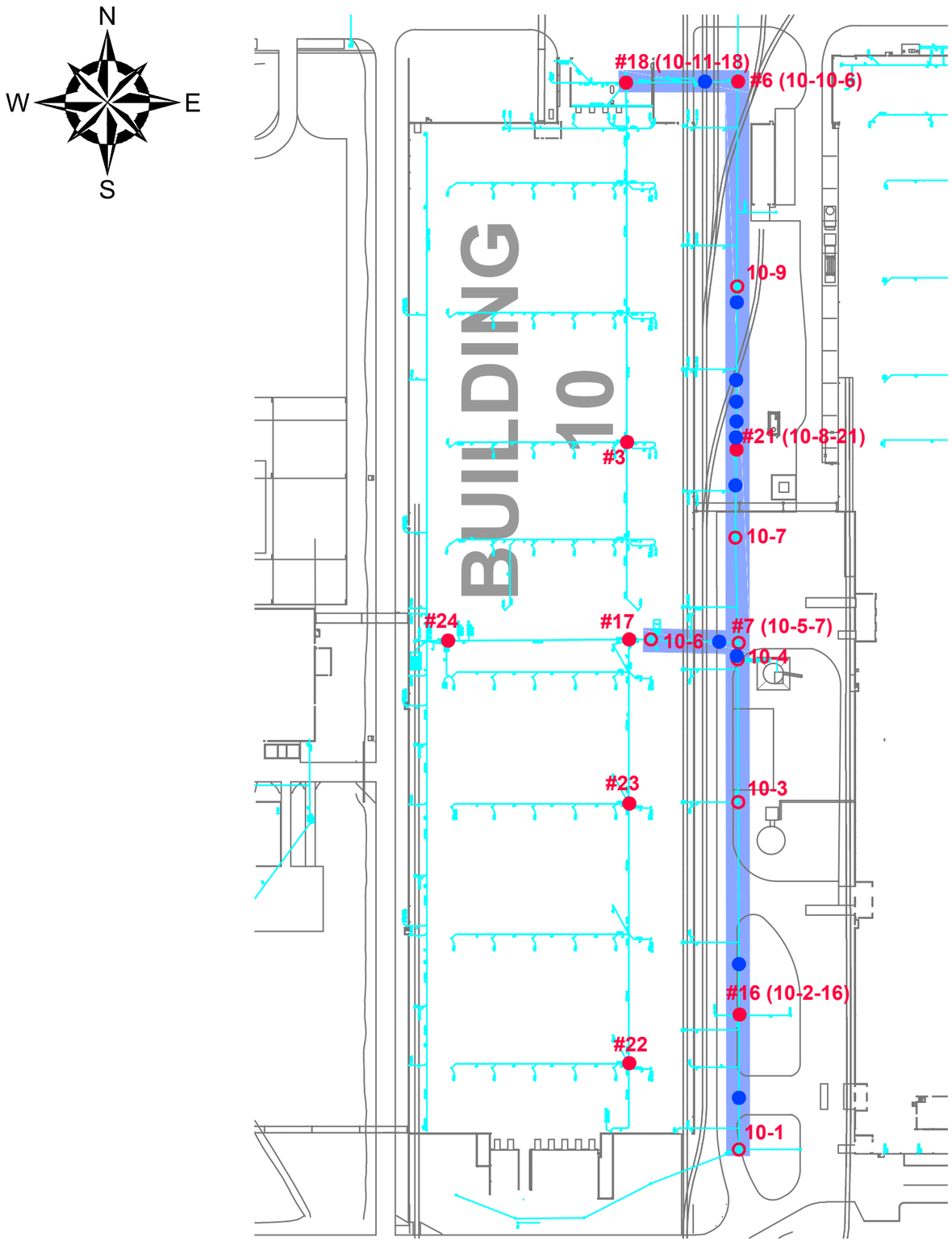
LOCKPORT FACILITY
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

STORMWATER & GROUNDWATER SAMPLING RESULTS

PREPARED BY:
GZA GeoEnvironmental of N.Y.
Engineers and Scientists
www.gza.com

PREPARED FOR:
GM COMPONENTS HOLDINGS, LLC.

PROJ MGR: CZB	REVIEWED BY:	CHECKED BY:	FIGURE 5
DESIGNED BY:	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE: JANUARY 2014	PROJECT NO. 21.0056546.00	REVISION NO.	



LEGEND:

- PORTION OF STORM SEWER CLEANED AND VIDEO INSPECTION COMPLETED IN OCTOBER 2013
- LOCATION OF STORM SEWER
- #21 — APPROXIMATE LOCATION AND DESIGNATION OF STORM SEWER SAMPLING POINTS
- #16 (10-2-16) — DESIGNATION GIVEN TO PREVIOUSLY SAMPLED MANHOLE FOR PURPOSES OF VIDEO INSPECTION DOCUMENTATION
- 10-3 — DESIGNATION GIVEN TO MANHOLE FOR PURPOSES OF VIDEO INSPECTION DOCUMENTATION
- LOCATION OF OBSERVED "RUNNING" INFILTRATION

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING PROVIDED BY DELPHI THERMAL AND INTERIOR SYSTEMS SEPT. 2007.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 150 300

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

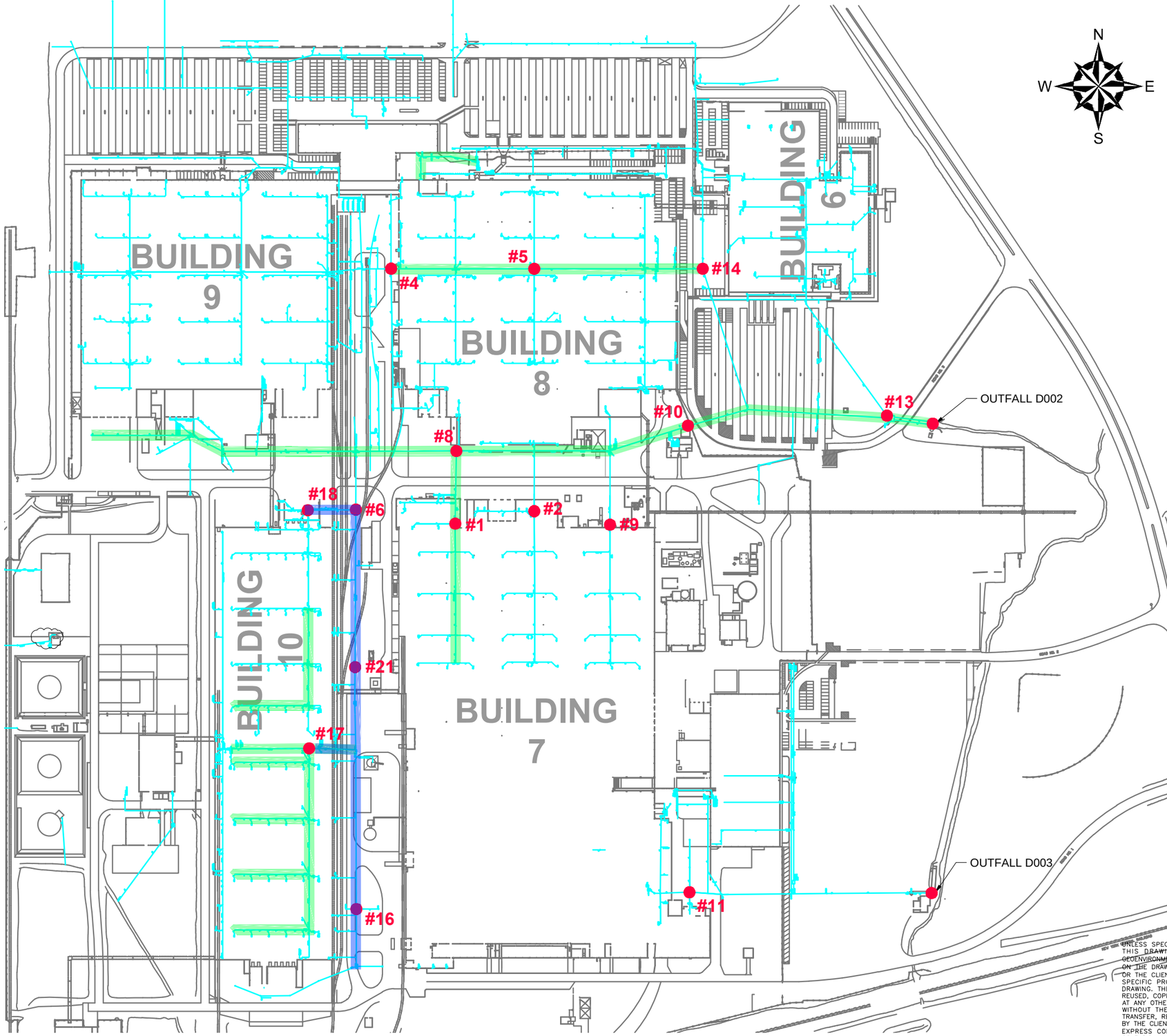
LOCKPORT FACILITY
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

STORM SEWER CLEANOUT & VIDEO INSPECTION AREA

PREPARED BY:
GZA GeoEnvironmental of N.Y.
Engineers and Scientists
535 WASHINGTON STREET 11th FLOOR
BUFFALO, NEW YORK 14203
(716) 685-2300

PREPARED FOR:
GM COMPONENTS HOLDINGS, LLC

PROJ MGR: CZB	REVIEWED BY:	CHECKED BY:	FIGURE
DESIGNED BY:	DRAWN BY: MDK	SCALE: AS SHOWN	6
DATE JANUARY 2014	PROJECT NO. 21.0056546.00	REVISION NO.	



LEGEND:

- APPROXIMATE PORTIONS OF STORM SEWER PREVIOUSLY VIDEO SURVEYED THAT WERE REVIEWED
- PORTION OF STORM SEWER CLEANED AND VIDEO INSPECTION COMPLETED IN OCTOBER 2013
- LOCATION OF STORM SEWER
- ● #1 APPROXIMATE LOCATION OF STORM SEWER SAMPLING POINT WITH COC DETECTION

NOTES:

1. BASE MAP ADAPTED FROM A DRAWING PROVIDED BY DELPHI THERMAL AND INTERIOR SYSTEMS SEPT. 2007.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 150 300 600

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

LOCKPORT FACILITY
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK

LOCATION OF DETECTED COCs & STORM SEWER VIDEOS

PREPARED BY: GZA GeoEnvironmental of N.Y. Engineers and Scientists, 535 WASHINGTON STREET 11th FLOOR, BUFFALO, NEW YORK 14203, (716) 685-2300		PREPARED FOR: GM COMPONENTS HOLDINGS, LLC	
PROJ MGR: CZB	REVIEWED BY:	CHECKED BY:	FIGURE 7
DESIGNED BY:	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE JANUARY 2014	PROJECT NO. 21.0056546.00	REVISION NO.	