

## **Mcpherson, Benjamin J (DEC)**

---

**From:** John Pentilchuk <John.Pentilchuk@ghd.com>  
**Sent:** Tuesday, November 30, 2021 11:21 AM  
**To:** Mcpherson, Benjamin J (DEC)  
**Cc:** joseph\_branch@oxy.com; Bathory, Tim  
**Subject:** RE: OCC Buffalo Avenue Plant - 3rd Quarter 2021 Progress Report and BEW700B

*ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.*

Ben:

The footnote for Well WS111R was left off the table in error. This well is believed to have been destroyed several years ago. The area is paved over and no evidence of the well could be found using well coordinates and metal detector. I will make sure the footnote gets added in future reports.

Regarding BEW700B, the issues that we have been having with this well seem to be unrelated. The most recent downtime event was caused by the pump motor failure. The pump itself was found to spin freely even though there was some sediment found in the bottom of the well at the same level as the pump intake. The pump control system was checked and no issues were found. The pump has been working fine since replacement and operational parameters are within normal range. We will keep an eye on this pump and see if the frequency of downtime can be improved.

Please let me know if you have any questions

**John Pentilchuk** | A GHD PRINCIPAL  
P.Eng (ON)  
Project Director

**GHD**

Proudly employee-owned | [ghd.com](http://ghd.com)

455 Phillip Street Unit #100A Waterloo Ontario N2L 3X2 Canada

D 519 340 4313 M 519 572 5644 E [john.pentilchuk@ghd.com](mailto:john.pentilchuk@ghd.com)

→ **The Power of Commitment**

Connect



Please consider the environment before printing this email

---

**From:** Mcpherson, Benjamin J (DEC) <benjamin.mcpherson@dec.ny.gov>  
**Sent:** Friday, November 19, 2021 1:04 PM  
**To:** John Pentilchuk <John.Pentilchuk@ghd.com>  
**Cc:** joseph\_branch@oxy.com; Bathory, Tim <Timothy\_Bathory@oxy.com>  
**Subject:** RE: OCC Buffalo Avenue Plant - 3rd Quarter 2021 Progress Report

John,

Circling around on this.

Tim also indicated you had some additional information on the BEW700B issues. Please provide that information as well.

Thanks,  
Ben

**Benjamin McPherson, P.E.**

(he/him/his)

Professional Engineer 1 (Environmental), Division of Environmental Remediation

**New York State Department of Environmental Conservation**

270 Michigan Avenue, Buffalo, NY 14203

P: (716) 851-7220 | F: (716) 851-7226 | [benjamin.mcpherson@dec.ny.gov](mailto:benjamin.mcpherson@dec.ny.gov)

[www.dec.ny.gov](http://www.dec.ny.gov)

---

**From:** Mcpherson, Benjamin J (DEC)

**Sent:** Tuesday, November 2, 2021 11:14 AM

**To:** John Pentilchuk <[John.Pentilchuk@ghd.com](mailto:John.Pentilchuk@ghd.com)>

**Cc:** Staniszewski, Chad (DEC) <[chad.staniszewski@dec.ny.gov](mailto:chad.staniszewski@dec.ny.gov)>; [Everett.adolph@epa.gov](mailto:Everett.adolph@epa.gov); [joseph\\_branch@oxy.com](mailto:joseph_branch@oxy.com); Bathory, Tim <[Timothy\\_Bathory@oxy.com](mailto:Timothy_Bathory@oxy.com)>

**Subject:** RE: OCC Buffalo Avenue Plant - 3rd Quarter 2021 Progress Report

John,

In Table 10, there is a footnote of (3) for WS111R, but that is not defined in the table notes. Can you clarify?

Thanks,  
Ben

**Benjamin McPherson, P.E.**

(he/him/his)

Professional Engineer 1 (Environmental), Division of Environmental Remediation

**New York State Department of Environmental Conservation**

270 Michigan Avenue, Buffalo, NY 14203

P: (716) 851-7220 | F: (716) 851-7226 | [benjamin.mcpherson@dec.ny.gov](mailto:benjamin.mcpherson@dec.ny.gov)

[www.dec.ny.gov](http://www.dec.ny.gov)

---

**From:** John Pentilchuk <[John.Pentilchuk@ghd.com](mailto:John.Pentilchuk@ghd.com)>

**Sent:** Friday, October 29, 2021 4:35 PM

**To:** Mcpherson, Benjamin J (DEC) <[benjamin.mcpherson@dec.ny.gov](mailto:benjamin.mcpherson@dec.ny.gov)>

**Cc:** Staniszewski, Chad (DEC) <[chad.staniszewski@dec.ny.gov](mailto:chad.staniszewski@dec.ny.gov)>; [Everett.adolph@epa.gov](mailto:Everett.adolph@epa.gov); [joseph\\_branch@oxy.com](mailto:joseph_branch@oxy.com); Bathory, Tim <[Timothy\\_Bathory@oxy.com](mailto:Timothy_Bathory@oxy.com)>

**Subject:** OCC Buffalo Avenue Plant - 3rd Quarter 2021 Progress Report

*ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.*

Ben:

Please find attached the 3rd Quarter Progress Report for OCC's Buffalo Avenue Plant in Niagara Falls, NY. Please let me know if you have any questions.

**John Pentilchuk | A GHD PRINCIPAL**  
**P.Eng (ON)**  
**Project Director**

**GHD**

**Proudly employee-owned | [ghd.com](http://ghd.com)**

455 Phillip Street Unit #100A Waterloo Ontario N2L 3X2 Canada

**D** 519 340 4313 **M** 519 572 5644 **E** [john.pentilchuk@ghd.com](mailto:john.pentilchuk@ghd.com)

**→ The Power of Commitment**

Connect



Please consider the environment before printing this email

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person. GHD and its affiliates reserve the right to monitor and modify all email communications through their networks.



# Glenn Springs Holdings, Inc.

A subsidiary of Occidental Petroleum

Joe Branch  
Project Manager  
Direct Dial (231) 670-6809

7601 Old Channel Trail  
Montague, MI 49437  
Fax (231) 894-4033

October 29, 2021

Reference No. 11225008

Mr. Benjamin J. McPherson  
New York State Department of Environmental Conservation  
270 Michigan Avenue  
Buffalo, NY 14203-2999

Re: Quarterly Progress Report – Third Quarter 2021  
Occidental Chemical Corporation, Buffalo Avenue Plant  
NY Permit Number 9-2911-00112/00167-0  
Module II – Corrective Action Requirements

In accordance with Module II of the Niagara Plant's Resource Conservation and Recovery Act (RCRA)/Part 373 Permit, the following is the quarterly data report for the period of July 1, 2021 to September 30, 2021. Table 1 is a summary of the monitoring tasks by quarter that are performed each year along with completion dates where applicable. Table 2 presents a summary of maintenance activities performed during the quarter.

### **Bedrock Groundwater**

The groundwater system was operational 95.7 percent of the time this quarter. The treatment system downtime was due to oxidizer preventative maintenance and repairs, air stripper blower repairs, High levels in dike sumps due to heavy rains, and communication issues. Downtime for greater than 72 hours consecutively and/or greater than 120 hours in a month did not occur.

Downtime for all extraction system wells (or most wells at once) occurred due to some of the issues associated with the treatment system. Downtime for individual extraction wells occurred due to some of the issues associated with the treatment system, sand filter repairs (BEW700B and BEW701B), as well as a leak in the south forcemain within the BEW702D chamber and repairs at BEW700B. The south forcemain leak resulted in BEW700B and BEW701B being down for greater than 120 hours in the month of July. NYSDEC was notified down on July 22, 2021. BEW700B was down for greater than 72 consecutive hours in September. NYSDEC was notified on September 21, 2021.

Performance monitoring data for the bedrock groundwater system are presented as follows:

Hydraulic Monitoring Locations .....	Figure 1
Chemical Monitoring Locations .....	Figure 2
Recovery Volumes by Zone.....	Tables 3, 4, and 5
Average Monthly Flow Rate Summary .....	Table 6
Groundwater Elevations .....	Table 7
Groundwater Contours (regional containment) by Zone .....	Figures 3, 4, and 5

### **Overburden Groundwater**

The Flow Zone 1 remedial system was operational 87.3 percent of the time for WW1 and 89.4 percent of the time for WW2 this quarter. The Flow Zone 3 remedial system (WWB of the Energy Boulevard Drain Tile System) was operational 93.5 percent of the time this quarter. Downtime occurred due to some of the issues associated with the treatment system as well as high level in MH-A, and sand filter repairs. The south forcemain leak described above resulted in WW1 and WW2 a being down for greater than 120 hours in the month of July. NYSDEC was notified down on July 22, 2021.

Occidental Chemical Corporation (OxyChem) voluntarily operates two additional overburden groundwater collection systems at the Plant. These systems include the abandoned Outfall 005 and adjacent abandoned sanitary sewer in the F- and K-Areas of the Plant (MH159L) and the abandoned D-Area sanitary sewer (MH301).

Performance monitoring data for the overburden groundwater system are presented as follows:

Hydraulic Monitoring Locations ..... Figure 6  
 Chemical Monitoring Locations ..... Figure 7  
 Weekly Flow Rates ..... Table 8  
 Average Monthly Flow Rate Summary ..... Table 9  
 Groundwater Elevations ..... Table 10  
 Groundwater Contours, Flow Zone 1 ..... Figure 8  
 Groundwater Contours, Flow Zone 3 ..... Figure 9

**Non-aqueous Phase Liquid (NAPL) Monitoring**

In accordance with the letter to the NYSDEC dated February 26, 2009, OxyChem incorporated quarterly NAPL monitoring and collection from six bedrock monitoring wells installed and monitored under the S-Area Remedial Requisite Technology Program into the Niagara Plant Corrective Action Program. Three other wells were added in accordance with the recommendations of the 2009 Annual Performance Evaluation. An additional well was added during the first quarter of 2012 in accordance with the recommendations of the 2011 Annual Performance Evaluation. These bedrock monitoring wells, designated OW229, OW243, OW618, OW619, OW620, OW621, OW634, OW635, OW638, and OW643, are located within, or immediately adjacent to, the N-Area of the Niagara Plant and contain N-Area NAPL. Quarterly NAPL checks and recovery have continued in 2021.

NAPL monitoring and collection data are presented as follows:

Bedrock NAPL Monitoring Locations ..... Figure 10  
 Overburden NAPL Monitoring Locations ..... Figure 11  
 Bedrock NAPL Monitoring and Collection ..... Table 11  
 Overburden NAPL Monitoring and Collection ..... Table 12

Should you have any questions on the above, please do not hesitate to contact Joseph Branch at 231-670-6809 or email at [joseph\\_branch@oxy.com](mailto:joseph_branch@oxy.com) or Tim Bathory at 716-278-7679 or email at [timothy\\_bathory@oxy.com](mailto:timothy_bathory@oxy.com).

Very truly yours,

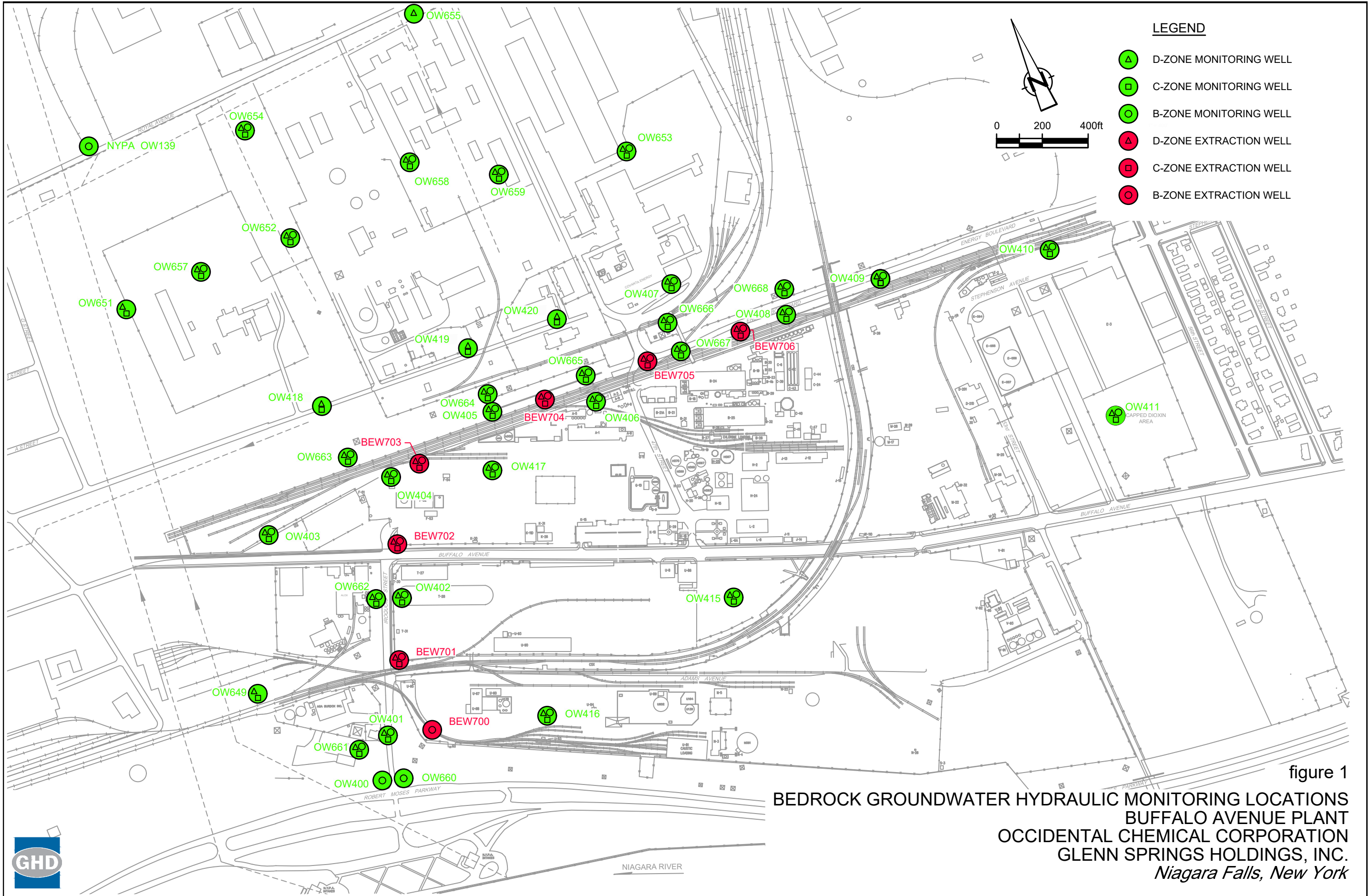
Tim Bathory  
Environmental Engineer  
Buffalo Avenue Plant

Joseph Branch  
Project Manager  
Glenn Springs Holdings, Inc.

JP/kf/1/11225008

Encl.

cc: C. Staniszewski, NYSDEC  
A. Everett, USEPA  
N. Ackerman, OCC  
J. Pentilchuk, GHD



- LEGEND**
- ▲ D-ZONE MONITORING WELL
  - ◻ C-ZONE MONITORING WELL
  - B-ZONE MONITORING WELL
  - ▲ D-ZONE EXTRACTION WELL
  - ◻ C-ZONE EXTRACTION WELL
  - B-ZONE EXTRACTION WELL

figure 1  
**BEDROCK GROUNDWATER HYDRAULIC MONITORING LOCATIONS**  
**BUFFALO AVENUE PLANT**  
**OCCIDENTAL CHEMICAL CORPORATION**  
**GLENN SPRINGS HOLDINGS, INC.**  
*Niagara Falls, New York*



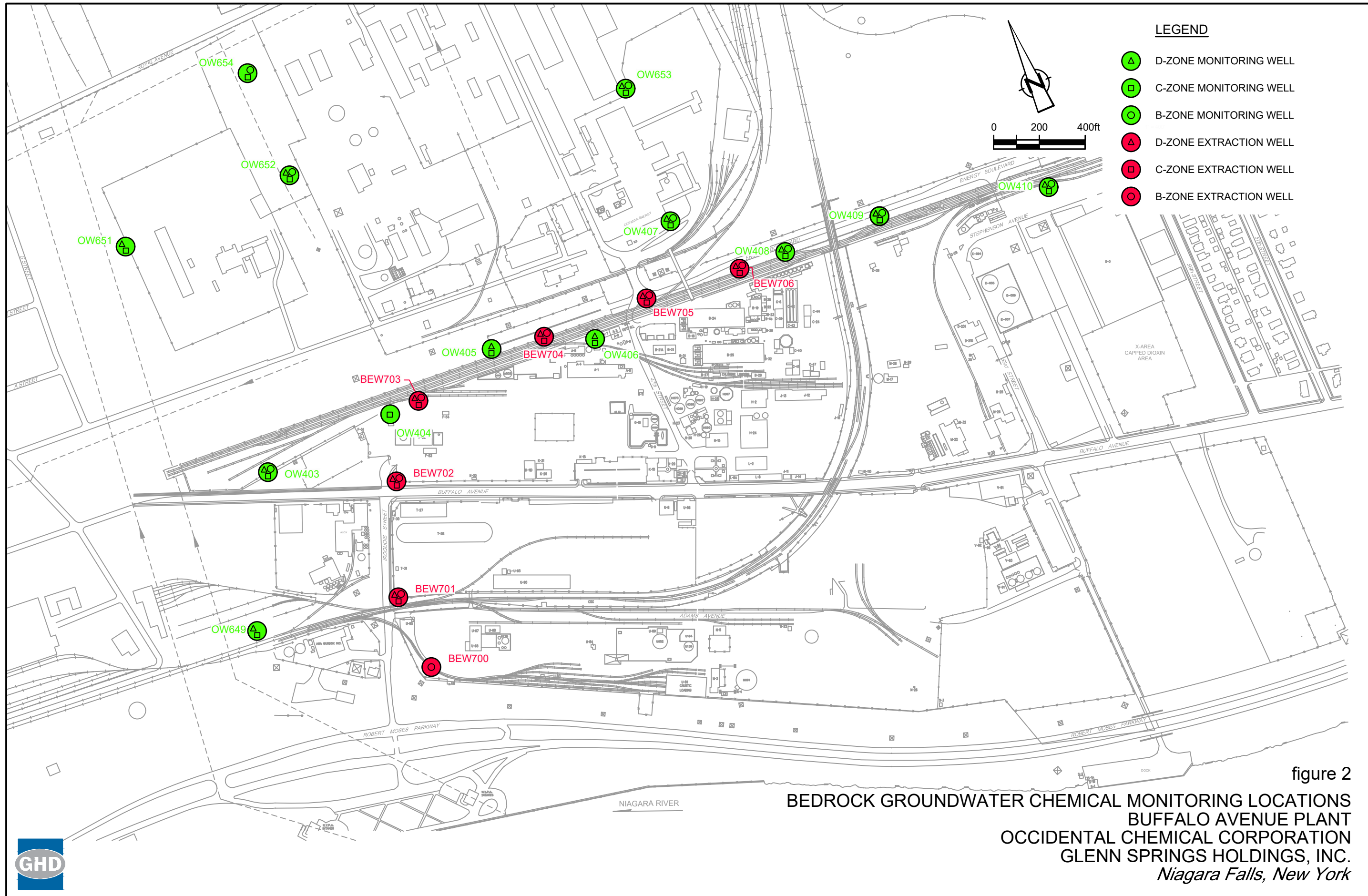
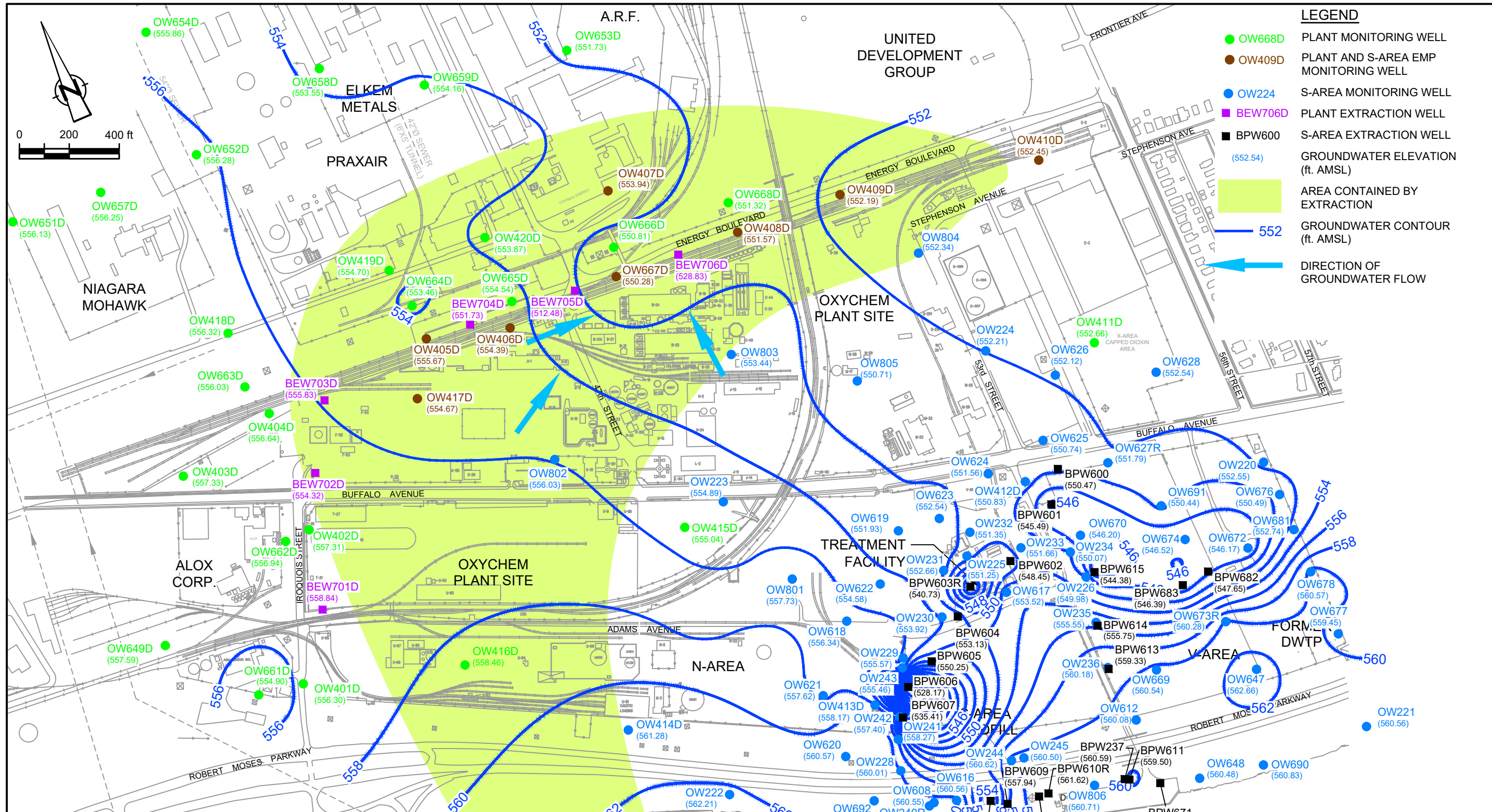


figure 2  
 BEDROCK GROUNDWATER CHEMICAL MONITORING LOCATIONS  
 BUFFALO AVENUE PLANT  
 OCCIDENTAL CHEMICAL CORPORATION  
 GLENN SPRINGS HOLDINGS, INC.  
 Niagara Falls, New York





**LEGEND**

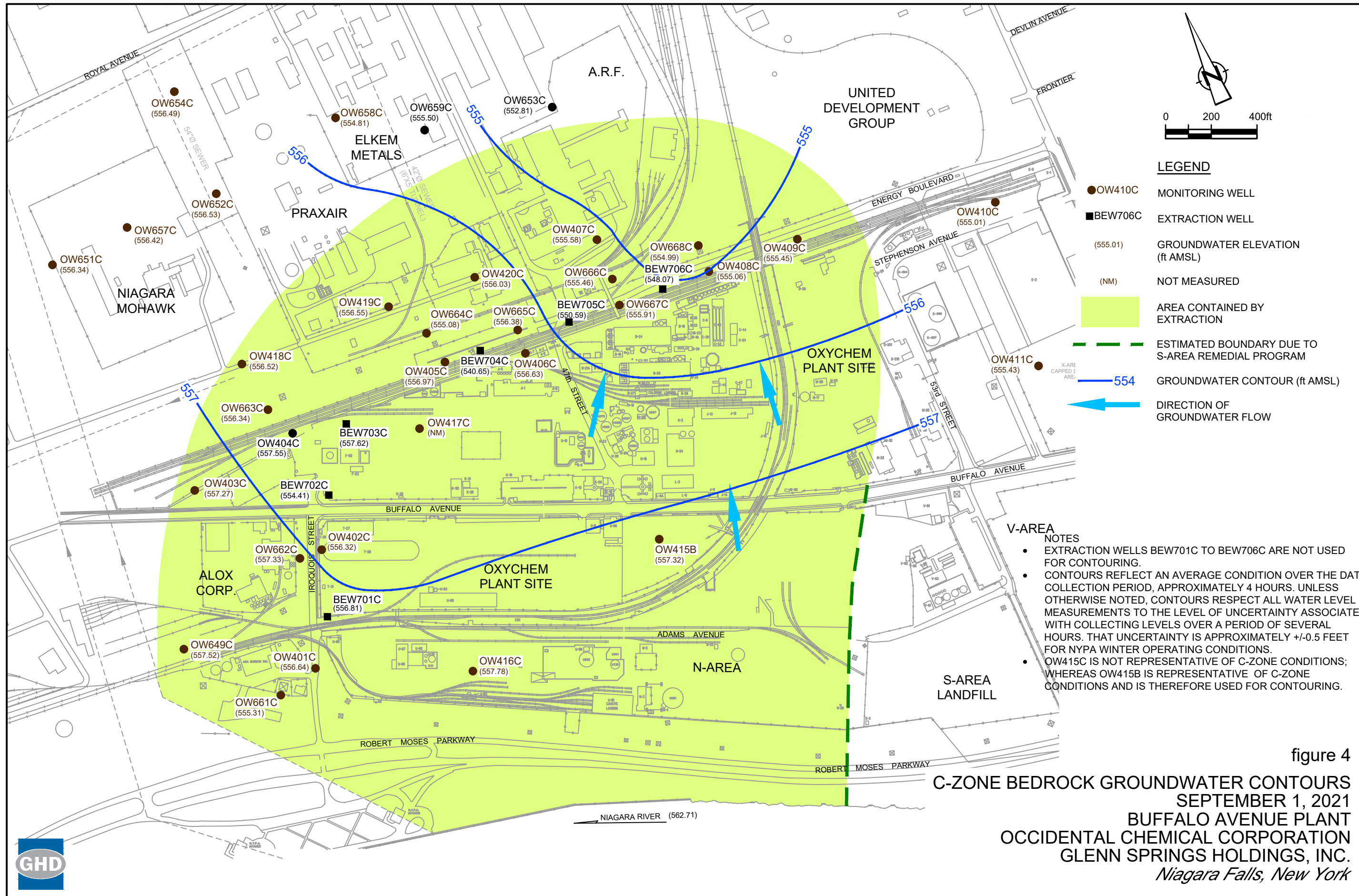
- OW668D PLANT MONITORING WELL
- OW409D PLANT AND S-AREA EMP MONITORING WELL
- OW224 S-AREA MONITORING WELL
- BEW706D PLANT EXTRACTION WELL
- BPW600 S-AREA EXTRACTION WELL
- (552.54) GROUNDWATER ELEVATION (ft. AMSL)
- AREA CONTAINED BY EXTRACTION
- 552 GROUNDWATER CONTOUR (ft. AMSL)
- DIRECTION OF GROUNDWATER FLOW

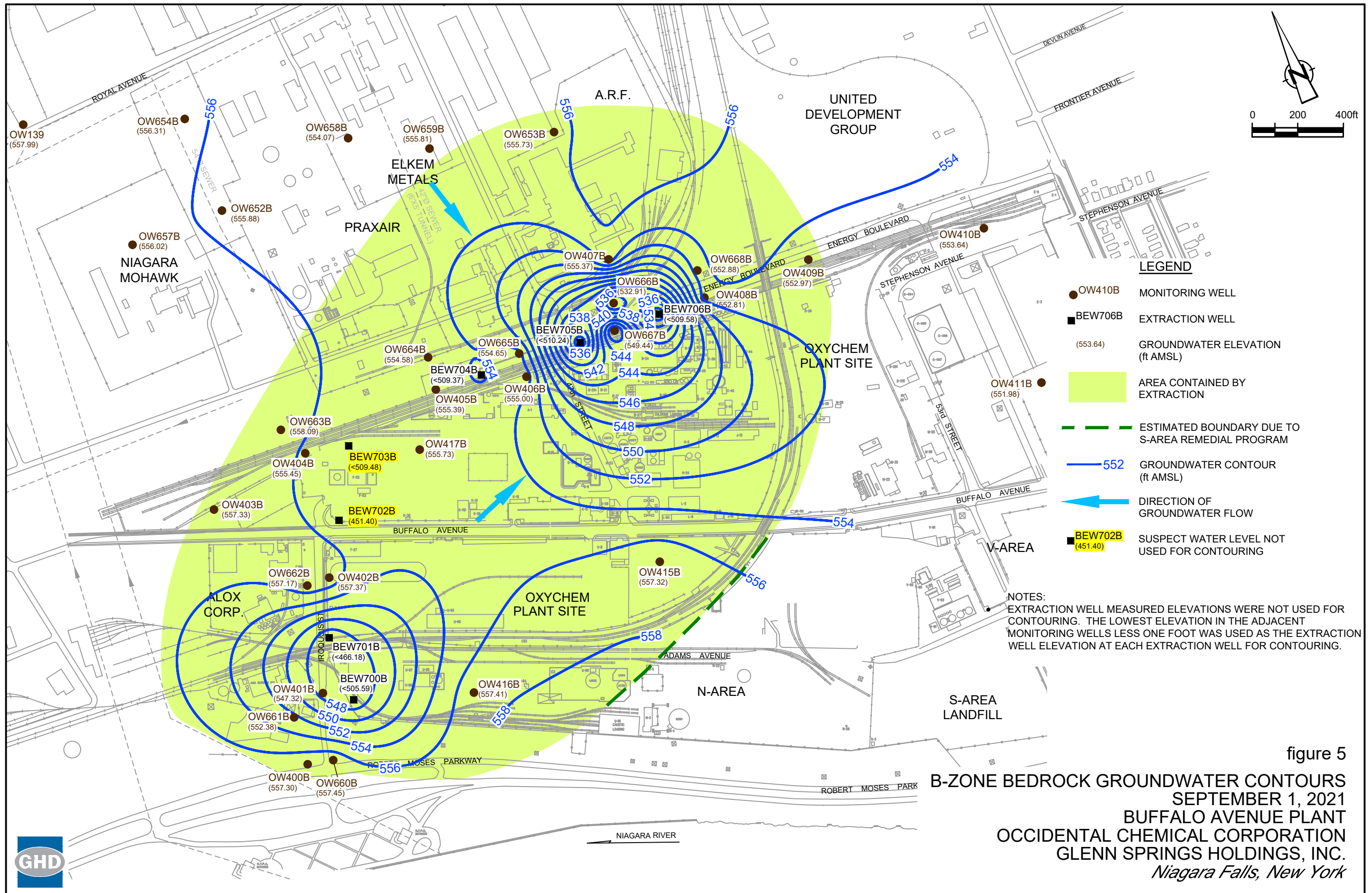
- NOTES:**
- CONTOURS REFLECT AN AVERAGE CONDITION OVER THE DATA COLLECTION PERIOD, APPROXIMATELY 4 HOURS. UNLESS OTHERWISE NOTED, CONTOURS RESPECT ALL WATER LEVEL MEASUREMENTS TO THE LEVEL OF UNCERTAINTY ASSOCIATED WITH COLLECTING LEVELS OVER A PERIOD OF SEVERAL HOURS. THAT UNCERTAINTY IS APPROXIMATELY +/-0.5 FEET FOR NYPA WINTER OPERATING CONDITIONS.
  - MEASURED ELEVATIONS FOR PLANT EXTRACTION WELLS BEW701D-BEW706D WERE NOT USED FOR CONTOURING.

figure 3  
**D-ZONE BEDROCK GROUNDWATER CONTOURS**  
 SEPTEMBER 1, 2021  
 BUFFALO AVENUE PLANT  
 OCCIDENTAL CHEMICAL CORPORATION  
 GLENN SPRINGS HOLDINGS, INC.  
*Niagara Falls, New York*









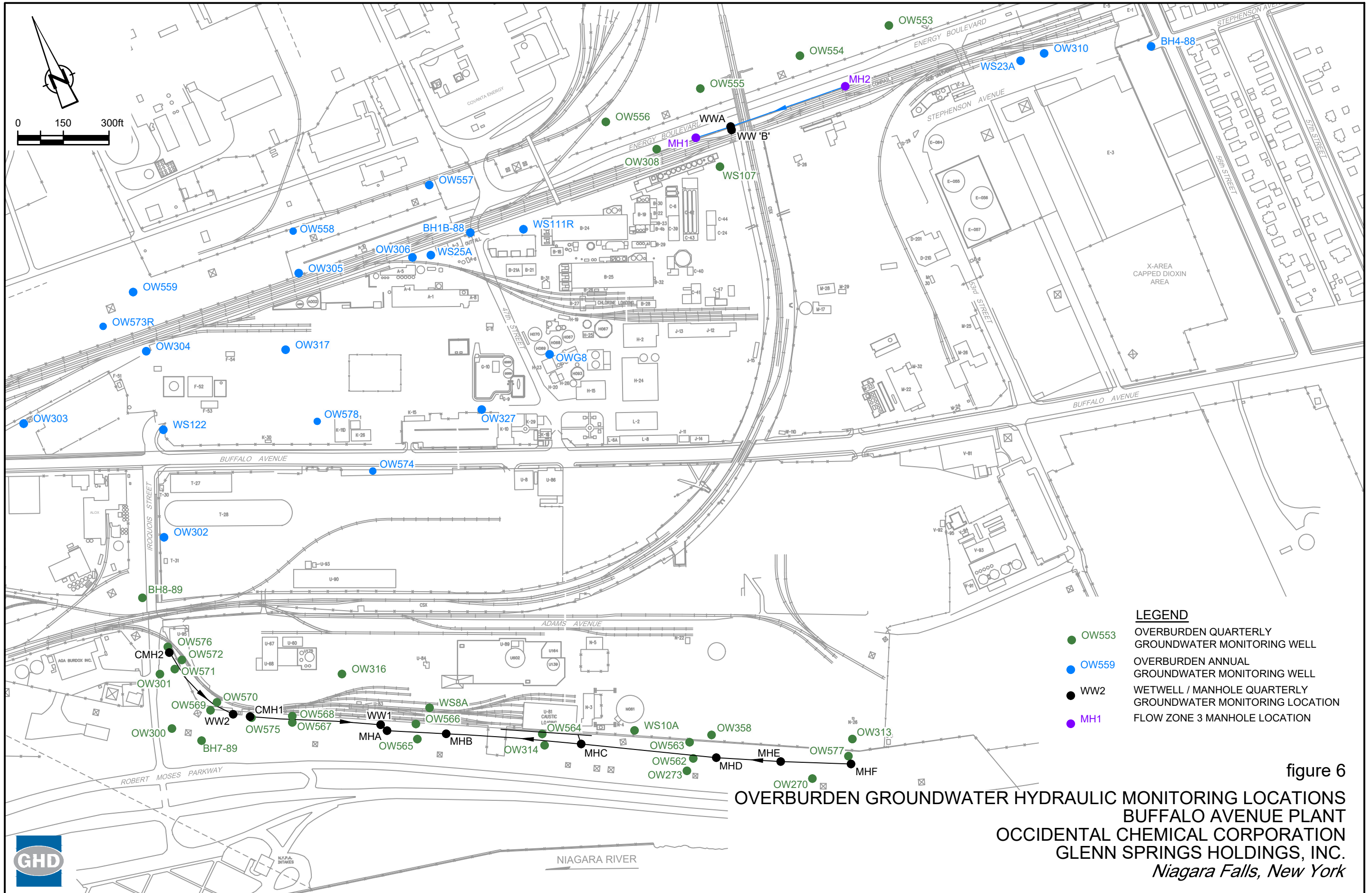
**LEGEND**

- OW410B MONITORING WELL
- BEW706B EXTRACTION WELL
- (553.64) GROUNDWATER ELEVATION (ft AMSL)
- AREA CONTAINED BY EXTRACTION
- ESTIMATED BOUNDARY DUE TO S-AREA REMEDIAL PROGRAM
- 552— GROUNDWATER CONTOUR (ft AMSL)
- ← DIRECTION OF GROUNDWATER FLOW
- BEW702B SUSPECT WATER LEVEL NOT USED FOR CONTOURING

NOTES:  
 EXTRACTION WELL MEASURED ELEVATIONS WERE NOT USED FOR CONTOURING. THE LOWEST ELEVATION IN THE ADJACENT MONITORING WELLS LESS ONE FOOT WAS USED AS THE EXTRACTION WELL ELEVATION AT EACH EXTRACTION WELL FOR CONTOURING.

figure 5  
**B-ZONE BEDROCK GROUNDWATER CONTOURS**  
 SEPTEMBER 1, 2021  
 BUFFALO AVENUE PLANT  
 OCCIDENTAL CHEMICAL CORPORATION  
 GLENN SPRINGS HOLDINGS, INC.  
*Niagara Falls, New York*





**LEGEND**

- OW553 OVERBURDEN QUARTERLY GROUNDWATER MONITORING WELL
- OW559 OVERBURDEN ANNUAL GROUNDWATER MONITORING WELL
- WW2 WETWELL / MANHOLE QUARTERLY GROUNDWATER MONITORING LOCATION
- MH1 FLOW ZONE 3 MANHOLE LOCATION

figure 6  
**OVERBURDEN GROUNDWATER HYDRAULIC MONITORING LOCATIONS**  
**BUFFALO AVENUE PLANT**  
**OCCIDENTAL CHEMICAL CORPORATION**  
**GLENN SPRINGS HOLDINGS, INC.**  
*Niagara Falls, New York*

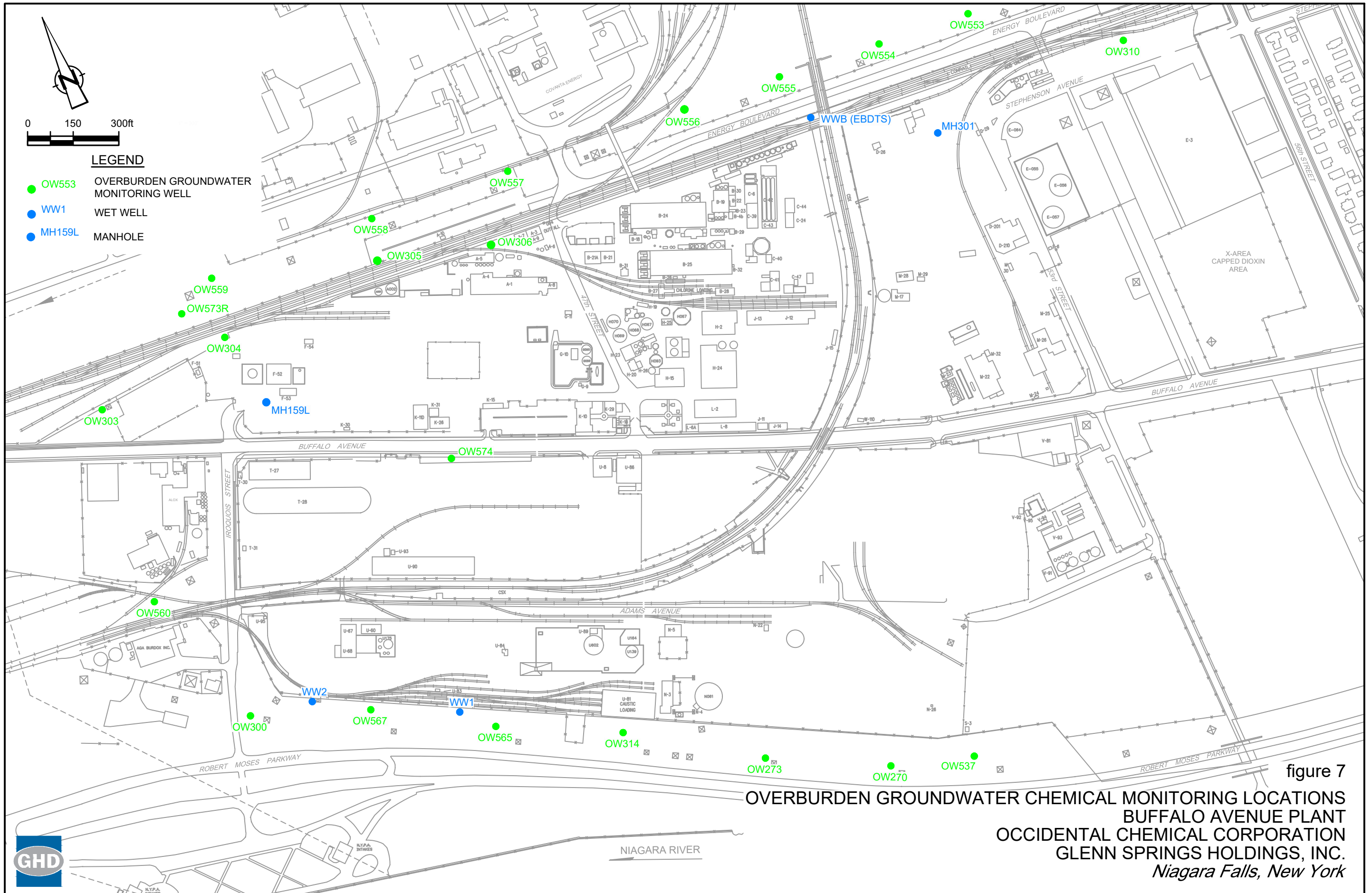
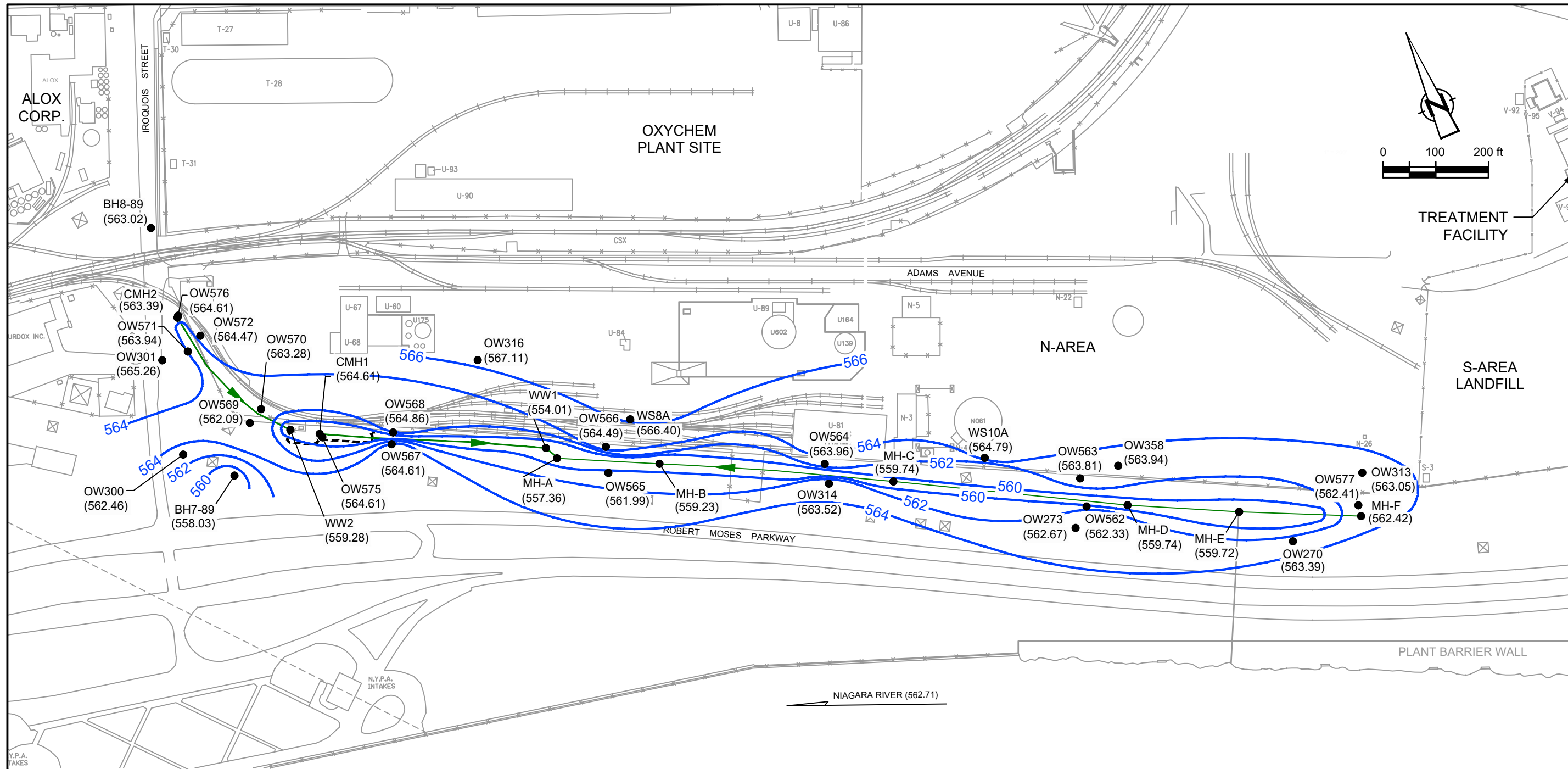


figure 7

**OVERBURDEN GROUNDWATER CHEMICAL MONITORING LOCATIONS  
BUFFALO AVENUE PLANT  
OCCIDENTAL CHEMICAL CORPORATION  
GLENN SPRINGS HOLDINGS, INC.  
Niagara Falls, New York**





**LEGEND**

- FLOW ZONE 1 COLLECTION SYSTEM
- OW316 EXISTING OVERBURDEN MONITORING WELLS
- (567.11) GROUNDWATER ELEVATION
- 564 OVERBURDEN GROUNDWATER CONTOUR (ft AMSL) DASHED WHERE INFERRED

figure 8  
**FLOW ZONE 1 OVERBURDEN GROUNDWATER CONTOURS**  
 SEPTEMBER 7, 2021  
 BUFFALO AVENUE PLANT  
 OCCIDENTAL CHEMICAL CORPORATION  
 GLENN SPRINGS HOLDINGS, INC.  
 Niagara Falls, New York



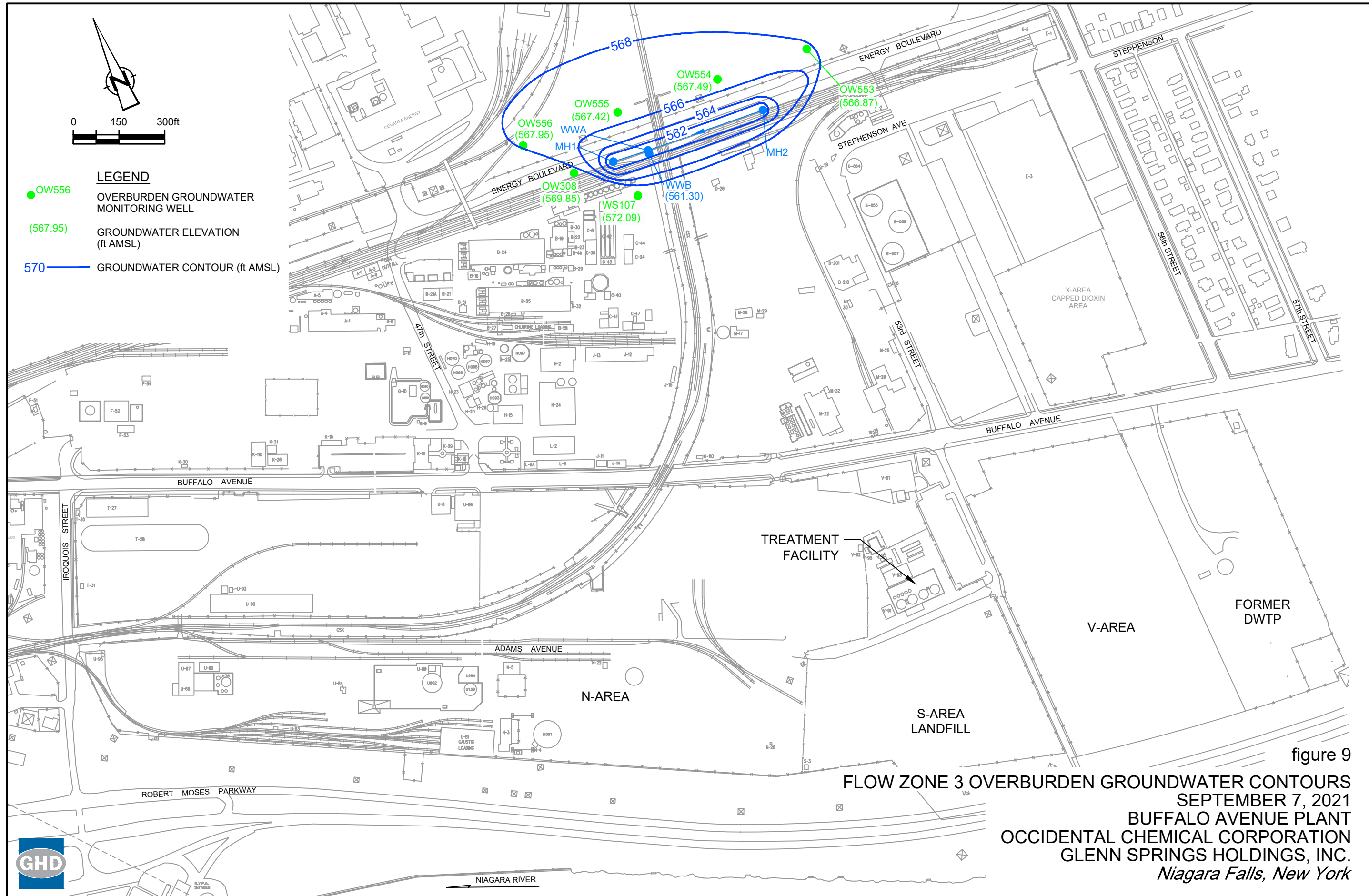
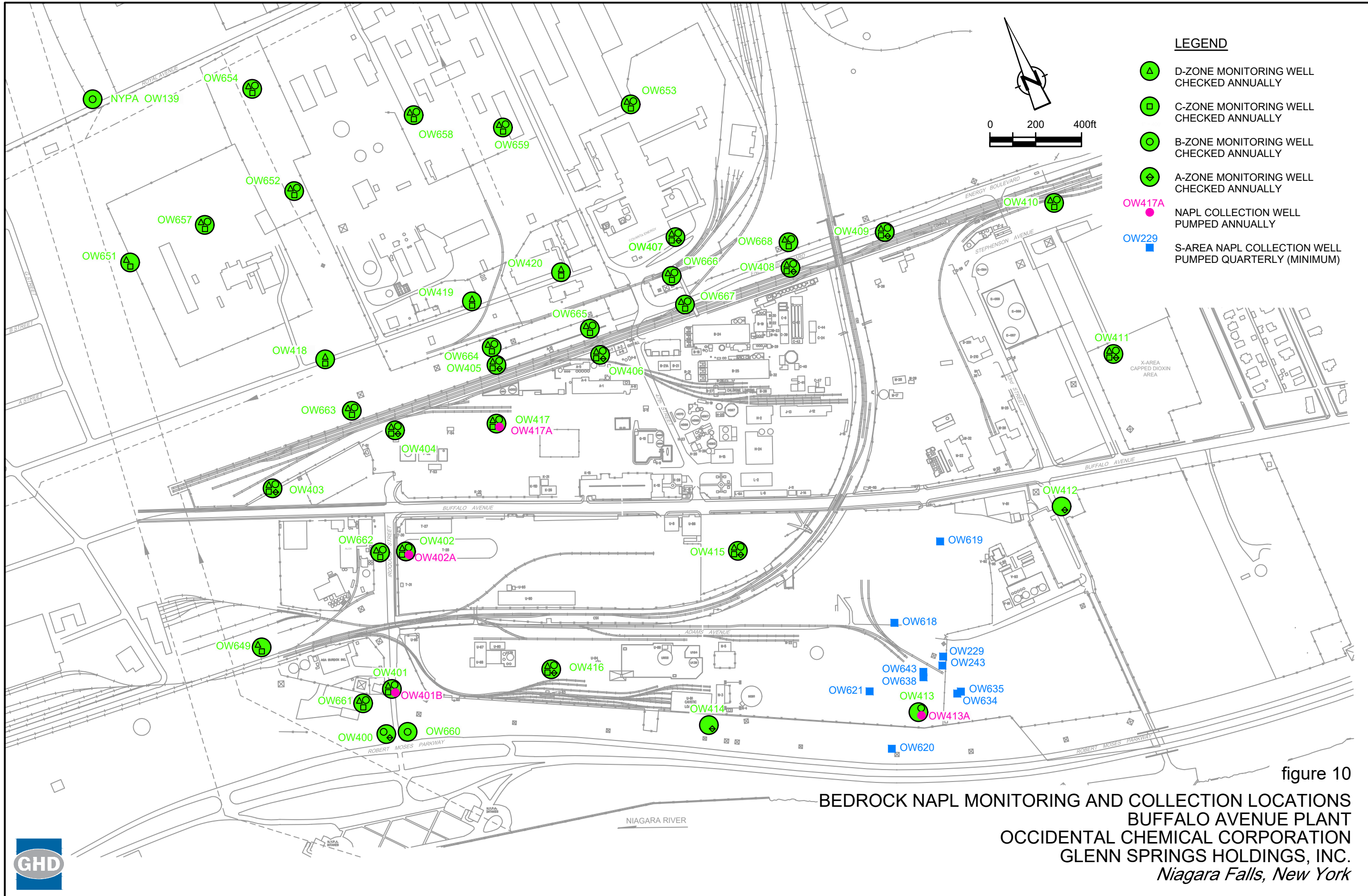


figure 9  
 FLOW ZONE 3 OVERBURDEN GROUNDWATER CONTOURS  
 SEPTEMBER 7, 2021  
 BUFFALO AVENUE PLANT  
 OCCIDENTAL CHEMICAL CORPORATION  
 GLENN SPRINGS HOLDINGS, INC.  
 Niagara Falls, New York





- LEGEND**
- ⬆ D-ZONE MONITORING WELL CHECKED ANNUALLY
  - ⬆ C-ZONE MONITORING WELL CHECKED ANNUALLY
  - ⬆ B-ZONE MONITORING WELL CHECKED ANNUALLY
  - ⬆ A-ZONE MONITORING WELL CHECKED ANNUALLY
  - OW417A NAPL COLLECTION WELL PUMPED ANNUALLY
  - OW229 S-AREA NAPL COLLECTION WELL PUMPED QUARTERLY (MINIMUM)

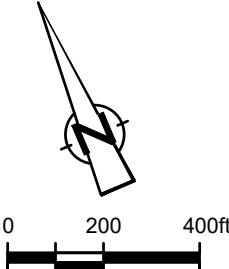


figure 10

**BEDROCK NAPL MONITORING AND COLLECTION LOCATIONS  
 BUFFALO AVENUE PLANT  
 OCCIDENTAL CHEMICAL CORPORATION  
 GLENN SPRINGS HOLDINGS, INC.  
 Niagara Falls, New York**



Table 1

**Summary of Monitoring Tasks and Associated Completion Dates  
Third Quarter 2021  
Buffalo Avenue Plant**

Quarter	Program	Task	Date(s) Task was Completed (2021)	
First	Bedrock Groundwater	Weekly Flow Measurements	1/4, 1/11, 1/18, 1/25, 2/1, 2/8, 2/15, 2/22, 3/1, 3/8, 3/15, 3/22, 3/29	
		Quarterly Hydraulic Monitoring	3/17	
		Annual Chemical Monitoring	3/5 - 4/4	
	Overburden Groundwater	Weekly Flow Measurements	1/4, 1/11, 1/18, 1/25, 2/1, 2/8, 2/15, 2/22, 3/1, 3/8, 3/15, 3/22, 3/29	
		Quarterly Hydraulic Monitoring - Flow Zones 1 and 3	3/19	
	NAPL Monitoring	Quarterly NAPL Monitoring/Collection in 003 Collection Trench	2/1	
		Quarterly NAPL Monitoring/Collection - N-Area Bedrock Wells	2/25	
		Quarterly NAPL Monitoring/Collection of EBDTS	3/19	
		Annual NAPL Monitoring/Collection of Overburden Monitoring Wells	(1)	
	Second	Bedrock Groundwater	Weekly Flow Measurements	4/5, 4/12, 4/19, 4/26, 5/3, 5/10, 5/17, 5/24, 5/31, 6/7, 6/14, 6/21, 6/28
Quarterly Hydraulic Monitoring			6/2	
Overburden Groundwater		Weekly Flow Measurements	4/5, 4/12, 4/19, 4/26, 5/3, 5/10, 5/17, 5/24, 5/31, 6/7, 6/14, 6/21, 6/28	
		Quarterly Hydraulic Monitoring - Flow Zones 1 and 3	6/4	
		Annual Chemical Monitoring - Mercury Cell Area (OW304, OW305, OW306, and OW574) Annual Chemical Monitoring - Plant Wells	5/18 - 5/24 5/11 - 5/24	
NAPL Monitoring		Quarterly NAPL Monitoring/Collection in 003 Collection Trench	4/16	
		Quarterly NAPL Monitoring/Collection - N-Area Bedrock Wells	5/13	
		Quarterly NAPL Monitoring/Collection of EBDTS	6/4	
Third		Bedrock Groundwater	Weekly Flow Measurements	7/5, 7/12, 7/19, 7/26, 8/2, 8/9, 8/16, 8/23, 8/30, 9/6, 9/13, 9/20, 9/27
			Quarterly Hydraulic Monitoring	9/1
	Overburden Groundwater	Weekly Flow Measurements	7/5, 7/12, 7/19, 7/26, 8/2, 8/9, 8/16, 8/23, 8/30, 9/6, 9/13, 9/20, 9/27	
		Quarterly Hydraulic Monitoring - Flow Zones 1 and 3	9/7	
		Annual Hydraulic Monitoring - Other Areas	9/7	
	NAPL Monitoring	Quarterly NAPL Monitoring/Collection in 003 Collection Trench	8/26	
		Quarterly NAPL Monitoring/Collection of EBDTS	9/8	
		Quarterly NAPL Monitoring/Collection - N-Area Bedrock Wells	9/3	
		Semiannual NAPL Monitoring/Collection of Overburden Monitoring Wells	8/24	
		Annual NAPL Check - OW401B, OW402A, OW413A, and OW417A Annual Sump/Manhole NAPL Checks	8/24 7/27 - 8/18	
Fourth	Bedrock Groundwater	Weekly Flow Measurements		
		Quarterly Hydraulic Monitoring		
		Annual Well Inspections		
	Overburden Groundwater	Weekly Flow Measurements		
		Quarterly Hydraulic Monitoring - Flow Zones 1 and 3		
		Semiannual Chemical Monitoring - Mercury Cell Area (OW574) Annual Well Inspections		
	NAPL Monitoring	Quarterly NAPL Monitoring/Collection in 003 Collection Trench		
		Quarterly NAPL Monitoring/Collection of EBDTS Quarterly NAPL Monitoring/Collection - N-Area Bedrock Wells		

## Notes:

(1) - To be completed in the next quarter



**Table 2**  
**Summary of Maintenance Activities**  
**Third Quarter 2021**  
**Buffalo Avenue Plant**

<b>Date</b>	<b>Location</b>	<b>Maintenance Activity</b>
7/2	F-Area	Perfromed preventative maintainence on F-53 Load center
7/6	F-Area	Troubleshoot plant air pressure
7/8	F-Area	Troubleshoot BEW-706D power issues
7/8	F-Area	Cleaned Decanter dike and Oxidizer sump level probes
7/9	F-Area	Replaced BEW-706D pump and motor
7/12	F-Area	Repaired Scrubber room water leak
7/13	F-Area	Pumped out BEW-703D vault
7/13	F-Area	Pumped out BEWs-702B,C,D vaults
7/15	F-Area	Troubleshoot and replaced WW1 pH probe
7/18	F-Area	Reaplced BEW-702D pump and motor
7/19	F-Area	Troubleshoot Leak Detect in BEW-702D & BEW-701C
7/19	F-Area	Troubleshoot Decanter dike sump level probe
7/19	F-Area	Pumped out BEWs-702B,C,D vaults
7/20	F-Area	Troubleshoot water in BEW-702D vault, leak discovered
7/20	F-Area	Installed temporary line to pump BEWs-702B,C,D to building sump
7/21	F-Area	Replaced MH-159 pump and motor
7/21	F-Area	Calibrated pH probes in WW1 & WW2
7/21-7/23	F-Area	BEW-702D piping repaired
7/22	F-Area	Troubleshoot LV-200A control issues
7/23	F-Area	Troubleshoot WW1 high level
7/30	F-Area	Calibrated Effluent, Air Stripper, & Scrubber pH probes
8/6	F-Area	Troubleshoot WW1 pH issues
8/9	F-Area	F-Area treatment system down, preparing for Anguil PM
8/10-8/12	F-Area	Performed Oxidizer and Scrubber PM and replaced thermocouple and pop-it exhaust valve
8/10	F-Area	Air Stripper inspection
8/11	F-Area	Replaced belts on Air Stripper Blower Motor
8/11	F-Area	Troubleshoot Sandfilter valve leak
8/13	F-Area	Troubleshoot MH-A high level
8/16	F-Area	Troubleshoot Scrubber pH issues

Table 2

**Summary of Maintenance Activities  
Third Quarter 2021  
Buffalo Avenue Plant**

<b>Date</b>	<b>Location</b>	<b>Maintenance Activity</b>
8/18	F-Area	Calibrated WW1 & WW2 pH probes
8/18	F-Area	Troubleshoot Scrubber pH issues and Scrubber blow down valve SV-84
8/18	F-Area	Cleaned pipe between MH-A to WW1
8/20	F-Area	Troubleshoot WW1 pH issues
8/20	F-Area	Repaired BEW-706D vault ladder handle
8/24	F-Area	Replaced CO2 tank level gauge
8/24	F-Area	Troubleshoot Air Stripper Blower Motor mounts
8/25	F-Area	Calibrated Effluent, Air Stripper, & Scrubber pH probes
8/31	F-Area	Replaced Sandfilter valve B-1
9/3	F-Area	Replaced F-53 load center emergency and ceiling lights
9/9	F-Area	Troubleshoot Scrubber pH issues
9/10	F-Area	Replaced Scrubber pH probe
9/14	F-Area	Calibrated WW1 & WW2 pH probes
9/14	F-Area	Calibrated Effluent, Air Stripper, & Scrubber pH probes
9/14	F-Area	Pumped out BEW-703D vault
9/14	F-Area	Troubleshoot Air Stripper Blower Motor
9/16	F-Area	Troubleshoot Scrubber pH issues
9/16	F-Area	Troubleshoot WW1 high level
9/19	F-Area	Troubleshoot BEW-700B pump issues
9/20-9/22	F-Area	Replaces BEW-700B pump and motor
9/20	F-Area	Repaired Air Stripper Blower Motor
9/23	F-Area	Repaired Sandfilter leak

Table 3

D-Zone Extraction Well Flow Rates  
Third Quarter 2021  
Buffalo Avenue Plant

Date	BEW701D		BEW702D		BEW703D		BEW704D		BEW705D		BEW706D	
	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)
7/5/2021							421000	41.77	255000	25.30	304000	30.16
7/12/2021							408000	41.98	259000	26.65	124000	12.92
7/19/2021							410000	42.18	255000	26.23	298000	30.66
7/26/2021							415000	41.92	256000	25.86	318000	32.12
8/2/2021							422000	41.87	263000	26.09	317000	31.45
8/9/2021							421000	41.77	262000	25.99	312000	30.95
8/16/2021							244000	42.36	151000	26.22	183000	31.77
8/23/2021							428000	42.46	264000	26.19	317000	31.45
8/30/2021							431000	42.76	267000	26.49	312000	30.95
9/6/2021							427000	42.36	266000	26.39	315000	31.25
9/13/2021							484000	42.01	309000	26.82	365000	31.68
9/20/2021							361000	41.78	228000	26.39	266000	30.79
9/27/2021							418000	41.47	271000	26.88	307000	30.46

Notes:

GPM - gallons per minute  
BEW701D, 702D, and 703D were shut down on October 9, 2008 following NYSDEC approval.  
Target rates for BEW704D, 705D, and 706D are 40 GPM each.

**Table 4**  
**C-Zone Extraction Well Flow Rates**  
**Third Quarter 2021**  
**Buffalo Avenue Plant**

Date	BEW701C		BEW702C		BEW703C		BEW704C		BEW705C		BEW706C	
	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)
7/5/2021							1073000	106.45	1043000	103.47	1026000	101.79
7/12/2021							1029000	106.52	999000	103.42	1027000	106.31
7/19/2021							1034000	106.38	999000	102.78	1003000	103.19
7/26/2021							1056000	106.67	1017000	102.73	1032000	104.24
8/2/2021							1078000	106.94	1042000	103.37	1049000	104.07
8/9/2021							1080000	107.14	1046000	103.77	1047000	103.87
8/16/2021							622000	107.99	606000	105.21	608000	105.56
8/23/2021							1083000	107.44	1072000	106.35	1057000	104.86
8/30/2021							1064000	107.47	1062000	107.93	1036000	104.65
9/6/2021							1082000	107.34	1083000	107.44	1049000	104.07
9/13/2021							1236000	107.85	1232000	106.94	1178000	102.26
9/20/2021							926000	107.18	923000	106.83	888000	102.78
9/27/2021							1049000	107.26	1045000	106.85	1005000	102.76

Notes:

GPM - gallons per minute.

BEW701C, 702C, and 703C were shut down on May 22, 2007 following NYSDEC approval.

Target rates for BEW704C, 705C, and 706C are 100 GPM each.

(1) The totalizer for BEW706C malfunctioned the week of January 27, 2020. The average flow of the weeks before and after was used.

**Table 5**  
**B-Zone Extraction Well Flow Rates**  
**Third Quarter 2021**  
**Buffalo Avenue Plant**

Date	BEW700B		BEW701B		BEW702B		BEW703B		BEW704B		BEW705B		BEW706B	
	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)
7/5/2021	28000	2.78	11000	1.09	37	0.004	20	0.002	93000	9.23	33000	3.27	35000	3.47
7/12/2021	25000	2.57	9000	0.93	36	0.004	88	0.009	91000	9.36	34000	3.48	33000	3.40
7/19/2021	19000	2.51	6000	0.79	15815	1.569	7500	0.744	92000	9.47	34000	3.46	27000	2.78
7/26/2021	11000	2.35	7000	1.50	135	0.013	48	0.005	93000	9.39	34000	3.43	28000	2.83
8/2/2021	27000	2.68	18000	1.79	150	0.015	40	0.004	95000	9.42	34000	3.39	31000	3.08
8/9/2021	27000	2.68	19000	1.88	144	0.014	54	0.005	96000	9.52	35000	3.47	31000	3.08
8/16/2021	16000	2.78	14000	2.43	59	0.006	35	0.003	55000	9.55	20000	3.44	19000	3.30
8/23/2021	26000	2.58	21000	2.08	22	0.002	38	0.004	97000	9.62	36000	3.59	36000	3.57
8/30/2021	28000	2.78	22000	2.18	25	0.002	31	0.003	97000	9.62	35000	3.47	37000	3.67
9/6/2021	26000	2.59	20000	2.00	19	0.002	40	0.004	97000	9.62	36000	3.57	38000	3.77
9/13/2021	29000	2.52	22000	1.91	18	0.002	40	0.004	111000	9.64	41000	3.56	43000	3.73
9/20/2021	20000	2.11	17000	1.97	26	0.003	45	0.004	83000	9.61	31000	3.59	33000	3.82
9/27/2021	21000	3.18	18000	1.80	16	0.002	42	0.004	97000	9.62	37000	3.67	39000	3.87

Notes:

GPM - gallons per minute.

(1) Totalizer malfunction occurred for BEW706B. The average flow of the weeks before and after was used.

Table 6

**Bedrock Extraction System Monthly Flow Rate Summary  
Third Quarter 2021  
Buffalo Avenue Plant**

<u>System Component</u>	Target Flow Rates (gpm)	Month			Quarterly Average (gpm)
		Jul-21 (gpm)	Aug-21 (gpm)	Sep-21 (gpm)	
B-Zone	40	20	21	19	20
C-Zone	300	313	317	317	316
D-Zone	120	94	100	100	98
Operational Average	460	428	438	436	434
<b><u>Treatment Plant</u></b>					
Operational Average		480	471	486	479
Operating Time		99.1%	89.9%	98.1%	95.7%
<b>Quarterly Average Operating Time =</b>		95.7%			
<b>Total Volume Treated in Quarter =</b>		60,721,920	<b>gallons</b>		

## Notes:

GPM - gallons per minute.

Flow rates shown are the average flow rate while the pump/treatment system is operational.

Table 7

**Bedrock Groundwater Elevation Summary**  
**Third Quarter 2021**  
**Buffalo Avenue Plant**

Well	Top of Riser Elevation	Ground Surface Elevation	Date of Installation	Riser Diameter (inches)	Monitored Interval				Well Bottom		Water Level Data	
					Top (AMSL)	Bottom (AMSL)	Top (BGS)	Bottom (BGS)	Elev. of (AMSL)	Depth to (BGS)	9/1/2021 (ft BTOC) (ft AMSL)	
BEW700B	565.59	568.69	12/2/1994	8	457.1	- 414.0	111.6	- 154.7	414.0	154.7	>60.00	<505.59
BEW701B	566.18	569.15	12/9/1994	8	458.8	- 413.8	110.4	- 155.4	413.8	155.4	>100.00	<466.18
BEW701C	566.33	569.60	11/17/1994	8	498.4	- 460.9	71.2	- 108.7	460.9	108.7	9.52	556.81
BEW701D	565.86	569.03	12/7/1994	8	545.9	- 500.9	23.1	- 68.1	500.9	68.1	7.02	558.84
BEW702B	568.83	572.24	8/15/1994	8	452.9	- 415.9	119.3	- 156.3	415.9	156.3	117.23	451.60
BEW702C	568.86	571.95	8/8/1994	8	496.4	- 455.9	75.6	- 116.1	455.9	116.1	14.45	554.41
BEW702D	569.20	572.17	7/6/1994	8	548.6	- 499.4	23.6	- 72.8	499.4	72.8	14.88	554.32
BEW703B	569.48	572.57	9/8/1994	8	450.8	- 410.8	121.8	- 161.8	410.8	161.8	97.48	472.00
BEW703C	569.00	572.10	9/15/1994	8	501.8	- 453.7	70.3	- 118.4	453.7	118.4	11.38	557.62
BEW703D	569.87	572.77	9/16/1994	8	550.0	- 504.2	22.8	- 68.6	504.2	68.6	14.04	555.83
BEW704B	569.37	573.41	10/14/1994	8	452.3	- 417.3	121.1	- 156.1	417.3	156.1	>60.00	<509.37
BEW704C	569.24	573.31	10/14/1994	8	498.3	- 454.3	75.0	- 119.0	454.3	119.0	28.59	540.65
BEW704D	570.24	573.10	9/30/1994	8	546.3	- 501.3	26.8	- 71.8	501.3	71.8	18.51	551.73
BEW705B	570.24	573.26	10/11/1994	8	453.7	- 416.0	119.6	- 157.3	416.0	157.3	>60.00	<510.24
BEW705C	570.06	573.15	9/30/1994	8	502.0	- 456.5	71.2	- 116.7	456.5	116.7	19.47	550.59
BEW705D	570.66	573.65	10/10/1994	8	550.2	- 505.2	23.4	- 68.4	505.2	68.4	58.18	512.48
BEW706B	569.58	572.69	9/19/1994	8	452.9	- 416.4	119.8	- 156.3	416.4	156.3	>60.00	<509.58
BEW706C	568.97	571.9	10/11/1994	8	504.1	- 455.6	67.8	- 116.3	455.6	116.3	20.90	548.07
BEW706D	569.46	572.49	9/26/1994	8	550.7	- 504.2	21.8	- 68.3	504.2	68.3	40.63	528.83
OW139	570.63	569.08	1958	12	559.2	435.2	9.9	- 133.9	435.2	133.9	12.64	557.99
OW400B	579.25	579.61	5/10/1989	4	454.6	- 424.5	125.0	- 155.1	424.5	155.1	21.95	557.30
OW401B	568.54	568.95	5/24/1989	4	462.9	- 413.9	106.1	- 155.1	413.9	155.1	21.22	547.32
OW401C	568.55	568.94	5/25/1989	4	492.3	- 462.8	76.6	- 106.1	462.8	106.1	11.91	556.64
OW401D	568.42	568.87	5/26/1989	6.25	545.9	- 507.9	23.0	- 61.0	507.9	61.0	12.12	556.30
OW402B	569.46	570.33	6/28/1989	4	473.8	- 409.9	96.5	- 160.4	409.9	160.4	12.09	557.37
OW402C	569.48	570.3	6/26/1989	4	488.5	- 473.8	81.8	- 96.5	473.8	96.5	13.16	556.32
OW402D	569.22	570.01	6/29/1989	6.25	544.7	- 518.8	25.3	- 51.2	518.8	51.2	11.91	557.31
OW403B	570.04	570.48	5/16/1989	4	457.8	- 427.8	112.7	- 142.7	427.8	142.7	12.71	557.33
OW403C	570.02	570.26	5/22/1989	4	487.3	- 457.7	83.0	- 112.6	457.7	112.6	12.75	557.27
OW403D	570.08	570.31	5/23/1989	6.25	546.8	- 502.8	23.5	- 67.5	502.8	67.5	12.75	557.33
OW404B	571.03	571.53	6/9/1989	4	438.3	- 404.8	133.2	- 166.7	404.8	166.7	15.58	555.45
OW404C	570.82	571.38	6/7/1989	4	498.5	- 468.2	72.9	- 103.2	468.2	103.2	13.27	557.55

Table 7

**Bedrock Groundwater Elevation Summary  
Third Quarter 2021  
Buffalo Avenue Plant**

Well	Top of Riser Elevation	Ground Surface Elevation	Date of Installation	Riser Diameter (inches)	Monitored Interval				Well Bottom		Water Level Data			
					Top (AMSL)	Bottom (AMSL)	Top (BGS)	Bottom (BGS)	Elev. of (AMSL)	Depth to (BGS)	9/1/2021 (ft BTOC) (ft AMSL)			
OW404D	570.45	571.85	6/23/1989	6.25	549.3	-	498.0	22.6	-	73.9	498.0	73.9	13.81	556.64
OW405B	572.78	573.14	3/27/1989	4	453.3	-	408.3	119.8	-	164.8	408.3	164.8	17.39	555.39
OW405C	572.7	573.07	5/31/1989	4	501.2	-	453.2	71.9	-	119.9	453.2	119.9	15.73	556.97
OW405D	572.6	573.11	6/9/1989	6.25	545.6	-	501.2	27.5	-	71.9	501.2	71.9	16.93	555.67
OW406B	571.52	571.77	6/8/1989	4	467.9	-	404.4	103.9	-	167.4	404.4	167.4	16.52	555.00
OW406C	571.44	571.73	6/14/1989	4	497.6	-	467.8	74.1	-	103.9	467.8	103.9	14.81	556.63
OW406D	571.81	572.1	6/16/1989	6.25	548.6	-	497.2	23.5	-	74.9	497.2	74.9	17.42	554.39
OW407B	572.05	572.46	5/2/1989	4	465.4	-	450.4	107.1	-	122.1	450.4	122.1	16.68	555.37
OW407C	571.27	572.12	5/1/1989	4	479.8	-	465.2	92.3	-	106.9	465.2	106.9	15.69	555.58
OW407D	571.32	571.72	5/4/1989	6.25	552.9	-	510.4	18.8	-	61.3	510.4	61.3	17.38	553.94
OW408B	575.04	571.98	7/20/1989	4	445.2	-	403.6	126.8	-	168.4	403.6	168.4	22.23	552.81
OW408C	575.68	572.71	7/11/1989	4	494.5	-	445.9	78.2	-	126.8	445.9	126.8	20.62	555.06
OW408D	576.2	573.12	7/6/1989	6.25	552.1	-	525.0	21.0	-	48.1	525.0	48.1	24.63	551.57
OW409B	575.7	572.79	6/20/1989	3	461.8	-	415.9	111.0	-	156.9	415.9	156.9	22.73	552.97
OW409C	575.57	572.95	6/26/1989	4	510.1	-	462.0	62.9	-	111.0	462.0	111.0	20.12	555.45
OW409D	575.46	575.76	6/28/1989	6.25	552.0	-	509.8	23.8	-	66.0	509.8	66.0	23.27	552.19
OW410B	572.32	572.62	6/26/1989	4	441.4	-	407.7	131.2	-	164.9	407.7	164.9	18.68	553.64
OW410C	572.57	572.72	7/17/1989	4	486.5	-	471.5	86.2	-	101.2	471.5	101.2	17.56	555.01
OW410D	571.96	572.64	6/27/1989	6.25	547.1	-	516.3	25.5	-	56.3	516.3	56.3	19.51	552.45
OW411B	574.08	574.82	4/4/1989	4	454.9	-	406.6	119.9	-	168.2	406.6	168.2	22.10	551.98
OW411C	574.39	574.78	4/11/1989	4	500.0	-	470.0	74.8	-	104.8	470.0	104.8	18.96	555.43
OW411D	574.51	574.84	4/14/1989	6.25	546.7	-	515.2	28.1	-	59.6	515.2	59.6	21.85	552.66
OW415B	571.38	571.73	5/31/1989	4	482.1	-	467.1	89.6	-	104.6	467.1	104.6	14.06	557.32
OW415C	571.26	571.56	5/30/1989	4	511.9	-	497.1	59.7	-	74.5	497.1	74.5	15.23	556.03
OW415D	571.3	571.6	5/31/1989	6.25	548.7	-	511.8	22.9	-	59.8	511.8	59.8	16.26	555.04
OW416B	570	570.69	5/22/1989	6.25	470.8	-	455.8	99.9	-	114.9	455.8	114.9	12.59	557.41
OW416C	569.9	570.57	~5/22/1989	6.25	500.7	-	470.7	69.9	-	99.9	470.7	99.9	12.12	557.78
OW416D	569.68	570.32	~5/22/1989	6.25	539.6	-	500.5	30.7	-	69.8	500.5	69.8	11.22	558.46
OW417B	572.93	572.7	~5/19/1989	6.25	461.1	-	412.6	111.6	-	160.1	412.6	160.1	17.20	555.73
OW417C	572.23	572.9	~5/19/1989	6.25	490.1	-	460.8	82.8	-	112.1	460.8	112.1	(1)	(1)
OW417D	572.26	572.5	~5/19/1989	6.25	545.5	-	505.9	27.0	-	66.6	505.9	66.6	17.59	554.67
OW418C	569.62	570.08	5/29/2003	4	501.0	-	458.7	69.1	-	111.4	458.7	111.4	13.10	556.52



Table 7

**Bedrock Groundwater Elevation Summary  
Third Quarter 2021  
Buffalo Avenue Plant**

Well	Top of Riser Elevation	Ground Surface Elevation	Date of Installation	Riser Diameter (inches)	Monitored Interval				Well Bottom		Water Level Data	
					Top (AMSL)	Bottom (AMSL)	Top (BGS)	Bottom (BGS)	Elev. of (AMSL)	Depth to (BGS)	9/1/2021 (ft BTOC) (ft AMSL)	
OW418D	569.72	570.14	1/11/2002	6	547.0	- 504.3	23.1	- 65.8	504.3	65.8	13.40	556.32
OW419C	570.4	570.7	6/4/2003	4	502.7	- 455.7	68.0	- 115.0	455.7	115.0	13.85	556.55
OW419D	570.22	570.75	1/10/2002	6	550.3	- 505.6	20.5	- 65.2	505.6	65.2	15.52	554.70
OW420C	571.03	571.28	6/2/2003	4	500.3	- 452.5	71.0	- 118.8	452.5	118.8	15.00	556.03
OW420D	570.67	571.24	1/4/2002	6	548.7	- 503.1	22.5	- 68.1	503.1	68.1	16.80	553.87
OW649C	567.52	568.04	~10/31/1991	4	488.5	- 458.1	79.6	- 110.0	458.1	110.0	10.00	557.52
OW649D	568.29	568.35	10/31/1991	4	549.2	- 510.4	19.1	- 57.9	510.4	57.9	10.70	557.59
OW651C	568.62	568.91	10/10/1991	4	507.9	- 477.6	61.1	- 91.3	477.6	91.3	12.28	556.34
OW651D	568.53	568.72	~9/16/1991	6	553.2	- 507.7	15.5	- 61.0	507.7	61.0	12.40	556.13
OW652B	570.48	570.83	~9/16/1991	4	473.8	- 443.8	97.1	- 127.1	443.8	127.1	14.60	555.88
OW652C	570.18	570.64	2/5/1993	4	509.4	- 477.4	61.3	- 93.3	477.4	93.3	13.65	556.53
OW652D	569.98	570.25	9/16/1991	4	552.7	- 509.7	17.6	- 60.6	509.7	60.6	13.70	556.28
OW653B	572.19	572.55	~2/12/1993	4	475.4	- 451.4	97.2	- 121.2	451.4	121.2	16.46	555.73
OW653C	572.12	572.49	2/12/1993	4	503.1	- 478.1	69.4	- 94.4	478.1	94.4	19.31	552.81
OW653D	572	572.38	9/10/1991	6	552.1	- 503.7	20.3	- 68.7	503.7	68.7	20.27	551.73
OW654B	569.53	569.91	~8/27/1991	4	478.8	- 444.3	91.1	- 125.6	444.3	125.6	13.22	556.31
OW654C	570.14	570.39	~8/27/1991	4	509.7	- 481.8	60.7	- 88.6	481.8	88.6	13.30	556.49
OW654D	570.16	570.41	8/27/1991	6	556.0	- 510.7	14.4	- 59.7	510.7	59.7	14.30	555.86
OW655D	571.23	571.46	8/22/1991	6	552.7	- 507.4	18.8	- 64.1	507.4	64.1	18.93	552.30
OW657B	570.22	570.59	~4/9/1993	4	472.9	- 439.5	97.7	- 131.1	439.5	131.1	14.20	556.02
OW657C	570.42	570.83	~4/9/1993	4	503.7	- 475.7	67.2	- 95.2	475.7	95.2	14.00	556.42
OW657D	571.65	570.21	~4/9/1993	4	553.6	- 507.6	16.6	- 62.6	507.6	62.6	15.40	556.25
OW658B	570.48	570.93	~4/6/1993	4	473.4	- 439.9	97.6	- 131.1	439.9	131.1	16.41	554.07
OW658C	570.66	570.94	~4/6/1993	4	502.9	- 475.8	68.0	- 95.1	475.8	95.1	15.85	554.81
OW658D	570.75	571.1	~4/6/1993	4	552.6	- 506.1	18.6	- 65.1	506.1	65.1	17.20	553.55
OW659B	570.02	570.49	~3/30/1993	4	474.0	- 440.4	96.5	- 130.1	440.4	130.1	14.21	555.81
OW659C	570	570.41	~3/30/1993	4	503.9	- 475.8	66.5	- 94.6	475.8	94.6	14.50	555.50
OW659D	570.01	570.29	~3/30/1993	4	549.7	- 505.8	20.6	- 64.5	505.8	64.5	15.85	554.16
OW660B	579.42	579.85	10/19/1994	4	454.8	- 409.5	125.0	- 170.3	409.5	170.3	21.97	557.45
OW661B	568.63	569.05	12/15/1994	4	451.0	- 419.0	118.1	- 150.1	419.0	150.1	16.25	552.38
OW661C	568.87	569.22	10/24/1994	4	502.2	- 454.2	67.0	- 115.0	454.2	115.0	13.56	555.31
OW661D	568.88	569.25	11/1/1994	4	546.9	- 505.1	22.3	- 64.1	505.1	64.1	13.98	554.90

Table 7

**Bedrock Groundwater Elevation Summary  
Third Quarter 2021  
Buffalo Avenue Plant**

Well	Top of Riser Elevation	Ground Surface Elevation	Date of Installation	Riser Diameter (inches)	Monitored Interval				Well Bottom		Water Level Data 9/1/2021			
					Top (AMSL)	Bottom (AMSL)	Top (BGS)	Bottom (BGS)	Elev. of (AMSL)	Depth to (BGS)	(ft BTOC)	(ft AMSL)		
OW662B	569.79	570.08	7/6/1994	4	456.1	-	415.1	114.0	-	155.0	415.1	155.0	12.62	557.17
OW662C	569.75	570.02	7/5/1994	4	501.0	-	459.0	69.0	-	111.0	459.0	111.0	12.42	557.33
OW662D	569.92	570.24	7/1/1994	4	546.1	-	503.2	24.1	-	67.0	503.2	67.0	12.98	556.94
OW663B	571.79	572.15	8/9/1994	4	452.7	-	413.6	119.5	-	158.6	413.6	158.6	13.70	558.09
OW663C	572.08	572.37	8/10/1994	4	501.4	-	455.9	71.0	-	116.5	455.9	116.5	15.74	556.34
OW663D	572.21	572.33	8/9/1994	4	549.5	-	504.5	22.8	-	67.8	504.5	67.8	16.18	556.03
OW664B	571.53	571.85	12/14/1994	4	449.9	-	418.9	122.0	-	153.0	418.9	153.0	16.95	554.58
OW664C	571.5	571.84	12/5/1994	4	499.8	-	452.8	72.0	-	119.0	452.8	119.0	16.42	555.08
OW664D	571.56	571.9	12/12/1994	4	548.1	-	502.9	23.8	-	69.0	502.9	69.0	18.10	553.46
OW665B	573.06	573.37	7/22/1994	4	450.0	-	415.0	123.4	-	158.4	415.0	158.4	18.41	554.65
OW665C	573.04	573.33	7/25/1994	4	498.9	-	453.4	74.4	-	119.9	453.4	119.9	16.66	556.38
OW665D	573.13	573.42	7/22/1994	4	547.0	-	502.3	26.4	-	71.2	502.3	71.2	18.59	554.54
OW666B	571.37	571.59	1/12/1995	4	453.2	-	410.2	118.4	-	161.4	410.2	161.4	38.46	532.91
OW666C	571.29	571.69	1/10/1995	4	504.7	-	456.2	67.0	-	115.5	456.2	115.5	15.83	555.46
OW666D	571.2	571.57	1/10/1995	4	552.5	-	507.1	19.1	-	64.5	507.1	64.5	20.39	550.81
OW667B	576.28	573.48	10/6/1994	4	453.4	-	413.4	120.1	-	160.1	413.4	160.1	26.84	549.44
OW667C	575.78	572.97	10/5/1994	4	503.8	-	456.2	69.2	-	116.8	456.2	116.8	19.87	555.91
OW667D	576.31	573.48	10/6/1994	4	552.2	-	506.2	21.3	-	67.3	506.2	67.3	26.03	550.28
OW668B	570.86	571.29	1/4/1995	4	454.3	-	420.8	117.0	-	150.5	420.8	150.5	17.98	552.88
OW668C	570.95	571.2	1/4/1995	4	502.9	-	457.7	68.3	-	113.5	457.7	113.5	15.96	554.99
OW668D	571.1	571.25	12/23/1994	4	551.0	-	506.0	20.3	-	65.3	506.0	65.3	19.78	551.32
River	568.91	N/A	N/A	N/A	N/A	-	N/A	N/A	-	N/A	N/A	N/A	6.20	562.71

## Notes:

ft BTOC – feet below top of casing

ft AMSL – feet above mean sea level

NM - Not measured

NC - Not calculated

N/A - Not applicable

(1) - Well buried under stone

(2) - Water level measured on June 15, 2020

(3) - Water level measured on September 21, 2020

**Table 8**  
**Overburden Weekly Flow Rates**  
**Second Quarter 2021**  
**Buffalo Avenue Plant**

Date	Flow Zone 1						Flow Zone 3		Abandoned Outfall 005		Abandoned D-Area Sanitary Sewer	
	System Total		Wet Well 2		Wet Well 1		WWB		MH159L		MH301	
	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)	Total Flow (gallons)	Average Flow Rate (gpm)
7/5/2021	140000	13.89	7000	0.69	133000	13.19	26000	2.58	30000	2.98	18000	1.79
7/12/2021	239000	24.42	32000	3.25	207000	21.17	143000	14.44	30000	2.98	104000	10.83
7/19/2021	232000	31.92	31000	4.23	201000	27.69	254000	25.66	30000	2.98	163000	19.69
7/26/2021	149000	32.28	2000	0.46	147000	31.82	92000	9.18	23000	2.28	64000	6.39
8/2/2021	462000	45.83	3000	0.30	459000	45.54	46000	4.56	38000	3.77	32000	3.17
8/9/2021	313000	31.05	(1)	0.00	313000	31.05	39000	3.87	37000	3.67	24000	2.38
8/16/2021	166000	28.82	(1)	0.00	166000	28.82	27000	4.69	22000	2.18	18000	3.13
8/23/2021	381000	37.80	(1)	0.00	381000	37.80	22000	2.18	38000	3.77	15000	1.49
8/30/2021	429000	42.56	(1)	0.00	429000	42.56	19000	1.88	39000	3.87	13000	1.29
9/6/2021	309000	30.84	(1)	0.00	309000	30.84	21000	2.08	38000	3.77	14000	1.39
9/13/2021	152000	13.19	(1)	0.00	152000	13.19	162000	14.06	43000	4.27	118000	10.24
9/20/2021	296000	41.11	(1)	0.00	296000	41.11	85000	9.84	33000	3.27	55000	6.37
9/27/2021	561000	55.99	(1)	0.00	561000	55.99	109000	10.81	38000	3.77	71000	7.04

Notes:

GPM - gallons per minute.

Flow rates shown are the average flow rate while the pump is operational.

(1) Totalizer malfunction occurred for WW2. Pumped operated as normal per PLC flow rate data trends. Anticipated approximately 3,000 gallons per week .

Table 9

**Overburden Performance Summary  
Third Quarter 2021  
Buffalo Avenue Plant**

**Flow Rate Summary**

System Component	Average Flow				Quarterly Total (gallons)
	Jul-21	Aug-21	Sep-21	Quarterly	
<b><u>Flow Zone 1</u></b>					
Wet Well 1	27.9	35.1	35.3	32.7	3,754,000
Wet Well 2	1.5	0.0	0.0	0.50	75,000
<b>TOTAL</b>	<b>35.1</b>	<b>35.3</b>	<b>33.2</b>	<b>34.5</b>	<b>3,829,000</b>
<b><u>Flow Zone 3</u></b>					
WWB	11.3	3.2	9.2	7.9	1,045,000
<b><u>Abandoned Outfall 005</u></b>					
MH159L	3.0	3.4	3.8	3.4	439,000
<b><u>Abandoned D-Area Sanitary Sewer</u></b>					
MH301	8.4	2.1	6.3	5.6	

**Operating Time Summary**

System Component	Average Percent Operational			
	Jul-21	Aug-21	Sep-21	Quarterly
<b><u>Flow Zone 1</u></b>				
Wet Well 1	81.3%	90.3%	90.3%	87.3%
Wet Well 2	87.9%	90.2%	90.2%	89.4%
<b><u>Flow Zone 3</u></b>				
WWB	99.9%	90.3%	90.3%	93.5%
<b><u>Abandoned Outfall 005</u></b>				
MH159L	86.3%	90.3%	90.3%	89.0%
<b><u>Abandoned D-Area Sanitary Sewer</u></b>				
MH301	91.3%	90.3%	90.3%	90.6%

Notes:

GPM - gallons per minute.

Table 10

**Overburden Groundwater Elevation Summary  
Third Quarter 2020  
Buffalo Avenue Plant**

Well	Top of Riser Elevation	Ground Surface Elevation	Date of Installation	Riser Diameter (inches)	Screened Interval				Well Bottom		Water Level Data	
					Top (ft AMSL)	Bottom (ft AMSL)	Top (ft BGS)	Bottom (ft BGS)	Elev. of (ft AMSL)	Depth to (ft BGS)	9/7/2021 (ft BTOC) (ft AMSL)	
BH1B-88 <sup>(1)</sup>	572.53	572.70	12/20/1988	2	568.8	- 557.8	3.9	- 14.9	557.8	14.9	7.09	565.44
BH4-88 <sup>(1)</sup>	572.12	572.45	12/9/1988	2	568.2	- 565.2	4.3	- 7.3	565.2	7.3	4.59	567.53
BH7-89	572.32	572.67	5/24/1989	2	560.6	- 553.2	12.1	- 19.5	553.2	19.5	14.29	558.03
BH8-89	568.00	568.23	1/6/1989	2	563.4	- 549.4	4.8	- 18.8	549.4	18.8	4.98	563.02
CMH1	569.50	568.53	1997	NA	NA	- 558.0	NA	- 10.5	558.0	10.5	4.89	564.61
CMH2	569.42	568.49	1997	NA	NA	- 562.5	NA	- 6.0	562.5	6.0	6.03	563.39
MH-A	568.89	569.85	Unknown	NA	NA	- 556.5	NA	- 13.4	556.5	13.4	11.53	557.36
MH-B	568.87	568.72	Unknown	NA	NA	- 556.5	NA	- 12.2	556.5	12.2	9.64	559.23
MH-C	568.88	568.59	Unknown	NA	NA	- 557.0	NA	- 11.6	557.0	11.6	9.14	559.74
MH-D	569.89	568.50	Unknown	NA	NA	- 556.3	NA	- 12.2	556.3	12.2	10.15	559.74
MH-E	568.81	567.48	Unknown	NA	NA	- 555.8	NA	- 11.7	555.8	11.7	9.09	559.72
MH-F	568.90	567.83	1998	NA	NA	- 553.5	NA	- 14.4	553.5	14.4	6.48	562.42
OW270	571.55	570.88	10/16/1987	2	564.5	- 545.5	6.4	- 25.4	545.5	25.4	8.16	563.39
OW273	570.00	570.28	10/20/1987	2	563.5	- 551.5	6.8	- 18.8	551.5	18.8	7.33	562.67
OW300	567.07	567.56	5/25/1989	2	560.5	- 545.0	7.1	- 22.6	545.0	22.6	4.61	562.46
OW301	568.38	568.95	7/24/1989	2	564.8	- 557.8	4.2	- 11.2	557.8	11.2	3.12	565.26
OW302 <sup>(1)</sup>	569.98	570.10	10/26/1988	2	565.6	- 563.6	4.5	- 6.5	563.6	6.5	5.04	564.94
OW303 <sup>(1)</sup>	570.81	570.10	11/2/1988	2	566.3	- 562.3	3.8	- 7.8	562.3	7.8	3.12	567.69
OW304 <sup>(1)</sup>	571.50	571.40	10/20/1988	2	565.3	- 560.3	6.1	- 11.1	560.3	11.1	5.21	566.29
OW305 <sup>(1)</sup>	572.75	573.20	10/31/1988	2	569.4	- 564.4	3.8	- 8.8	564.4	8.8	3.46	569.29
OW306 <sup>(1)</sup>	571.85	571.90	11/15/1988	2	567.9	- 564.9	4.0	- 7.0	564.9	7.0	3.98	567.87
OW308	574.24	571.40	11/17/1988	2	567.6	- 564.6	3.8	- 6.8	564.6	6.8	4.39	569.85
OW310 <sup>(1)</sup>	572.28	572.80	11/22/1988	2	569.3	- 564.3	3.5	- 8.5	564.3	8.5	1.77	570.51
OW313	569.26	568.70	10/13/1988	2	550.8	- 545.8	17.9	- 22.9	545.8	22.9	6.21	563.05
OW314	569.04	568.90	6/12/1989	2	565.4	- 553.4	3.5	- 15.5	553.4	15.5	5.52	563.52
OW316	569.77	570.10	11/9/1988	2	566.1	- 559.1	4.0	- 11.0	559.1	11.0	2.66	567.11
OW317 <sup>(1)</sup>	572.60	572.50	9/26/1988	2	568.8	- 563.8	3.7	- 8.7	563.8	8.7	2.09	570.51
OW327 <sup>(1)</sup>	570.75	571.40	2/9/1990	2	567.4	- 565.4	4.0	- 6.0	565.4	6.0	2.15	568.60
OW358	571.49	569.02	9/26/1989	2	563.9	- 550.9	5.1	- 18.1	550.9	18.1	7.55	563.94
OW553	573.51	573.77	8/27/1991	2	570.1	- 565.1	3.7	- 8.7	565.1	8.7	6.64	566.87
OW554	573.83	572.35	9/3/1991	2	568.4	- 563.4	4.0	- 9.0	563.4	9.0	6.34	567.49
OW555	571.51	571.65	9/3/1991	2	568.5	- 563.5	3.2	- 8.2	563.5	8.2	4.09	567.42
OW556	571.73	571.93	8/30/1991	2	567.8	- 562.8	4.1	- 9.1	562.8	9.1	3.78	567.95
OW557 <sup>(1)</sup>	571.69	572.16	5/16/1991	2	567.5	- 562.5	4.7	- 9.7	562.5	9.7	5.59	566.10
OW558 <sup>(1)</sup>	571.28	571.21	5/16/1991	2	567.4	- 562.4	3.8	- 8.8	562.4	8.8	2.16	569.12
OW559 <sup>(1)</sup>	569.73	570.35	9/10/1991	2	566.7	- 561.7	3.7	- 8.7	561.7	8.7	3.97	565.76
OW562	568.49	568.48	12/9/1996	2	555.2	- 550.2	13.3	- 18.3	550.2	18.3	6.16	562.33
OW563	567.67	568.02	12/5/1996	2	560.6	- 555.6	7.4	- 12.4	555.6	12.4	3.86	563.81

Table 10

**Overburden Groundwater Elevation Summary  
Third Quarter 2020  
Buffalo Avenue Plant**

Well	Top of Riser Elevation	Ground Surface Elevation	Date of Installation	Riser Diameter (inches)	Screened Interval				Well Bottom		Water Level Data 9/7/2021	
					Top (ft AMSL)	Bottom (ft AMSL)	Top (ft BGS)	Bottom (ft BGS)	Elev. of (ft AMSL)	Depth to (ft BGS)	(ft BTOC)	(ft AMSL)
OW564	569.05	569.58	12/11/1996	2	560.4	- 555.4	9.2	- 14.2	555.4	14.2	5.09	563.96
OW565	568.89	569.53	12/10/1996	2	557.0	- 552.0	12.5	- 17.5	552.0	17.5	6.90	561.99
OW566	568.55	568.83	12/5/1996	2	559.4	- 554.4	9.4	- 14.4	554.4	14.4	4.06	564.49
OW567	569.12	569.15	4/23/1998	2	560.1	- 555.1	9.0	- 14.0	555.1	14.0	4.51	564.61
OW568	568.26	568.95	4/23/1998	2	560.3	- 555.3	8.7	- 13.7	555.3	13.7	3.40	564.86
OW569	567.20	567.74	4/23/1998	2	562.7	- 559.7	5.0	- 8.0	559.7	8.0	5.11	562.09
OW570	568.46	568.70	4/23/1998	2	563.6	- 560.6	5.1	- 8.1	560.6	8.1	5.18	563.28
OW571	567.80	568.52	4/24/1998	2	566.2	- 561.2	2.3	- 7.3	561.2	7.3	3.86	563.94
OW572	567.95	568.30	4/24/1998	2	565.9	- 560.9	2.4	- 7.4	560.9	7.4	3.48	564.47
OW573R <sup>(1)</sup>	573.02	573.48	6/29/2004	2	569.0	- 564.0	4.5	- 9.5	564.0	9.5	7.26	565.76
OW574 <sup>(1)</sup>	571.16	571.24	11/15/1999	2	560.8	- 555.8	10.4	- 15.4	555.8	15.4	3.63	567.53
OW575	568.40	568.45	1/15/2002	1	564.6	- 559.8	3.9	- 8.7	559.8	8.7	3.96	564.44
OW576	568.32	568.52	1/15/2002	1	565.6	- 560.9	2.9	- 7.6	560.9	7.6	3.71	564.61
OW577	567.53	567.59	1/15/2002	1	563.3	- 558.0	4.3	- 9.6	558.0	9.6	5.12	562.41
OW578 <sup>(1)</sup>	572.21	572.48	6/6/2002	1	568.6	- 564.6	3.9	- 7.9	564.6	7.9	3.35	568.86
OWG8 <sup>(1)</sup>	570.66	571.10	6/3/1986	2	566.2	- 564.2	4.9	- 6.9	564.2	6.9	.78	569.88
WS107	573.18	573.73	7/30/1980	1.5	565.6	- 563.6	8.1	- 10.1	563.6	10.1	1.09	572.09
WS10A	572.58	569.78	1/16/1979	1.5	567.9	- 552.9	1.9	- 16.9	552.9	16.9	7.79	564.79
WS111R <sup>(1)</sup>	572.35	572.70	6/6/2002	1	568.2	- 565.2	4.5	- 7.5	565.2	7.5	<sup>(3)</sup>	<sup>(3)</sup>
WS122 <sup>(1)</sup>	571.57	572.25	7/7/1980	1.5	564.6	- 562.6	7.7	- 9.7	562.6	9.7	1.32	570.25
WS23A <sup>(1)</sup>	572.30	572.74	1/29/1979	1.5	570.5	- 565.5	2.2	- 7.2	565.5	7.2	1.89	570.41
WS25A <sup>(1)</sup>	571.10	571.67	1/26/1979	1.5	569.3	- 564.3	2.4	- 7.4	564.3	7.4	2.03	569.07
WS8A	570.10	570.20	3/19/1979	1.5	566.3	- 551.3	3.9	- 18.9	551.3	18.9	3.70	566.40
WW1	570.30	569.26	1997	NA	NA	- 545.3	NA	- 24.0	545.3	24.0	16.29	554.01
WW2	569.27	568.82	1997	NA	NA	- 553.8	NA	- 15.0	553.8	15.0	9.99	559.28
WWB	573.74	572.68	1980	NA	NA	- 556.7	NA	- 16.0	556.7	16.0	12.44	561.30

## Notes:

ft BGS - Feet below ground surface  
ft BTOC - Feet below top of casing  
ft AMSL - Feet above mean sea level

MH - Manhole chamber

NA - Not applicable

NM - Not measured

"-" Not measured per monitoring schedule

(1) - Annual measurements only

(2) - Dry

Table 11

**Summary of Bedrock NAPL Monitoring and Collection  
Third Quarter 2021  
Buffalo Avenue Plant**

Date	Bedrock A-Wells				S-Area Bedrock Wells in the N-Area									
	OW402A (Gallons)	OW413A (Gallons)	OW417A (Gallons)	OW401B (Gallons)	Shallow				Intermediate		Deep			
					OW229 (Gallons)	OW243 (Gallons)	OW618 (Gallons)	OW619 (Gallons)	OW620 (Gallons)	OW621 (Gallons)	OW634 (Gallons)	OW638 (Gallons)	OW635 (Gallons)	OW643 (Gallons)
August 24, 2021	6	1.25	NR	NR	--	--	--	--	--	--	--	--	--	--
September 3, 2021	--	--	--	--	NR	NR	NR	ND	ND	2	NR	3.25	NR	2
Cumulative Volume (as of June 30, 2021)	6154.05	579.75	<40.80	6.00	11.20	56.00	20.95	0.00	0.00	31.50	5.50	140.70	8.75	242.70
Cumulative Volume (as of September 30, 2021)	6160.05	579.75	<40.80	6.00	11.20	56.00	20.95	0.00	0.00	33.50	5.50	144.05	8.75	242.70
Monitoring Frequency <sup>(1)</sup>	Annual	Annual	Annual	Annual	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

## Notes:

-- Not checked per schedule.

ND None detected.

NR Not recoverable

<sup>(1)</sup> Frequency revised in second quarter 2010 to reflect NYSDEC's May 4, 2010 letter.

Table 12

**Summary of Overburden NAPL Monitoring and Collection  
Third Quarter 2021  
Buffalo Avenue Plant**

<b>Date</b>	<b>003 NAPL Collection Trench (Gallons)</b>	<b>OW313 (Gallons)</b>	<b>OW572 (Gallons)</b>	<b>OW317 (Gallons)</b>	<b>OW320 (Gallons)</b>	<b>OW358 (Gallons)</b>	<b>OW523 (Gallons)</b>	<b>OW562 (Gallons)</b>	<b>OW563 (Gallons)</b>	<b>TW-7 (Gallons)</b>	<b>OW306 (Gallons)</b>	<b>BH8-89 (Gallons)</b>	<b>OW564 (Gallons)</b>	<b>OW537 (Gallons)</b>	<b>OW577 (Gallons)</b>	<b>Energy Boulevard Drain Tile System (Gallons)</b>
August 24, 2021	--	0.25	0.25	--	--	--	--	--	--	--	--	--	--	--	--	--
August 26, 2021	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
September 8, 2021	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR
Subtotal (Second Quarter)	0.00	0.30	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative volume (as of June 30, 2021)	959.75	46.10	38.83	0.21	1.50	0.50	0.30	0.00	9.00	0.56	0.00	0.00	0.00	0.00	0.25	6011.25
Cumulative volume (as of September 30, 2021)	959.75	46.40	39.03	0.21	1.50	0.50	0.30	0.00	9.00	0.56	0.00	0.00	0.00	0.00	0.25	6011.25
Monitoring Frequency <sup>(1)</sup>	Quarterly	Semiannual	Semiannual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Quarterly

## Notes:

-- Not checked per schedule.

ND - None detected.

NR - Not recoverable.

<sup>(1)</sup> Frequency revised in second quarter 2010 to reflect NYSDEC's May 4, 2010 letter.