



October 15, 2018

Reference No. 006883

Mr. Mike Negrelli
Emergency Remedial Response Division
United States Environmental Protection Agency Region II
290 Broadway, 20th Floor
New York, New York
10007 1866

Dear Mr. Negrelli:

**Re: Quarterly Report – Third Quarter 2018 (July through September)
Administrative Orders Hooker Chemical/Ruco Polymer Corporation Site
Index Nos. II CERCLA 80216, II CERCLA 94 0210, and II CERCLA 02 2001 2018**

This submittal provides the Quarterly Progress Report covering July through September 2018 for the Hooker/Ruco Site in Hicksville, New York, on behalf of Glenn Springs Holdings, Inc. (GSH). This Report covers OU 1, OU 2, and OU 3. Please note that the next Quarterly Progress Report will be submitted by January 15, 2019 and will cover October through December 2018. A listing of the primary activities is provided in Table 1.

Quarterly Progress Report

The following activities were performed during the period July through September 2018:

- The Quarterly Progress Report for the time period April through June 2018 was submitted to the USEPA on July 16, 2018.

Operable Unit 1 (On-Site Soil)

All work has been successfully completed. OU 1 is closed.

Operable Unit 2 (Soils Impacted by On-Site Release of PCBs)

All work has been successfully completed. OU 1 is closed.

Operable Unit 3 (Off Site Groundwater)

A listing of the OU 3 O&M activities performed for this reporting period is provided in Table 2. Additional details for the primary activities are provided in the following sections.

It is noted that the selected remedy for the VCM subplume is also based on the recognition that the Northrop groundwater extraction and treatment system (i.e., pumping of Northrop Wells 1 and 3R and treatment via the Tower 96 system) is containing and remediating a commingled plume of PCE and TCE from the Northrop, NWIRP and Hooker/Ruco sites. The VCM subplume is co located within the commingled PCE/TCE plume. Most of the PCE and TCE located within the commingled plume is associated with the Northrop and NWIRP sites. The Northrop system captures and treats all of the PCE, TCE and VCM, not being treated by the biosparge system, associated with the Hooker/Ruco Site.



Supplemental Treatment System

Agency concurrence to stop treatment of VCM with GSH's supplemental air treatment system was received on January 26, 2017. Operation, maintenance and monitoring of the supplemental system was thereafter taken over by Northrop. It is noted that the VCM concentrations in Well 3R ranged between 2.2 and 3.9 micrograms per liter ($\mu\text{g/L}$) from December 2016 to February 2018 with the most recent concentration from June 2018 being 2.0 $\mu\text{g/L}$. This further supports that treatment of VCM by the supplemental system is no longer needed.

Biosparge System

See Figures 1 and 2 for system layout and Figures 3 and 4 for system cross sections. Also shown on Figures 1 and 2 are the most recent VCM groundwater concentrations.

Notification of the 2nd semi-annual 2018 biosparge system performance monitoring event was submitted on October 5, 2018. Sampler insertion is scheduled to start on or about October 18, 2018.

During the reporting period, air was injected into all north fence wells and all middle fence injection wells except for IW 6D2, IW 7D1, IW 16D1, IW 17D2, and IW 18D1. As noted in Table 4, repairs are ongoing for IW 6D2 and IW 7D1. For the remainder of the wells, it is believed that there are physical impairments in these wells. It is also believed that air injection into these wells is not essential because air is being injected into the air injection wells immediately adjacent to and above these injection points, the dissolved oxygen (DO) concentrations in the majority of nearby monitoring wells are greater than the target level of 2.0 milligrams per liter (mg/L) (as noted in Table 3), and VCM concentrations continue to decrease or remain low level.

Summary of Biosparge System

The DO, total volatile organic compounds (TVOC), and VCM concentration trends for the individual groundwater monitoring wells around the biosparge injection system are shown on Figures 5 through 9. It is noted that figures for well pairs in which the VCM concentrations have been less than the MCL of 2 $\mu\text{g/L}$ for at least the last 2 years were not prepared for the Third Quarter 2017 report. The D1 & D2 wells achieving this goal were MW 61D2, MW 63, MW 72, MW 77, MW 81, MW 82, MW 83, MW 84, MW 87, MW 76S&I, MW 85S&I, MW 63S&I, MW 73D1&D2, MW 86D1&D2, and MW 90D1&D2. In addition, MW 88D1&D2 have also achieved this goal as indicated in the Second Quarter 2018 report. Thus, no figures for these well pairs are included in this report.

To date, the results show that the biosparge system is operating successfully as demonstrated by the following:

- i) DO levels in the groundwater are greater than the target concentration of 2 mg/L in 20 of the 27 monitoring wells measured in April/May 2018 (see Table 3).
- ii) Groundwater VCM concentrations are non detect, low level, or decreased between the October/November 2017 and April/May 2018 performance monitoring events in 46 of the 47



monitoring wells for the biosparge system as a result of the microbial biodegradation processes. A minor increase was detected in MW 89D1 (3.8 to 4.8 µg/L).

The wells with lowest DO concentrations are located in close proximity to either the north fence or the east portion of the middle fence of injection wells. It is anticipated that as the groundwater flow paths converge as they approach Northrop Well 3R, the groundwater with low DO concentrations will mix with groundwater with higher DO concentrations. This expectation is supported by the April/May 2018 DO concentrations in wells MW 66D2, MW 67 and MW 68 which have all increased since the last quarter up to 19.44 mg/L and are located between the middle fence and Well 3R (see Table 3).

The VCM concentrations upgradient of the north fence decreased from 42 µg/L (October 2015) to 24 µg/L (October 2017) in well MW 92 and from 4 µg/L (October 2015) to 1.5 µg/L (October 2017) in well MW 92. These wells are scheduled to be sampled in October 2019.

The VCM concentrations along the west edge of the VCM subplume between the north fence and the middle fence remained non detect in wells MW 63 and MW 86 since the April/May 2016 sampling event.

The VCM concentrations along the east edge of the VCM subplume downgradient of the middle fence increased from 3.8 µg/L for the October/November 2017 event to 4.8 µg/L for the April/May 2018 event. The VCM concentrations in well MW 85 have decreased from 2.1 µg/L in MW 85D1 for the October/November 2017 event to 1.66 µg/L in April/May 2018.

The VCM concentrations in Northrop well MW 3 1, located in close proximity to Northrop Well 3R (fka GP 3) (south of the sub plume), were low at 16 and 14 µg/L when last sampled in May and October 2016, respectively.

All of the above indicate that the extent of the VCM subplume is becoming smaller and the VCM concentrations therein are decreasing.

Table 3 of this report also presents analytical results for the other primary VOCs in the groundwater (i.e., PCE and TCE) being sampled by the biosparge system monitoring wells. The PCE, TCE and VCM concentrations for the time period since the start of operation of the Pilot System in October 2006 (for wells which monitor the Pilot System) and since the start of the remainder of biosparge system in September 2012 (for the wells which monitor the remainder of the system) are provided in the table.

As requested by the USEPA, the listed wells have been divided into three groups:

- i) Those wells which are monitored in accordance with the sampling frequency specified in Table 7.1 of the OU 3 Interim Remedial Action Report (Base Wells) (as modified on March 8, 2017).
- ii) Those wells which are sampled periodically on a voluntary basis to obtain a more regional view of chemical presence in the vicinity of the VCM plume (Voluntary Wells).
- iii) Those wells monitored by Northrop which aid in interpreting the chemical presence in the vicinity of the VCM plume (Northrop Wells).



For the 43 base wells listed in Table 3, the PCE concentrations since start of the biosparge system operation have:

- i) Decreased in 21 wells
- ii) Remained relatively constant with random fluctuations in 17 wells
- iii) Increased in 5 wells (MW 77D2, 81D2, 83D2, 86D2 and 87D2)

Similarly, the TCE concentrations have:

- i) Decreased in 22 wells
- ii) Remained relatively constant with random fluctuations in 20 wells
- iii) Increased in 1 well (MW 87D2)

The well in which both PCE and TCE concentrations increased was MW 87D2. Four of these wells (MW 81D2, MW 83D2, MW 86D2 and MW 87D2) are located in proximity to the western edge of the VCM plume. MW 77D2 is located in proximity to the eastern edge of the VCM plume. The reason for the increase is uncertain but is believed to be inconsequential. During installation of the north fence biosparge system injection and monitoring wells into the VCM impacted groundwater in 2011, groundwater with higher PCE and TCE concentrations were detected in the deeper groundwater below the elevation of the groundwater with VCM (see Figure 3). At that time, it was believed, and still is, that the PCE and TCE at depths below the VCM were due to sources other than the Hooker/Ruco Site. It is possible that the groundwater with higher concentrations is now impacting the groundwater chemistry in the referenced wells.

With regard to the wells which are sampled on a voluntary basis, it was noted that there was a TCE concentration increase in well nest MW 58 from the 70 to 110 µg/L range in May 2013 to the 2400 to 7600 µg/L range between November 2014 and November 2017. TCE concentrations have recently begun to decrease, ranging from 1910 to 2370 µg/L in April/May 2018. It is believed that these increases were due to the increased pumping rate of Northrop Well 3R drawing more of the highly TCE impacted groundwater from Northrop's OU 3 (see Figure 10).

Also of note is that the PCE and TCE concentrations in the well nests upgradient of the VCM plume (i.e., MW 92 and MW 93) have decreased significantly (e.g., PCE in MW 92D2 has decreased from 690 µg/L in April 2011 to 18 µg/L in October 2017 and from 110 µg/L in April 2011 to 13 µg/L in October 2017 for MW 93D2). These results combined with the decreasing VCM results in these wells are consistent with the expectation that the north upgradient edge of the VCM plume is migrating southward.

Well Conditions Update

The operational status of the injection and monitoring wells for the biosparge system is provided in Table 4. Since the issuance of the 2nd Quarter 2018 Progress Report, air injections into wells IW 2D1, IW 4D1, IW 4D2, IW 5D1, and IW 22D2 have resumed. In addition, air cannot be injected into wells IW 6D2 and IW 7D1. It is believed that a physical obstruction within each well is preventing this from occurring.



Repairs to these wells will not be performed unless DO concentrations decrease in downgradient monitoring wells. The operational status of the injection wells was updated using observations obtained during operation of the biosparge system during this reporting period. The operational status of the monitoring wells was updated using observations obtained during operation of the biosparge system during this reporting period.

Planned Fourth Quarter 2018 Activities

The following activities are planned for the fourth quarter of 2018:

- i. Continue operation and maintenance of the biosparge system
- ii. Perform the 2nd Semi-annual 2018 biosparge system performance monitoring event

GSH requests that the USEPA consider changing the frequency of reporting from quarterly to semi-annual, given that semi-annual sampling has been performed since 2009 and only minor updates are provided in the quarterly reports that are not associated with a semi-annual sampling event.

Should you have any questions on the above, please do not hesitate to contact the undersigned at 519-340-4313 or email john.pentilchuk@GHD.com.

Sincerely,

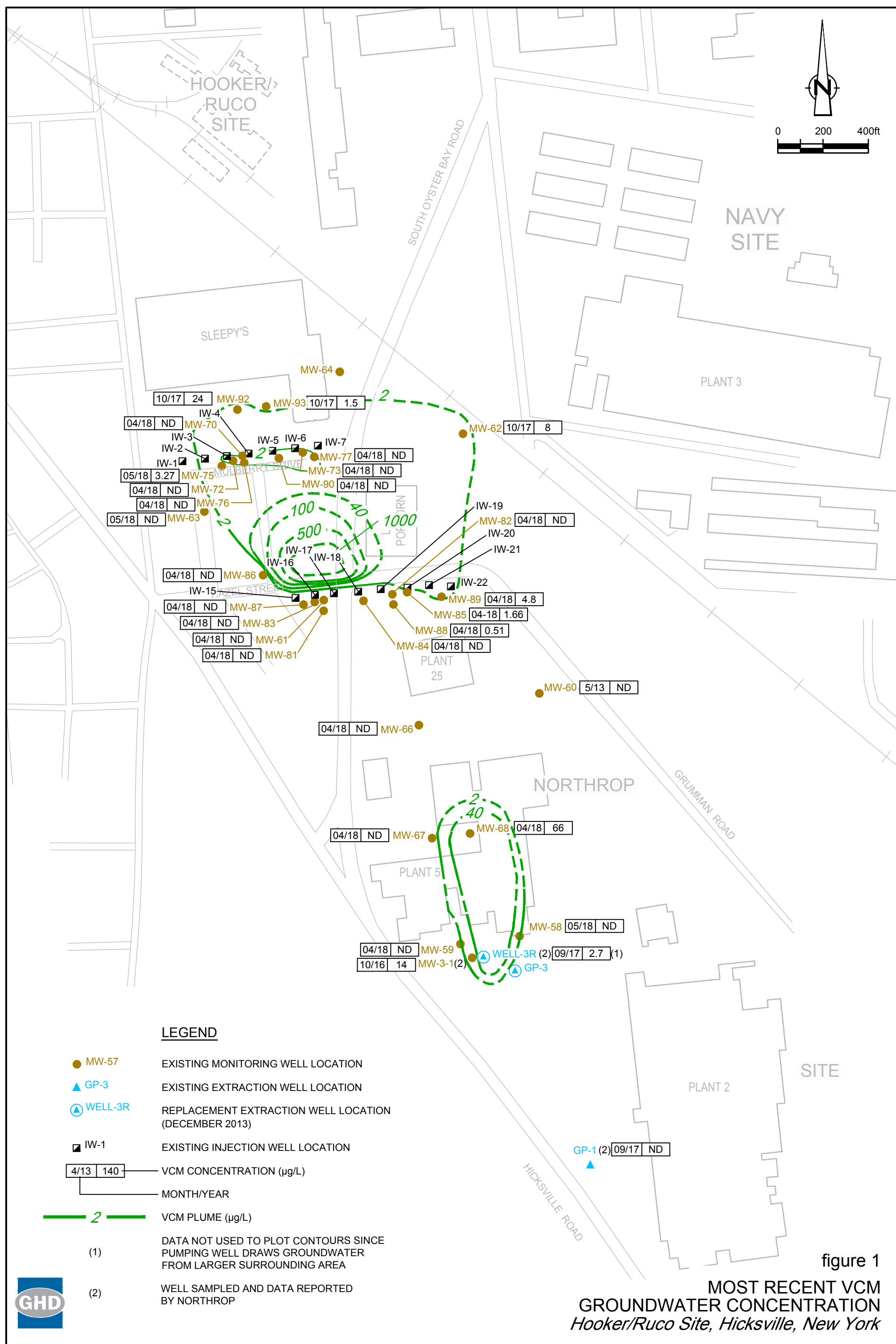
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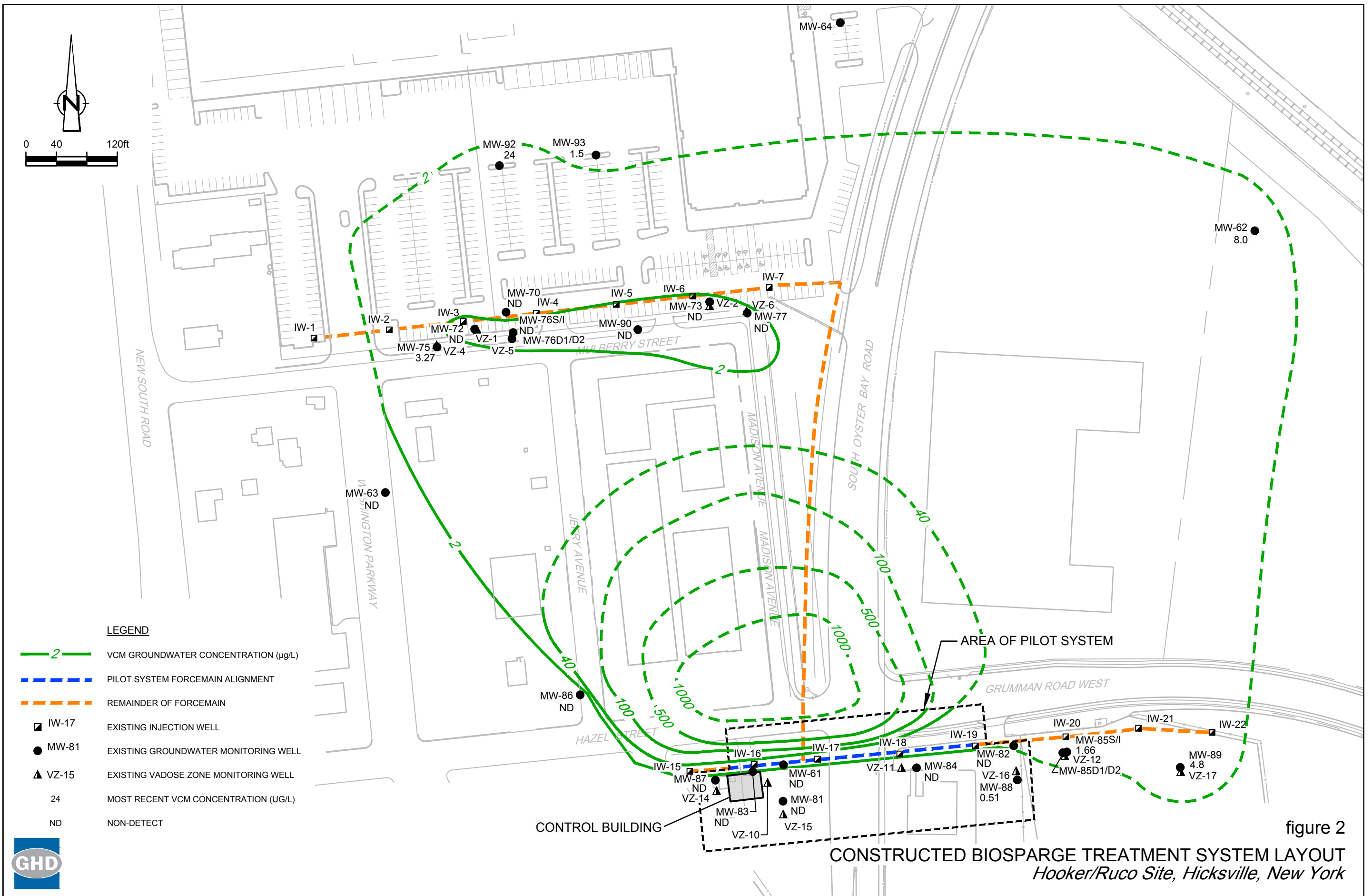
John Pentilchuk

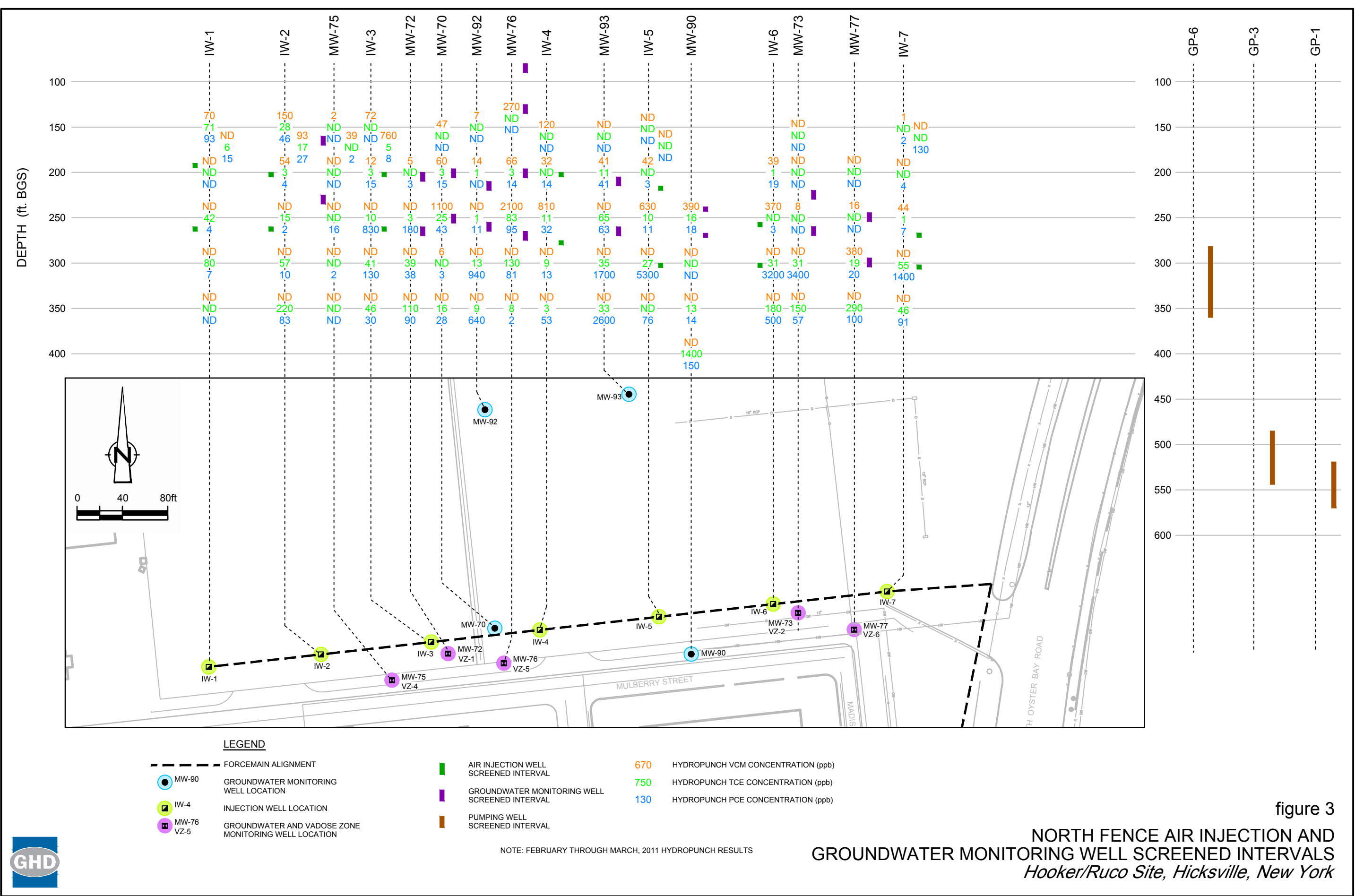
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Encl.

cc: P. Mannino (USEPA)
S. Scharf (NYSDEC)
B. Murray (US Navy)
T. Troutman (Covestro)
T. Kelly (Nassau County)
R. Smith (GSH)
J. Kay (GHD)







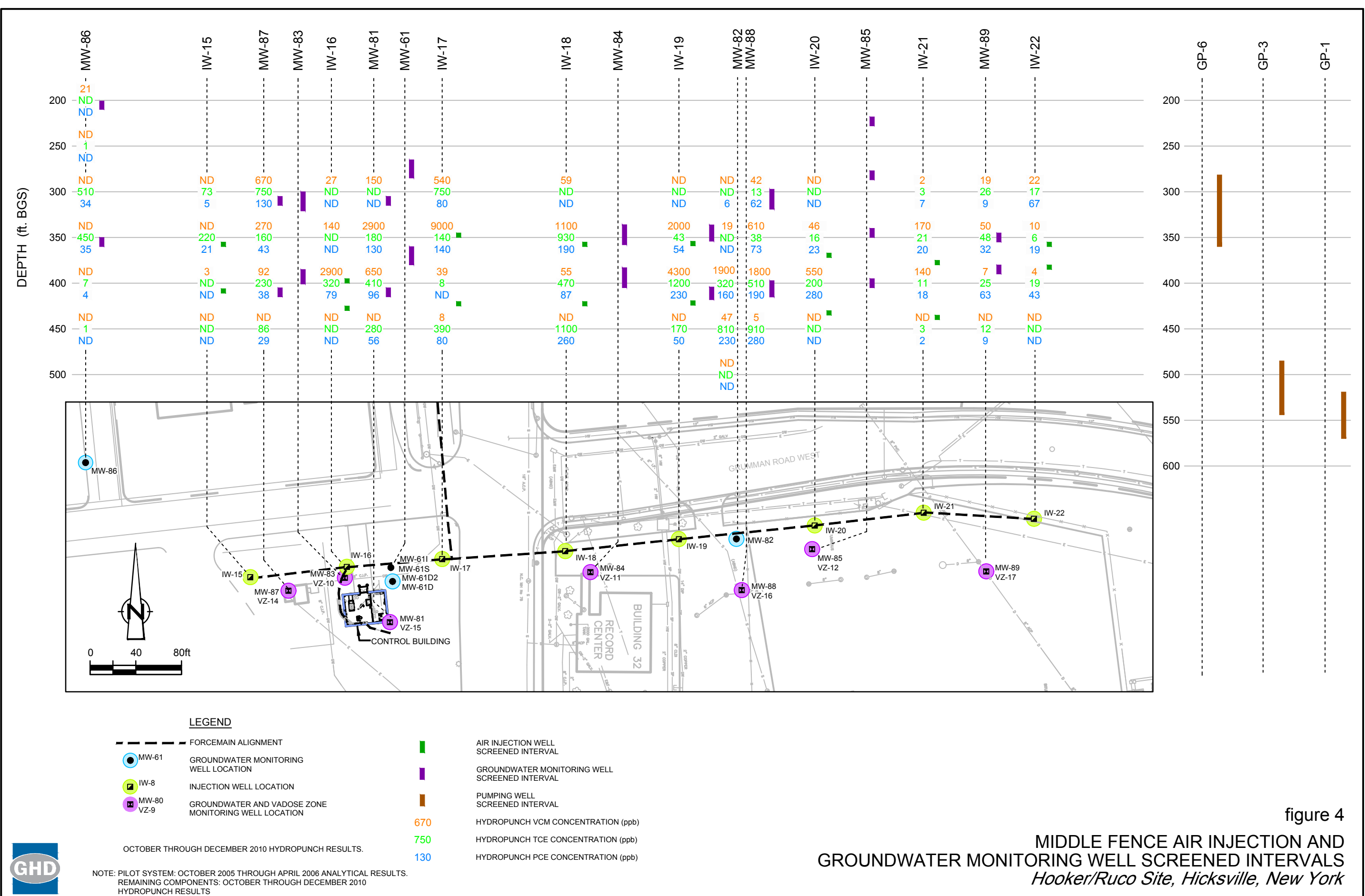


figure 4
**MIDDLE FENCE AIR INJECTION AND
 GROUNDWATER MONITORING WELL SCREENED INTERVALS**
Hooker/Ruco Site, Hicksville, New York

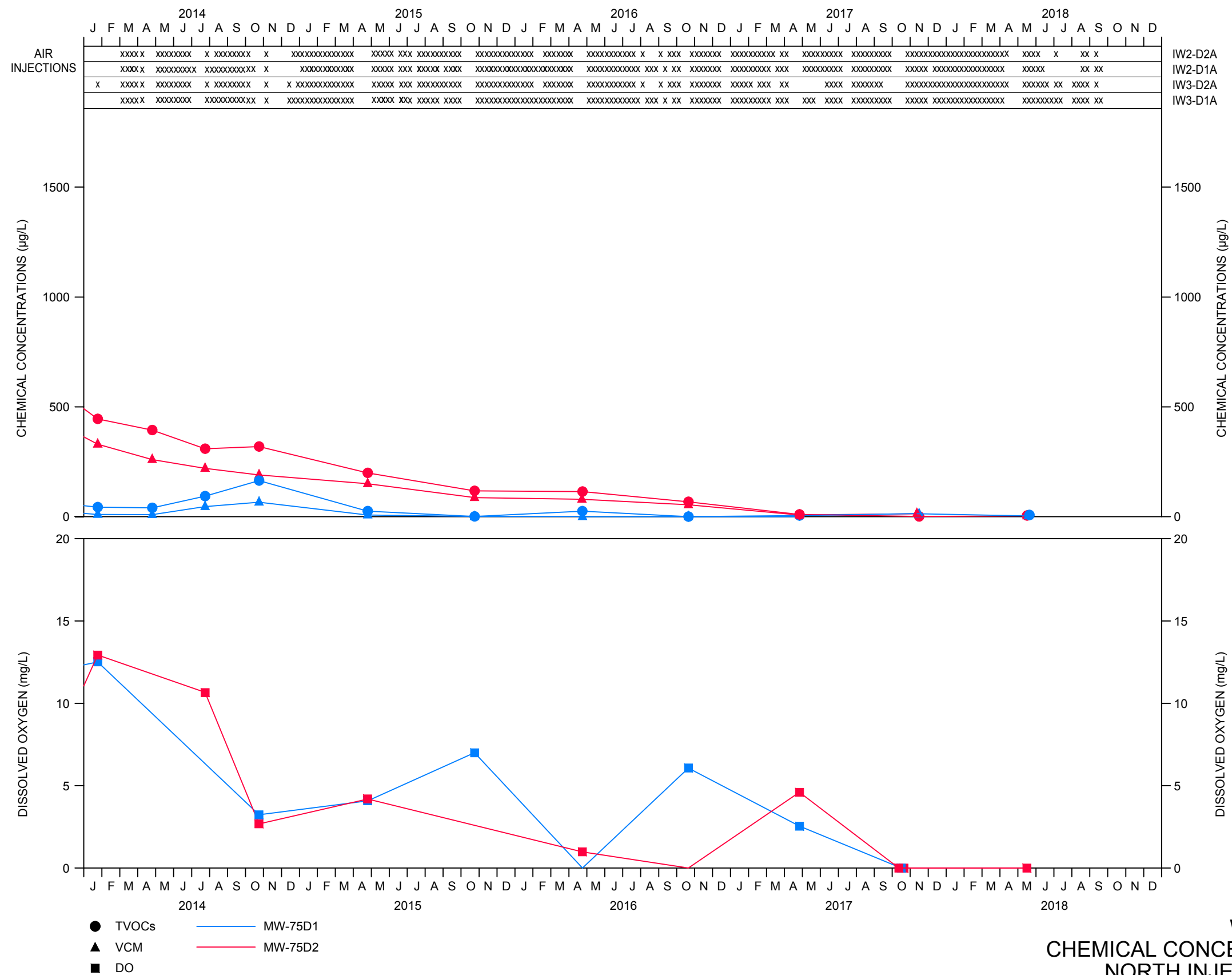


figure 6
 WELL NEST MW-75
 CHEMICAL CONCENTRATION PLOTS
 NORTH INJECTION FENCELINE
 Hooker/Ruco Site, Hicksville, New York



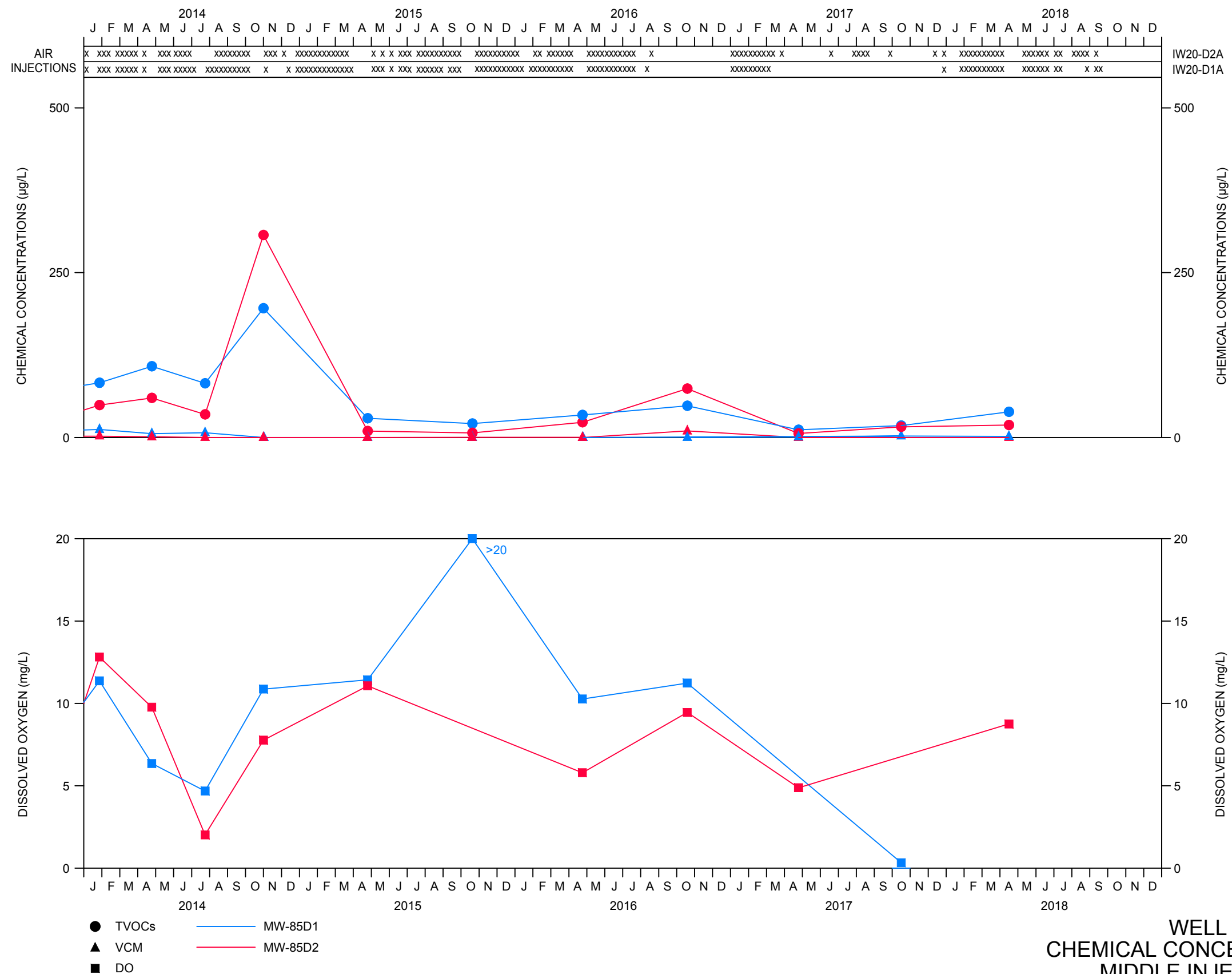


figure 8
WELL NEST MW-85D1/D2
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



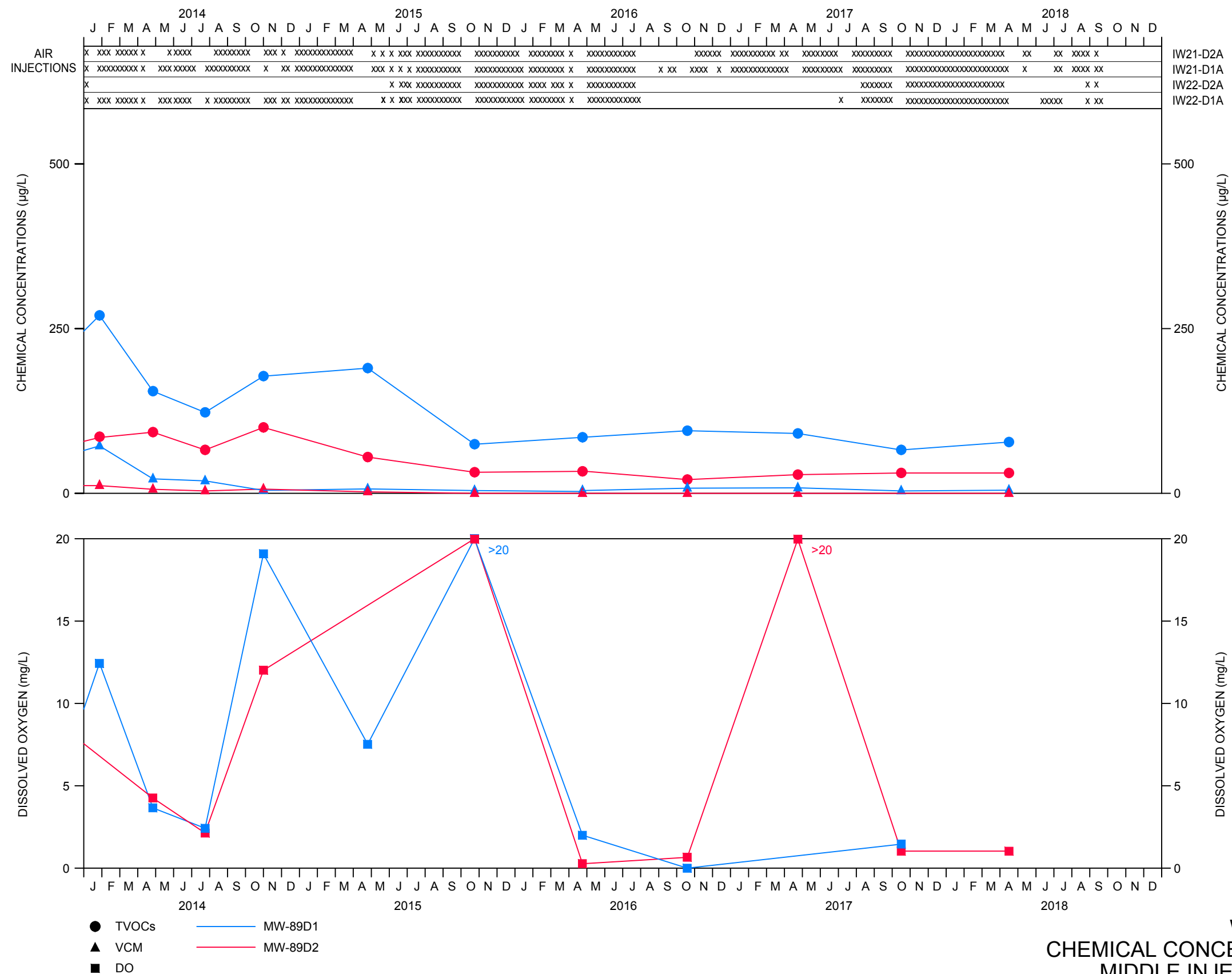


figure 9
WELL NEST MW-89
CHEMICAL CONCENTRATION PLOTS
MIDDLE INJECTION FENCELINE
Hooker/Ruco Site, Hicksville, New York



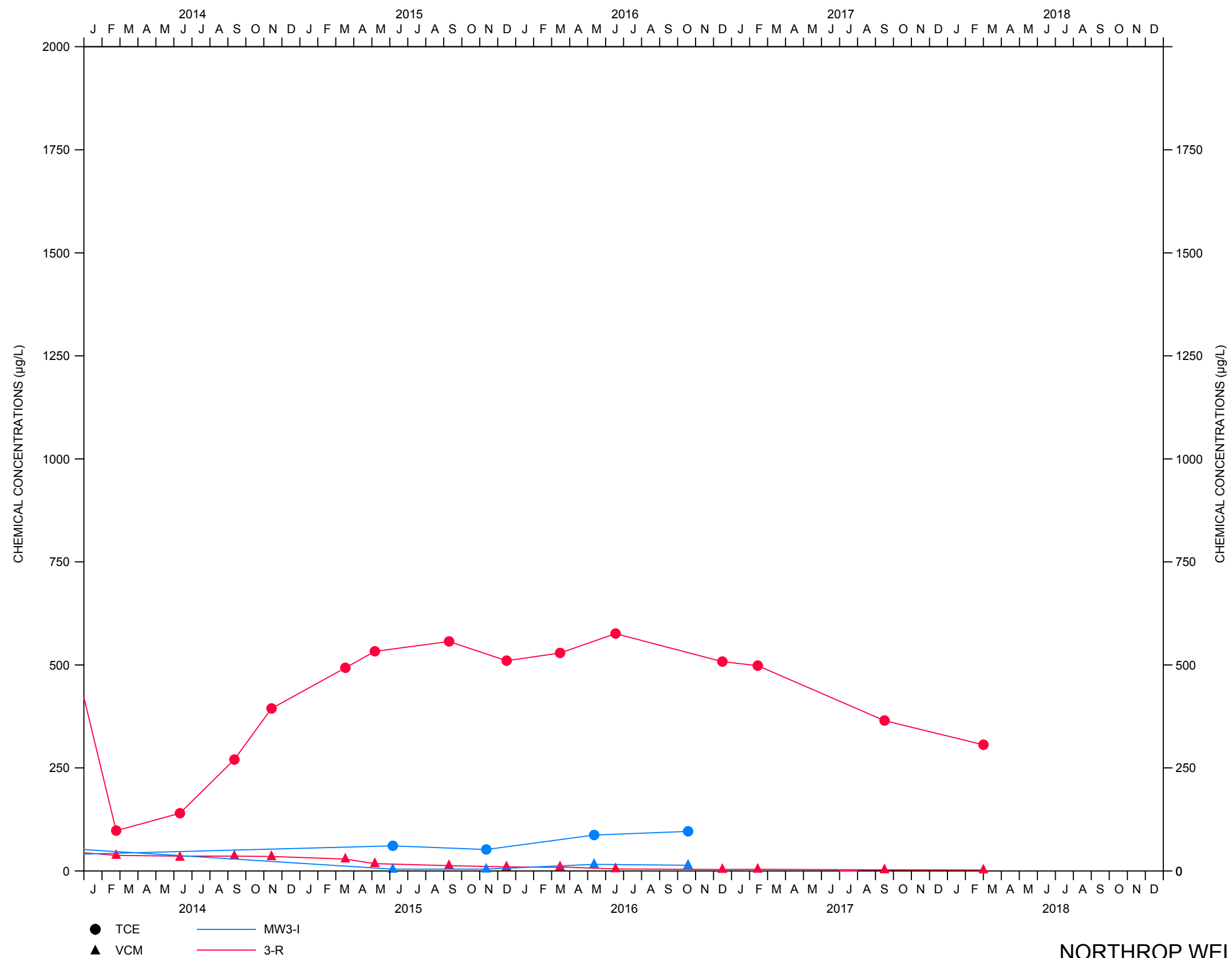


figure 10

NORTHROP WELLS MW3-1 AND 3-R
CHEMICAL CONCENTRATION PLOTS
Hooker/Ruco Site, Hicksville, New York



**Glenn Springs Holdings Inc.
Hooker/Ruco Site Operable Unit 3
Hicksville, New York
July through September 2018**

Task and Activity	Percentage of Activity Completed	Start Date	Scheduled Completion Date	Completion Date
• Work Plan	100	July 1993		September 23, 1993
• Borehole/Well Installation (MW-50, MW-53, MW-54 and MW-55)	100	September 30, 1994		June 19, 1995
• Well Development, Sampling and Analysis	100	July 10, 1995		August 9, 1995
• Water Level Measurements	100	August 15, 1995		April, 1996
• Interim Report	100	May 23, 1995		June 15, 1995
• Interim Report - Addendum No. 1	100	July 28, 1995		August 2, 1995
• Grumman Production Wells Sample Collection and Analysis	100	August 1, 1995		October 4, 1995
• Well Installation (MW-51, MW-52, MW-56 and MW-57)	100	August 30, 1995		January 26, 1996
• Regional Groundwater Level Monitoring Event	100	October 3, 1995		October 3, 1995
• Well Development, Sampling and Analysis	100	January 22, 1996		July 5, 1996
• Grumman Groundwater Model	100	July 27, 1995		November 20, 1997
• Phase I Report	100	February 21, 1996		April 26, 1996
• Supporting Documentation Regarding the Effectiveness of In Situ Remediation	100	June 10, 1996		August 9, 1996
• Phase II Report	100	February 21, 1996		August 12, 1996
• Comments on DEC Draft Supplemental Feasibility Study	100	September 23, 1996		October 17, 1996
• Responses to Northrop Comments on the Phase I Report	100	April 17, 1997		June 6, 1997
• Comments on DEC Supplemental Feasibility Study	100	June 1, 1997		June 20, 1997
• Comments on Navy Regional Groundwater Feasibility Study	100	July 28, 1997		October 8, 1997
• Revised Pages for Navy Regional Groundwater Feasibility Study	100	July 28, 1997		November 3, 1997
• Comments on Groundwater Flow Model Report	100	November 20, 1997		December 5, 1997
• Comments on Draft Final Regional Groundwater Feasibility Study	100	March 27, 1998		May 1, 1998
• Comments on Northrop Letter Report	100	May 20, 1998		June 4, 1998
• Evaluation of MW-52 Area Groundwater Extraction System	100	July 1, 1998		July 29, 1998
• Remedial Investigation Report	100	December 1, 1998		January 21, 1999
• Feasibility Study Report	100	December 1, 1998		March 16, 1999
• Groundwater Treatability Study (GTS)	100	December 16, 1998		July 19, 1999
• Responses to EPA Comments on RI Report	100	May 25, 1999		June 11, 1999
• Responses to EPA Comments on FS Report	100	June 21, 1999		July 7, 1999
• Scope of Predesign Investigative Activities				
- Initial	100	June 1, 1999		June 11, 1999
- Revised	100	February 16, 2001		May 28, 2001
• Revised RI Report	100	May 25, 1999		November 16, 1999
• Revised FS Report	100	July 7, 1999		December 22, 1999
• Responses to EPA Comments on GTS	100	October 14, 1999		November 3, 1999
• Responses to EPA Comments on FS Report Responses	100	October 14, 1999		November 3, 1999

**Glenn Springs Holdings Inc.
Hooker/Ruco Site Operable Unit 3
Hicksville, New York
July through September 2018**

Task and Activity	Percentage of Activity Completed	Start Date	Scheduled Completion Date	Completion Date
• Obtain access agreements	100	June 1999		December 2001
• Final RI Report	100	March 15, 2000		July 21, 2000
• Final FS Report	100	April 10, 2000		July 25, 2000
• PRAP	100			July 28, 2000
• ROD	100			September 29, 2000
• Unilateral Administrative Order	100			April 26, 2001
• Evaluate VCM presence in GP-3	100			August 15, 2001
• Design Supplemental System for VCM in GP-3	100	August 15, 2001		December 2001
• EPA Conditional Approval for Predesign Activities	100			September 28, 2001
• Issued Request for Bid for Well Installation	100			October 26, 2001
• Contractor Arrangements	100			January 15, 2002
• Arrangements for Biosparge Testing of Existing Wells	100			April 12, 2002
• Biosparge Testing of Existing Wells	100	April 15, 2002		August 13, 2002
• Phase 1 Well Installation	100	February 4, 2002		June 28, 2002
• Upgrade of GP-1/GP-3 Treatment System	100	April 8, 2002		July 9, 2003
• Sample Wells	100	June 17, 2002		July 12, 2002
• Evaluate Pre-Design Information /Develop Scope of Biosparge Remedy	100			November 22, 2002
• Install 2 Additional Wells (MW-67/68)	100	December 18, 2002		February 14, 2003
• Sample Wells MW-67 & MW-68				March 25/26, 2003
• Responses to EPA comments on Predesign Information Report	100	March 6, 2003		March 27, 2003
• EPA Meeting				April 17, 2003
• Closed Well T-1	100			May 12, 2003
• MW-67/68 Installation Report	100			May 23, 2003
• Responses to EPA comments on March 27, 2003 Responses	100	June 25, 2003		July 29, 2003
• Pre-Final (95%) RD Report	100	July 7, 2003		October 31, 2003
• Responses to EPA comments on 95% RD Report	100	April 12, 2004		May 27, 2004
• Submitted Due Diligence Request to Northrop	100			May 10, 2004
• Follow up Due Diligence Clarification to Northrop 6/11 Data Package	100			June 25, 2004
• Offer to Northrop for Property Purchase	100			October 1, 2004
• Sample 13 Wells and Submit Results	100	August 23, 2004		October 14, 2004
• Responses to EPA Comments on 95% RD Report	100	November 17, 2004		December 6, 2004
• Revised Property Purchase offer submitted to Northrop	100	December 22, 2004		December 22, 2004
• Prepare 100% RD Report	100	January 12, 2005		May 27, 2005
• Property Purchased	100			June 2005
• 100% Design Approved	100			July 7, 2005

**Glenn Springs Holdings Inc.
Hooker/Ruco Site Operable Unit 3
Hicksville, New York
July through September 2018**

Task and Activity	Percentage of Activity Completed	Start Date	Scheduled Completion Date	Completion Date
• Obtain Building Permits	100	July 11, 2005		November 10, 2005
• Arrange Contractors	100	January 2005		July 22, 2005
• Well Installation	100	September 13, 2005		April 28, 2006
• Biosparge System Installation	100	November 2005		May 2006
• Closure of On-Site and Off-Site Wells	100	November 2005		May 10, 2006
• OU-1 Soil Borings	100	November 2005		January 11, 2006
• Background Groundwater Sampling	100	March 27, 2006		June 14, 2006
• Pre-Start Sampling	100			October 24, 25, and 26, 2006
• Final Inspection	100			October 27, 2006
• Biosparge System Start-Up	100			October 27, 2006
• First Monthly Sampling	100			November 28 to 30, 2006
• Second Monthly Sampling	100			December 20 and 21, 2006
• Noise Survey	100			January 18, 2007
• 2007 First Quarterly Sampling	100			January 23 to 30, 2007
• Submission of Phase I Construction Documents	100			February 1, 2007
• 2007 Second Quarterly Sampling	100			April 18 to 27, 2007
• 2007 Third Quarterly Sampling	100			July 16 to 27, 2007
• 2007 Fourth Quarterly Sampling	100			October 8 to 18, 2007
• Evaluation/Recommendation for Design Modifications	100			January 15, 2008
• 2008 First Quarterly Sampling	100			January 22 to 28, 2008
• 2008 Second Quarterly Sampling	100			April 16 to 25, 2008
• 2008 Third Quarterly Sampling	100			July 15 to 18, 2008
• 2008 Fourth Quarterly Sampling	100			October 21 to 30, 2008
• Construction of North Fence Underground Components	100			December 23, 2008
• 2009 First Semi-Annual Sampling	100			April 7 to 14, 2009
• Response to USEPA Biosparge System Comments	100	August 27, 2009		September 23, 2009
• 2009 Second Semi-Annual Sampling	100			October 13 to 21, 2009
• Submittal of Biodegradation Supporting Information	100			November 30, 2009
• Submittal of Revised Schedule	100			February 3, 2010
• Submittal of PDB/HydraSleeve TM Evaluation	100			February 11, 2010
• Trailing Edge Proposal	100			March 15, 2010
• 2010 First Semi-Annual Sampling	100			May 3 to 25, 2012
• Distribution of RFP for Biosparge System Well Installation	100			June 25, 2010
• Contracted Well Driller	100			August 3, 2010
• 2010 Second Semi-Annual Sampling	100			November 15 to 29, 2010
• Install Biosparge System Wells	100	September 20, 2010		May 15, 2011

**Glenn Springs Holdings Inc.
Hooker/Ruco Site Operable Unit 3
Hicksville, New York
July through September 2018**

Task and Activity	Percentage of Activity Completed	Start Date	Scheduled Completion Date	Completion Date
• 2011 First Semi-Annual Sampling & Site Wide Event	100			April 7 to May 19, 2011
• Distribution of RFP for Biosparge System Expansion	100			May 4, 2011
• Receipt of Bids	100			June 17, 2011
• Submittal of PDB/HydraSleeve™ Evaluation	100			August 31, 2011
• USEPA Concurrence For Use of PDB Samplers	100			September 22, 2011
• Update QAPP	100	#####		October 24, 2011
• 2011 Second Semi-Annual Sampling	100			Nov. 30 to Dec. 1, 2011
• Revise Updated QAPP	100	December 6, 2011		January 3, 2012
• Address EPA Comments on revised updated QAPP and resubmit	100	February 17, 2012		April 13, 2012
• Construction of Remainder of Biosparge System	100	March 5, 2012		August 15, 2012
• 2012 First Semi-Annual Sampling	100			May 23 and 24, 2012
• Submit Interim Remedial Action Report	100			September 26, 2012
• Submit Electrical As-Built Drawings	100			October 10, 2012
• 2012 Second Semi-annual Sampling	100			October 24 to November 25, 2012
• 2013 First Quarter Sampling	100			January 8 to February 13, 2013
• Well Rehabilitation Works	100			March 8 to 29, 2013
• 2013 Second Quarter Sampling	100			April 24 to May 23, 2013
• 2013 Third Quarter Sampling	100			July 9 to 25, 2013
• 2013 Fourth Quarter Sampling	100			October 24 to November 7, 2013
• 2014 First Quarter Sampling	100			January 7 to 27, 2014
• 2014 Second Quarter Sampling	100			April 23 to May 15, 2014
• 2014 Third Quarter Sampling	100			July 2 to August 6, 2014
• 2014 Fourth Quarter Sampling	100			October 6 to November 11, 2014
• Responses to EPA Comments	100	December 10, 2014		December 19, 2014
• 2015 First Semi-Annual Sampling	100			April 6 to May 8, 2015
• 2015 Second Semi-Annual Sampling	100			October 6 to November 16, 2015
• 2016 First Semi-Annual Sampling	100			April 11 to June 2, 2016
• USEPA 5-year Review	100			September 7, 2016
• 2016 Second Semi-Annual Sampling	100			October 3 to November 2, 2016
• 2017 First Semi-Annual Sampling	100			April 25 to May 11, 2017
• 2017 Second Semi-Annual Sampling	100			October 2 to November 1, 2017
• 2018 First Semi-Annual Sampling	100			April 18 to May 23, 2018

Table 2

**2018 Summary of O&M Activities
Supplemental and Biosparge Systems
Hicksville, New York**

Date Observed	Description of Issue	Action Taken	Date of Action	Outcome of Action	Notes
12/7/17	Monthly Inspection	Monthly inspection performed	12/7/17	Monthly inspection completed successfully	Manual opening of IW-06D2 and IW-07D2 allows both wells to receive air. Both wells to be further monitored by CA RICH
12/13/17	Low flow alarms in IW-06D2 and IW-07D1	CA RICH on-site to troubleshoot	12/13/17	Actuators and flow meters in IW-06D2 and IW-07D1 appear to be functioning properly. However, air injections have not been successful	IW-06D1 and IW-07D2 are functioning properly. CA RICH to continue to monitor
1/12/2018	Major rain event	CA RICH on-site to pump out IW-17 and IW-18 vaults	1/12/2018	Water successfully pumped out of bottom of vault	
01/19/18	Monthly Inspection	Monthly inspection performed	01/19/18	Monthly inspection performed successfully	Attempts made to inject air into IW-06D2 and IW-07D1 with IR Compressor. Attempts were unsuccessful. CA RICH to continue to monitor. IW-15 actuators not responding to commands.
01/19/18	Atlas Copco Compressor due for maintenance	Atlas Copco on-site for PM Service	01/19/18	Service completed successfully	
01/19/18	IW-15 actuators not responding to commands	JVR on-site to replace actuator	01/26/18	IW-15D1 actuator replaced with IW-15 water actuator. IW-15D2 actuator repaired by JVR.	IW-15 functioning properly.
2/23/18	Monthly Inspection	Monthly inspection performed	2/23/18	Monthly inspection performed successfully	
2/26/18	Water meter due for upgrade. Alarm response in IW-06D1	SAKS Metering on-site to replace and upgrade water meter. IW-06D1 field investigated	2/26/18	Water meter successfully upgraded. Flow meter in IW-06D1 found to not be functioning correctly.	JVR scheduled to further investigate/replace flow meter on 3/1/18.
3/2/2018	Water in vaults	CA RICH pump out water from vault	3/2/2018	Water successfully pumped out of bottom of vault	
3/12/2018	Could not remotely log in	Went to site to turn system on	3/12/2018	System successfully started	
3/16/2018	Able to remotely log in, but screen was greyed out. System did not appear to be working	Went to site to check on system. System screen no longer grey, activated system.	3/16/2018	System successfully started	
3/19/2018	Remote Log-in problems/screen grey again	Repaired	3/19/2018	System successfully started	
3/27/2018	Remote Log-in problems/cannot log in	Went to site building and turned out system	3/27/2018	System successfully started	
3/28/2018	Monthly Inspection	Monthly inspection performed	3/18/2018	Monthly inspection performed successfully	Vault IW-8 corner has been compromised. Aarco asked to provide estimate to repair.

Table 2

**2018 Summary of O&M Activities
Supplemental and Biosparge Systems
Hicksville, New York**

Date Observed	Description of Issue	Action Taken	Date of Action	Outcome of Action	Notes
4/4/2018	Semi-annual groundwater sampling	install PDBs	4/6/2018-4/24/2018		
4/13/2018	Vault IW-8 northern western hinge broken	Aarco onsite to repair	4/13/2018	Vault successfully repaired	
4/19/2018	Semi-annual groundwater sampling	Collect groundwater samples	4/19/2018-4/26/2018	Collect samples and laboratory courier picks up samples	
4/26/2018	Routine Maintenance on Ingersoll Rand Compressor	Routine Maintenance conducted	4/26/2018	Maintenance successful	
5/4/2018	Monthly inspection	Inspect vaults and check system readings	5/4/2018	Inspection successfully completed	
5/7/2018	High water level alarm in IW-16	Go to vault and pump out water	5/7/2018	Water successfully pumped out of bottom of vault	
5/9/2018	High water level alarm in IW-16	Go to vault and pump out water	5/9/2018	Water successfully pumped out of bottom of vault	
5/21/18	high water level alarm in IW-21	Go to vault to pump out water	5/21/2018	No water in vault. Cleared alarm, but alarm keeps activating for high level even though no water in vault	Multiple alarms exist the same time as the high water level alarm for IW-21.
5/22/2018	Groundwater monitoring	sample wells	5/22/2018	Wells successfully sampled	
5/22/2018	Monthly Inspection	Inspect vaults and check system readings	5/22/2018	Inspection successfully completed	
5/23/2018	Backflow preventer test	test by certified contractor	5/23/2018	Test conducted and passed	
5/23/2018	Finish sampling all wells	Sample well	5/23/2018	Well successfully sampled	
5/29/2018	High water level alarm in IW-21	go to vault to pump out water	5/29/2018	No water in vault. Cleared alarm, but alarm keeps activating for high level even though no water in vault	Multiple alarms exist the same time as the high water level alarm for IW-21.

Table 2

**2018 Summary of O&M Activities
Supplemental and Biosparge Systems
Hicksville, New York**

Date Observed	Description of Issue	Action Taken	Date of Action	Outcome of Action	Notes
6/21/2018	Vault faults	Check vaults	6/21/2018	IW-21 is operating correctly	
6/22/2018	Air not injecting into certain wells	Switch to auxiliary air	6/22/2018	Air injection done with auxiliary, then switch back to main	
6/27/2018	Monthly inspection	Inspect vaults and check system readings	6/27/2018	Inspection successfully completed	IW-5 vault door needs repairs
6/29/2018	Air injection issues at IW2, 4, 5 and 22	Check actuators at IW2, 4, 5, and 22	6/29/2017	Actuators are not responding	Actuators require maintenance or replacement
7/2/2018	Routine maintenance on Atlas Copco Compressor	O&M activities conducted	7/2/2018	Most O&M activities completed; however, a broke part prevented completion of activities. New part ordered. To be completed July 3	
7/3/2018	Complete routine maintenance on Atlas Copco Compressor	Install broken part	7/3/2018	Compressor repaired	
7/6/2018	Alarms activated on system and building	Go to building to check on alarms	7/6/2018	Alarms reset	
7/9/2018	Alarms on compressor, buildings, vaults	check building alarm, compressor alarm, and vault alarms	7/9/2018	Building alarm is good-unknown why it was activated. Compressor alarm needs to be checked by Atlas Copco--scheduling visit. Injection wells vault IW-5 actuator is malfunctioning. Scheduling electrician	
7/11/2018	Troubleshoot actuators with Brendan	Go into vaults and remotely turn on and off	7/11/2018	Determined which water actuators worked; schedule electrician to replace bad air actuators with good water actuators	
7/20/2018	Monthly inspections	Inspect vaults and system	7/20/2018	Monthly inspection successfully completed	
7/20/2018	Bad air actuators to be replaced with good water actuators	Meet JVR electric at site and oversee the replacement of actuators	7/20/2018	Replaced 5 air actuators with 5 water actuators. Tested actuators and only one of the 5 is working.	Need to test actuators with loop calibrator.
7/23/2018	Annual alarm/security inspection	Meet Electronix at the site	7/23/2018	Alarm/security system operating properly	
7/26/2018	Actuators not responding properly	Go to site and look for Loop Calibrator. Wait for remote personnel to call in to help troubleshoot.	7/26/2018	Unable to test actuators with Loop Calibrator as personnel unable to help today. Will call electrician to schedule a day to troubleshoot with Loop Calibrator	JVR Electric tentatively scheduled for August 7th

Table 2

**2018 Summary of O&M Activities
Supplemental and Biosparge Systems
Hicksville, New York**

Date Observed	Description of Issue	Action Taken	Date of Action	Outcome of Action	Notes
8/10/2018	System won't start, dryer not operating properly as alarm is activated	Go to site and check on dryer	8/10/2018	Dryer was found to have a high temperature alarm and was off. Turn on the dryer and temperature dropped. Turned system on. System was on upon departure and dryer temperature was 57F.	
8/14/2018	Injection well vault IW-5 is cracked at the hinge	Aarco to go to the site to repair	8/14/2018	Vault repaired	One spring removed from each of the doors to relieve pressure off the hinge, which appears to be part of the reason for the failure.
8/15/2018	Actuators not operating properly	Electrician came out to site to troubleshoot with loop calibrator	8/15/2018	Turns out actuators are good, but the fuses are bad. Replaced fuses and actuators appear to be working. Still need to check IW-22 as we could not access as the gate was closed	Also checked actuators sitting inside building and found that we still have one functioning actuator remaining. This actuator has been labelled accordingly.
8/15/2018	Monthly inspection	Inspect vaults and system	8/15/2018	Inspection successfully completed	The air dryer appears to have a problem as the unit is registering high temperature. Need to keep an eye on it. Temperatures have been in the high 80s low 90s with high humidity--this may have played a role in the alarm being activated.
8/16/2018	IW-22 actuators not operating properly	Electrician to test with loop calibrator. Would have done yesterday, but did not have access	8/16/2018		
8/24/2018	Actuator in IW-20 needs repair	Meet electrician to repair	8/24/2018	Could not gain access as Grumman and Brian were on vacation.	Rescheduled for Friday August 31st
8/31/2018	Actuator in IW-20 needs repair	Meet electrician to repair	8/31/2018	Access was granted and the actuators replaced. Actuators are operated properly	The problem with the actuators was the fuse.
9/4/2018	Atlas Copco Compressor and air dryer maintenance by K&G Power system	To meet K&G	9/4/2018	K&G did not show. Rescheduled for 9/5	Already at site and waited for K&G. Called their office and was informed only after I called them that they would not be on site.
9/5/2018	Routine Maintenance on Atlas Copco Compressor & Trouble shoot air dryer as it is setting off alarms	K&G Power systems on-site for maintenance and troubleshooting	9/5/2018	Compressor maintenance successfully completed. Air dryer repaired--the in-line air filter was full and the water tank was full. Drained excess water and is now operating properly.	The air dryer should be checked monthly during the monthly system/vault inspection and drained of water and filter cleaned.
9/11/2018	Air dryer malfunctioning	Go to site and check on dryer	9/11/2018	Drain filter trap of water and debris. Turn back on. Seems to be operating properly.	
9/19/2018	Monthly inspection	Check all vaults and components in building on the checklist	9/19/2018	No issues	
9/26/2018	High water alarm in vault IW-16	Check on vault and clear alarm	9/26/2018	Little water in vault, likely from overnight rain event.	

Table 3

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe ⁺² (mg/L)
Base Wells							
MW-61I ⁽¹⁾	10/24/2006	NA	NA	NA	102	0.00	2.76
	10/25/2006	NA	NA	NA	112	0.41	3.04
	10/26/2006	5 UJ	5 U	2 J	133	0.00	2.49
	11/29/2006	5 U/5U	5 U/5 U	3 J/2 J	60	0.00	1.96
	12/21/2006	5 U/5 U	5 U/5 U	3 J/4 J	118	0.00	2.17
	1/24/2007	5 U	5 U	3 J	101	1.93	1.84
	4/19/2007	19	95	140	124	3.21	0.03
	7/20/2007	5 U	5 U	4	90	0.37	5.19
	10/11/2007	5 U	5 U	2 U	50	3.56	3.12
	1/24/2008	5 UJ	5 U	4.8	86	1.44	3.11
	4/23/2008	2 J	1 J	4	60	0.45	2.83
	7/16/2008	3.7 J	4.7 J	5.0 U	69	2.78	10.82
	10/28/2008	2 J	1 J	4	351	7.11	1.11
	4/8/2009	3.7 J	4.7 J	5.0 U	306	12.18	0.05
	10/15/2009	7.7	11	1.4 J	366	17.66	0.49
	5/10/2010	6.9	7.8 U	1.6 J	120	10.65	0.0
	1/20/2011	5.6/3.7 J	3.9 J/3.7 J	5.0 U/5.0 UJ	266	11.10	0.0
	4/19/2011	4.6 J/4.6 J	3.8 J/4.0 J	5.0 U/ 5.0	249	10.10	0.0
	11/30/2011	3.7 J	3.3 J	5.0 U	NM	12.81	NM
	5/23/2012	2.3 J	3.6 J	5.0 U	NM	NM	NM
	11/5/2012	4.4 J	4.8 J	5.0 U	111	11.23	3.99
MW-61D1 ⁽¹⁾	10/24/2006	NA	NA	NA	110	0.00	2.30
	10/25/2006	NA	NA	NA	107	0.65	3.74
	10/26/2006	5 UJ	5 U	3 J	109	0.00	2.99
	11/29/2006	5 U	5 U	5.7	54	0.00	1.92
	12/21/2006	5 U	5 U	3 J	90	0.00	2.59
	1/23/2007	5 U	5 U	3 J	54	1.21	1.84
	4/19/2007	27	130	200	79	6.66	0.26
	7/20/2007	5 U/5 U	5 U/2 J	4.0/4.0	83	0.44	3.30
	10/10/2007	5 U	5 U	1 J	26	3.39	4.20
	1/24/2008	5 U	5 U	3	78	1.33	3.21
	4/22/2008	5 U	5 U	2 U	60	0.41	2.91
	7/16/2008	5 UJ/5 UJ	5 U/5 U	2/2	87	2.35	2.13
	10/28/2008	2 J	1 J	2 U	335	3.75	0.21
	4/8/2009	3.9J /3.7 J	4.4 J/4.3 J	5.0 U/5.0 U	267	12.77	0.08
	10/15/2009	6.7	9.3	5.0 U	336	10.11	0.96
	5/10/2010	6.3	8.0 U	1.8 J	140	10.15	0.0
	1/20/2011	5.6	3.6 J	5.0 UJ	231	18.80	0.0
	4/19/2011	3.8 J	3.0 J	5.0 U	248	10.38	0.0
	11/30/2011	3.7 J	3.1 J	5.0 U	NM	13.21	NM
	5/23/2012	2.2 J	3.1 J	5.0 U	170	13.55	1.8
	11/5/2012	4.2 J	3.9 J	5.0 U	124	11.85	3.0

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe⁺² (mg/L)
MW-61D2 ⁽¹⁾	10/24/2006	NA	NA	NA	37	0.00	0.15
	10/25/2006	NA	NA	NA	27	1.42	5.46
	10/26/2006	150 J	450	5800	62	1.94	4.04
	11/29/2006	39	150	1500	110	11.12	1.91
	12/21/2006	130	490	3400	120	9.28	2.36
	1/23/2007	160	590	3100	131	>20	0.89
	4/23/2007	140	580 J	2000	361	>20	0.21
	7/23/2007	200	640	3500	71	13.45	1.34
	10/11/2007	62	210	610	300	11.71	0.21
	1/24/2008	26	140	46	326	>20	0.78
	4/22/2008	11	89	11	248	14.49	0.09
	7/15/2008	40 J	330	39	173	19.99	0.08
	10/27/2008	25	150	33	381	>20	0.18
	4/9/2009	110	360	450	319	17.47	1.95
	10/14/2009	99	300	19	155	16.29	2.80
	5/10/2010	120	360	240	224	19.51	0.0
	11/16/2010	78	360	380	55	8.75	-2
	4/7/2011	110/70	240/240	18 J/10 J	196	17.58	(2)
	5/23/2012	13 J	110	12	123	8.54	9
	5/2/2013	30	120	13	196	16.37	>5.0
	10/29/2013 ⁽⁵⁾	30	46	1.2 J	NM	NM	NM
	4/29/2014 ⁽⁵⁾	51	73	1.2 J	NM	NM	NM
	10/30/2014 ⁽⁵⁾	40 J	59 J	0.88 J	NM	NM	NM
	4/24/2015 ⁽⁵⁾	52	150	1.3 J	NM	NM	NM
	10/22/2015	11	18	2.0 U	87	12.28	5.0
	4/26/2016	39	51	2.0 U	69	5.76	0.35
	10/21/2016 ⁽⁵⁾	28	45	2.0UJ	NM	NM	0.27
	4/28/2017 ⁽⁵⁾	59	69	1.0U	NM	NM	NM
	10/19/2017 ⁽⁵⁾	62	55	1.0U	NM	NM	NM
	4/19/2018	85.4	57.1	1.0U	NM	NM	NM
MW-63D1 ⁽²⁾	5/24/2010	6.4 J	9.2	35	166	0.00	0.0
	5/1/2013	17	3.4 J	13	232	11.93	1.6
	10/24/2013	3.2 J	5.6	45	208	17.25	0.9
	4/24/2014	9.9	7.3	29	276	11.59	0.0
	7/17/2014	6.9	6	19	158	3.50	3.2
	10/21/2014	5.5	3.8 J	3.2 J	121	6.91	1.5
	4/22/2015	3.4 J	5.0 U	2.0 U	332	5.52	4.3
	10/20/2015	2.3 J	3.7 J	2.0 U	58	33.76	0.8
	4/28/2016	6.1	2.4 J	2.0 U	264	5.22	0.3
	10/19/2016	11	5.0U	2.0UJ	54	14.10	1.8
	5/11/2017	2.1	1.0U	1.0U	192	8.21	0.1
	11/1/2017	4.5	1.7	1.0U	262	5.05	0.1
	5/8/2018	3.29	2.39	1.0U	135	6.23	0.8

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe⁺² (mg/L)
MW-63D2 ⁽²⁾	5/24/2010	6.4 J	9.1	46	169	0.00	0.00
	5/1/2013	21	4.0 J	13	229	9.77	1.65
	10/24/2013	3.1 J	5.2	46	-17	11.03	3.86
	4/24/2014	7.9	8.1	29	202	7.95	0.11
	7/17/2014	5.6	6.1	21	125	2.70	3.10
	10/21/2014	5.1	3.7 J	3.2 J	167	6.48	1.20
	4/22/2015	2.7 J	5.0 U	2.0 U	280	6.09	2.30
	10/20/2015	2.4 J	3.6 J	2.0 U	53	35.80	2.97
	4/28/2016	4.9 J	1.6 J	2.0 U	256	5.26	0.07
	10/19/2016	5.0J	5.0U	2.0UJ	164	8.23	0.72
	5/11/2017 ⁽⁵⁾	3.5	1.1	1.0U	NM	NM	NM
	11/1/2017	4.7	1.8	1.0U	233	6.19	0.00
	5/8/2018	2.81	1.71	1.0U	184	4.62	4.59
MW-63S ⁽²⁾	5/21/2010	2.4 J	4.3 J	16	-111	0.00	0.06
	5/23/2013	10	7.8	76	74	4.53	1.33
	11/7/2013	9.4	7.7	5.0 U	7	8.91	3.16
	5/15/2014 ⁽⁵⁾	7	6	18	NM	NM	0.00
	8/6/2014	5.0 UJ	5.5	7.2	145	5.64	0.10
	11/14/2014	3.5 J	3.8 J	1.5 J	203	7.88	25.0
	5/8/2015	5.5	5.0 U	4.7 J	4	11.79	0.3
	11/9/2015 ⁽⁵⁾	3.3 J	2.5 J	2.0 U	NM	NM	NM
	5/18/2016 ⁽⁵⁾	1.9 J	5.0 U	2.0 U	NM	NM	NM
	11/2/2016	5.0UJ	5.0U	2.0UJ	201	9.74	0.3
	4/27/2017	1.0U	1.0U	1.0U	249	11.91	0.5
	10/18/2017	3.9	2.7	1.0U	75	8.82	0.0
	5/23/2018	4.68	4.33	1.0U	197	4.45	1.3
MW-63I ⁽²⁾	5/21/2010	5.4 J	8.3	47	-102	0.00	0.0
	5/23/2013	7.9	5.5	29	75	4.40	1.7
	11/7/2013	12	8.2	5.0 U	70	11.37	0.7
	5/15/2014	1.5 J	5.0 U	3.4 J	36	2.83	0.0
	8/6/2014	5.0 UJ	5.9	15	139	2.73	0.5
	11/14/2014	4.5 J	3.3 J	4.2 J	35	8.41	14.5
	5/8/2015	5.8	5.0 U	2.0 U	87	12.34	0.8
	11/9/2015	2.3 J	2.1 J	0.97 J	265	12.19	NM
	5/18/2016	2.7 J	5.0 U	2.0 U	231	13.55	0.4
	11/2/2016	5.0UJ	5.0U	2.0UJ	201	0.46	0.4
	4/27/2017	1.4	1.3	1.0U	247	8.67	NM
	10/18/2017	1.4	1.2	1.0U	210	5.44	0.0
	5/23/2018	1.76	0.78J	1.0U	203	5.96	0.3

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe ⁺² (mg/L)
MW-70D1 ⁽²⁾	4/11/2011	13	2.0 J	46	-135	0.69	4.0
	10/25/2012	2.0 J	5.0 U	12	NM	NM	NM
	2/4/2013	8.8	2.1 J	43	8	4.80	3.0
	4/26/2013	6.4	2.0 J	26	170	9.35	3.5
	7/23/2013 ⁽⁵⁾	5.3	1.3 J	16	NM	NM	NM
	10/24/2013	5.8	1.1 J	21	38	12.56	2.8
	1/23/2014	4.2 J	1.9 J	17	-109	5.06	0.0
	4/23/2014	4.1 J	1.2 J	20	76	10.11	0.0
	7/21/2014	6.6	1.0 J	16	48	9.35	0.0
	10/23/2014	4.3 J	0.92 J	19	30	6.24	2.7
	4/24/2015	3.3 J	5.0 U	11	107	14.38	0.0
	10/22/2015	3.5 J	1.6 J	8.8	62	6.00	1.6
	4/27/2016	1.5 J	5.0 U	5.1	-17	0.08	0.4
	10/20/2016 ⁽⁵⁾	5.0UJ	5.0U	4.7J	NM	NM	0.0
	4/28/2017	1.3J	1.0U	3.7J	-100	3.49	0.5
	10/17/2017	1.1	0.7J	3.2	-15	2.55	0.0
	4/26/2018	1.0U	1.0U	1.0U	62	1.50	>5
MW-70D2 ⁽²⁾	4/11/2011	47	56	1000	-122	0.66	2.0
	10/25/2012	32	26	190	-4	8.78	3.2
	2/4/2013	62	23	29	27	11.14	0.0
	4/26/2013	51	12	4.2 J	-19	7.89	>5.0
	7/23/2013	49	14	5.0 U	16	1.88	1.2
	10/24/2013	45	13	1.6 J	-17	3.95	0.1
	1/23/2014 ⁽⁵⁾	20	8.1	5.0 U	NM	NM	NM
	4/23/2014	11	3.8 J	5.0 U	211	11.88	0.0
	7/21/2014	11	1.4 J	5.0 U	-9	9.22	0.0
	10/23/2014	1.8 J	5.0 U	5.0 U	39	3.82	4.5
	4/24/2015	1.6 J	5.0 U	2.0 U	-89	8.70	0.2
	10/22/2015	5.0 U	5.0 U	2.0 U	-21	4.44	NM
	4/27/2016	5.0 U	5.0 U	2.0 U	108	0.00	0.0
	10/20/2016	5.0UJ	5.0U	2.0UJ	59	0.00	0.3
	4/28/2017	1.0U	1.0U	1.0U	-73	0.76	0.0
	10/17/2017	1.0U	1.0U	1.0U	29	0.00	0.0
	4/26/2018	1.0U	1.0U	1.0U	154	3.93	4.9
MW-72D1 ⁽²⁾	4/12/2011	13	1.9 J	21	-159	0.57	3.5
	10/25/2012	3.2 J	5.0 U	5.0 U	139	9.82	1.0
	2/4/2013	3.5 J	1.0 J	3.0 J	54	4.65	1.0
	5/1/2013	1.3 J	1.0 J	0.99 J	103	10.48	3.7
	7/23/2013	1.9 J	1.3 J	5.0 U	-11	2.37	>5.0
	10/24/2013	5.0 U	5.0 U	5.0 U	-80	4.60	4.6
	1/24/2014	5.0 U	5.0 U	5.0 U	36	10.78	NM
	4/23/2014 ⁽⁵⁾	1.3 J	1.6 J	2.9 J	NM	NM	NM
	7/21/2014	5.0 U	5.0 U	5.0 U	-21	10.13	0.0
	10/23/2014	0.74 J	5.0 U	5.0 U	37	4.41	2.6

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe⁺² (mg/L)
MW-72D1 ⁽²⁾ (cont'd)	4/24/2015	5.0 U	5.0 U	2.0 U	97	13.26	0.5
	10/22/2015	5.0 U	5.0 U	2.0 U	6	6.38	5.0
	4/28/2016	5.0 U	5.0 U	2.0 U	122	3.94	0.1
	10/20/2016	5.0UJ	5.0U	2.0UJ	105	9.86	0.0
	4/27/2017	1.0U	1.0U	1.0U	24	6.03	0.4
	10/19/2017	1.0U	1.0U	1.0U	38	0.00	NM
	4/26/2018	1.0U	1.0U	1.0U	150	3.92	NM
MW-72D2 ⁽²⁾	4/13/2011	330	5.3	5.0 U	-210	0.37	2.0
	10/25/2012	380	37	5.0 U	76	7.52	0.8
	2/4/2013	850	51	5.0 U	48	7.77	0.4
	5/1/2013	540	16	5.0 U	-32	9.69	>5.0
	7/23/2013	410	35	5.0 U	-134	2.03	3.7
	10/24/2013	480	25	5.0 U	-144	3.20	3.2
	1/24/2014	400	32	5.0 U	67	12.96	NM
	4/23/2014 ⁽⁵⁾	450	43	5.0 U	NM	NM	NM
	7/21/2014	500	48	0.59 J	-2	9.43	0.3
	10/23/2014	560	54	5.0 U	52	3.03	2.8
	4/24/2015	240	37	2.0 U	42	9.51	0.5
	10/22/2015	190	29	2.0 U	9	4.73	1.9
	4/28/2016	200	23	2.0 U	284	0.72	0.1
	10/20/2016	170	19	2.0UJ	-27	0.00	0.0
	4/27/2017	78	12	1.0U	-82	1.47	0.0
	10/19/2017	85	11	5.0U	93	8.24	0.0
	4/26/2018	57	7.03	1.0U	173	0.33	>5
MW-73D1 ⁽²⁾	4/25/2011	5.0 U	5.0 U	5.0 U	-155	2.56	3.5
	10/26/2012	5.0 U	5.0 U	2.6 J	7	11.93	5.0
	2/13/2013	5.0 U	5.0 U	5.0 U	296	9.91	0.0
	5/1/2013	5.0 U	5.0 U	5.0 U	-44	10.87	>5.0
	7/24/2013	1.9 J	5.0 U	5.0 U	-128	0.86	3.0
	10/25/2013	1.9 J	5.0 U	5.0 U	-51	2.94	0.3
	1/24/2014	5.0 U	5.0 U	5.0 U	143	14.42	NM
	4/24/2014	5.0 U	5.0 U	5.0 U	140	3.56	0.8
	7/18/2014	0.85 J	5.0 U	5.0 U	21	1.22	0.0
	10/30/2014	5.0 U	5.0 U	5.0 U	203	24.68	0.0
	4/24/2015	1.5 J	5.0 U	0.75 J	59	15.86	NM
	10/26/2015	2.5 J	5.0 U	2.0 U	63	8.44	0.1
	4/27/2016	2.9 J	5.0 U	2.0 U	134	1.70	0.9
	10/21/2016	4.3J	5.0U	2.0UJ	49	4.29	0.1
	4/28/2017	2.1J	1.0U	1.0U	16	2.23	1.6
	10/19/2017	1.7	0.5J	1.0U	22	1.61	0.0
	4/26/2018 ⁽⁵⁾	1.38/1.31	1.0U/1.0U	1.0U/1.0U	NM	NM	NM

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe ⁺² (mg/L)
MW-73D2 ⁽²⁾	4/25/2011	38	20	1400	-53	1.86	3.5
	10/26/2012	52	19	130	12	8.07	5.0
	2/13/2013	60	23	22	332	12.53	0.0
	5/1/2013	26	12	16	-95	7.63	>5.0
	7/24/2013	60	17	3.0 J	-29	1.95	3.6
	10/25/2013	13	6.1	0.62 J	-32	1.74	1.3
	1/24/2014 ⁽⁵⁾	6.3	5.7	1.1 J	NM	NM	NM
	4/24/2014	5.3	2.0 J	5.0 U	130	8.71	0.0
	7/18/2014	2.8 J	5.0 U	5.0 U	1	1.37	0.0
	10/30/2014	35	11	5.0 U	55	7.73	>5.0
	4/24/2015	8.5	5.0 U	2.0 U	-58	9.53	1.4
	10/26/2015	9.2	4.0 J	2.0 U	45	12.23	0.5
	4/27/2016	13	5.2	2.0 U	92	5.38	0.0
	10/21/2016	29	11	2.0UJ	24	0.93	0.0
	4/28/2017	34J	7.8J	1.0U	-37	3.86	0.0
	10/19/2017	7.2	2.5	1.0U	35	3.55	0.0
	4/26/2018	10.9	3.22	1.0U	NM	NM	NM
MW-75D1 ⁽²⁾	12/1/2011	51	23 J	960	NM	3.20	NM
	10/24/2012	32	18	1100	-35	9.41	1.6
	2/4/2013	39	16	1500	-48	6.09	0.0
	4/30/2013	25	7	510	1	11.07	4.1
	7/24/2013	17	6.3	120	-138	1.32	2.2
	10/24/2013	7	2.6 J	28	48	11.80	3.2
	1/24/2014	3.2 J	2.0 J	10	40	12.51	NM
	4/23/2014 ⁽⁵⁾	6.3	4.9 J	9	NM	NM	NM
	7/18/2014 ⁽⁵⁾	10	4.9 J	46	NM	NM	NM
	10/23/2014	9.4	2.8 J	66	47	3.23	>5.0
	4/22/2015	5.1	5.0 U	7.2	117	4.08	NM
	10/22/2015	5.0 U	5.0 U	2.0 U	191	6.86	5.0
	4/28/2016	4.2 J	2.4 J	2.0 U	194	0.00	0.1
	10/20/2016	5.0UJ	5.0U	2.0UJ	228	6.07	0.0
	4/27/2017	1.7	2.1	1.0U	-85	2.54	0.1
	10/18/2017 ⁽⁵⁾	NS	NS	NS	-61	0.00	0.0
	11/1/2017	3.7	3.3	1.0U	NS	NS	NS
	5/4/2018 ⁽⁵⁾	1.55/1.68	1.21/1.0U	1.0U/1.0U	NM	NM	NM
MW-75D2 ⁽²⁾	12/1/2011	44	88	680	NM	10.91	NM
	10/24/2012	34	63	600	-23	2.63	0.0
	2/4/2013	46	76	870	-55	16.33	0.0
	4/30/2013	47	58	530	26	12.20	3.9
	7/24/2013	56	87	560	-136	1.32	2.2
	10/24/2013	27	42	460	-92	5.56	0.0
	1/24/2014	26	45	330	0	12.93	NM
	4/23/2014 ⁽⁵⁾	31	47	260	NM	NM	NM
	7/18/2014	20	32	220	-37	10.65	0.0

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MW-75D2 ⁽²⁾ (cont'd)	10/23/2014	17 J	35 J	190 J	6	2.68	3.5
	4/22/2015	9.3	19	150	-82	4.19	1.4
	10/22/2014 ⁽⁵⁾	8.3	8.6	87	NM	NM	NM
	4/28/2016	1.5 J	5.0 U	78	-41	0.98	0.3
	10/20/2016	5.0UJ	5.0U	18J	-140	0.00	0.0
	4/27/2017	1.0U	1.6J	7.6J	-92	4.60	0.1
	10/18/2017	0.7J	0.7J	5	103	0.00	0.3
	5/4/2018	0.42J	0.46J	3.27	161	0.00	3.6
MW-76S ⁽²⁾	4/6/2011	5.0 U	5.0 U	2.4 J	-148	0.78	7.0
	10/25/2012	5.0 U	5.0 U	9.2	45	9.18	1.6
	2/6/2013	5.0 U	5.0 U	19	NM	NM	NM
	4/24/2013 ⁽⁵⁾	5.0 U	5.0 U	5.9	-70	5.76	1.25
	7/23/2013	0.95 J	5.0 U	5.0 U	-157	1.71	2.90
	10/25/2013	5.0 U	5.0 U	2.3 J	-1	4.33	0.56
	1/24/2014	1.0 J	5.0 U	2.0 J	125	12.79	0.0
	4/23/2014	2.0 J	5.0 U	5.0 U	228	4.29	0.0
	7/18/2014 ⁽⁵⁾	1.3 J	5.0 U	7.5	NM	NM	NM
	10/21/2014 ⁽⁵⁾	1.1 J	5.0 U	1.5 J	NM	NM	NM
	4/22/2015	5.0 U	5.0 U	2.0 U	236	5.52	2.2
	10/22/2015	1.4 J	5.0 U	2.0 U	42	5.77	4.8
	4/27/2016	1.4 J	5.0 U	2.0 U	180	2.26	0.0
	10/20/2016	5.0UJ	5.0U	2.0UJ	62	5.70	0.0
MW-76I ⁽²⁾	4/8/2011	5.0 U	5.0 U	1000	159	1.48	4.0
	10/25/2012	1.1 J	5.0 U	240	-23	8.51	4.25
	2/6/2013	5.0 U	5.0 U	81	4	16.35	2.2
	4/24/2013	5.0 U	5.0 U	50	-74	4.9	>5.0
	7/23/2013	5.0 U	5.0 U	13	0	2.14	2.9
	10/25/2013	5.0 U	5.0 U	5.1	4	3.56	0.5
	1/24/2014	0.70 J	5.0 U	3.2 J	-8	12.62	0.7
	4/23/2014	5.0 U	5.0 U	1.5 J	106	5.08	0.05
	7/18/2014 ⁽⁵⁾	0.74 J	5.0 U	0.96 J	NM	NM	NM
	10/21/2014	0.96 J	5.0 U	0.62 J	73	3.48	3.30
	4/22/2015	5.0 U	5.0 U	2.0 U	-216	4.43	NM
	10/22/2015	1.5 J	1.2 J	2.0 U	16	5.48	5.00
	4/27/2016	1.4 J	5.0 U	2.0 U	78	4.62	0.00
	10/20/2016	5.0UJ	5.0U	2.0UJ	17	0.27	0.00
	10/17/2017	1.6	1.5	1.0U	-28	0	0.62
MW-76D1 ⁽²⁾	4/11/2011	14	1.1 J	52	-123	0.98	2.0
	10/25/2012	6.2	5.0 U	52	-14	8.32	5.00
	2/6/2013	8.7	5.0 U	28	-16	10.47	3.00
	4/30/2013 ⁽⁵⁾	6.4	1.1 J	17	NM	NM	NM
	7/23/2013	4.6 J	1.0 J	13	-148	7.76	3.94

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MW-76D1 ⁽²⁾ (cont'd)	10/25/2013	5.6	1.1 J	15	97	11.27	0.08
	1/24/2014	4.2 J	1.4 J	9.9	-117	5.04	NM
	4/23/2014	4.1 J	5.0 U	9.5	153	5.70	0.05
	7/21/2014	5.0 U	5.0 U	3.8 J	143	6.96	1.00
	10/21/2014	6.6	1.1 J	7	73	2.87	2.60
	4/22/2015	3.1 J	5.0 U	5.4	17	4.26	1.20
	10/22/2015	4.1 J	1.3 J	3.9	-75	19.54	1.68
	4/27/2016	2.3 J	5.0 U	2.3	-77	1.00	0.00
	10/20/2016	2.1J	5.0U	2.0UJ	-171	0.00	0.00
	4/27/2017	1.2	1.0U	1.5	-57	1.61	0.00
	10/17/2017	1.9	0.6J	1.8	-34	0.00	0.00
	4/26/2018	0.55J	0.45J	1.0U	32	1.11	>5
MW-76D2 ⁽²⁾	4/8/2011	74	42	1100	-59	1.37	4.8
	10/25/2012	44	25	650	-19	8.71	0.0
	2/6/2013	63	25	1500	-76	16.45	0.0
	4/30/2013	51	12	19	15	14.13	2.2
	7/23/2013	52	27	5.0 U	-73	2.65	>5.0
	10/25/2013	45	19	4.9 J	13	5.07	5.1
	1/24/2014 ⁽⁵⁾	40	18	7.6	NM	NM	NM
	4/23/2014	78	17	5.0 U	164	6.23	0.18
	7/21/2014	80	18	0.79 J	91	8.53	0.49
	10/21/2014	26	18	0.72 J	103	7.54	>5.0
	4/22/2015	60	25	2.0 U	-66	4.25	NM
	10/22/2015	3.6 J	1.0 J	2.0 U	-60	4.10	5.00
	4/27/2016	2.8 J	1.0 J	2.0 U	51	5.90	0.00
	10/20/2016	5.0UJ	5.0U	2.0UJ	-23	1.06	0.00
	4/27/2017	4.1J	1.0J	1.0U	-23	1.14	0.38
	10/17/2017 ⁽⁵⁾	5.6	2.6	1.0U	NM	NM	NM
	4/26/2018 ⁽⁵⁾	25.8	13	1.0U	NM	NM	NM
MW-77D1	4/14/2011	1.6 J	1.7 J	6.2	-194	0.24	3.5
	10/25/2012	2.4 J	5.0 U	16	5	9.93	0.0
	2/6/2013 ⁽⁵⁾	7.8	5.0 U	24	NM	NM	NM
	4/26/2013	4.1 J	1.0 J	17	-64	8.03	3.52
	7/24/2013 ⁽⁵⁾	2.6 J/2.7 J	0.54 J/0.56 J	3.5 J/3.7 J	NM	NM	NM
MW-77D2 ⁽²⁾	4/14/2011	20	28	140	-111	0.72	4.0
	10/25/2012	5.2	12	80	-35	14.28	0.0
	2/6/2013 ⁽⁵⁾	17/17	11/11	99/100	NM	NM	NM
	4/26/2013	10	7.4	150	-141	5.39	>5.0
	7/24/2013	15	22	13	-79	2.06	1.46
	10/25/2013	40	18	5.0 U	27	11.71	1.17
	1/23/2014	66	28	1.4 J	-107	12.21	1.20
	4/24/2014	33	18	5.0 U	46	3.49	0.0
	7/18/2014	52	19	5.0 U	78	1.37	0.0

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MW-77D2 ⁽²⁾ (cont'd)	10/21/2014	150	21	5.0 U	174	3.71	>5.0
	4/24/2015	120	23	2.0 U	170	13.50	0.0
	10/23/2015 ⁽⁵⁾	57	21	0.74 J	NM	NM	NM
	4/27/2016	71	20	2.0 U	189	5.50	0.3
	10/21/2016	170	37	2.0UJ	99	8.05	0.1
	4/27/2017	140J	41J	1.0U	101	5.37	0.0
	10/18/2017	164	32	5.0U	101	0.46	0.1
	4/26/2018	131	25.6	1.0U	223	8.12	NM
MW-81D1 ⁽¹⁾	10/24/2006	NA	NA	NA	15	2.26	3.23
	10/25/2006	NA	NA	NA	-55	3.01	9.76
	10/26/2006	15 J	18	790	-25	0.00	10.12
	1/29/2007	8	9	690	-55	2.26	2.36
	4/19/2007	20/21	61/61	580/550	-128	0.00	2.06
	7/23/2007	54	190	490	-22	0.74	5.19
	10/9/2007	39	110	620	-77	3.08	4.98
	4/21/2008	14	54	2	-99	0.92	2.69
	10/28/2008	54/54	130/130	3/2	292	17.31	2.04
	4/7/2009	14	48	71	158	0.04	5.52
	10/15/2009	28	170	2.4 J	216	8.90	0.71
	5/6/2010	16	99	180	72	0.00	2.2
	11/17/2010	24	110	1.1 J	327	3.54	0.0
	4/7/2011	20	73	190	27	0.48	2.2
	11/30/2011	13	85	0.71 J	NM	12.58	NM
	5/23/2012	7.3 J	41	0.95 J	80	9.90	0.44
	11/5/2012	14	86	310	112	12.24	2.88
	5/2/2013 ⁽⁵⁾	44	190	5.0 U	NM	NM	NM
	10/28/2013	64	190	7.5	-137	8.41	0.68
	4/29/2014	97	220	1.8 J	146	8.94	0.00
	10/30/2014	96 J	190 J	6.3 J	87	19.39	0.12
	4/24/2015 ⁽⁵⁾	97	160	1.3 J	NM	NM	NM
	10/21/2015	82	120	2.0 U	43	7.42	1.35
	4/26/2016 ⁽⁵⁾	70	110	1.8 J	NM	NM	1.03
	10/21/2016	45	53	2.1J	138	12.43	1.74
	4/28/2017	70	91	1.8	138	10.66	0.10
	10/19/2017	54	92	5.0U	117	24.82	0.00
	4/19/2018	64.6	206	5.0U	194	13.14	4.76
MW-81D2 ⁽¹⁾	10/24/2006	NA	NA	NA	78	16.87	2.37
	10/25/2006	NA	NA	NA	73	17.96	0.40
	10/26/2006	5 J	26	4 J	93	15.00	0.74
	1/24/2007	6.2	32	5	-39	2.90	0.98
	4/18/2007	1 J	14	4 J	-110	0.00	2.71
	7/19/2007	15	130	40	48	14.10	1.48
	10/10/2007	13	81	37	35	7.45	9.39
	4/18/2008	2 J	20	2 U	81	4.23	0.45

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MW-81D2 ⁽¹⁾ (cont'd)	10/22/2008	6	32	2	107	>20	0.09
	4/7/2009	13	150	2.4 J	326	10.58	0.45
	10/14/2009	6.7	53	5.5	227	18.39	0.50
	5/10/2010	14	63	5.0 U	93	9.69	0.50
	11/16/2010	21/21	130/130	5.0 U/5.0 U	254	13.28	1
	4/7/2011	67	470	25 U	85	2.92	0.0
	11/30/2011	10	130	5.0 U	NM	11.01	NM
	5/23/2012	1.2 J	18	5.0 U	64	10.23	1.8
	11/5/2012	9.1	110	1.4 J	NM	NM	NM
	5/2/2013	1.9 J	11	5.0 U	46	17.28	3.9
	10/28/2013	1.4 J	12	5.0 U	NM	2.97	0.0
	4/29/2014	5.8	29	5.0 U	119	8.94	0.0
	10/30/2014	18	77	5.0 U	86	15.60	NM
	4/24/2015	150	170	2.0 U	-61	5.18	1.5
	10/21/2015	120	130	2.0 U	90	7.21	1.9
	4/26/2016	95	30	2.0 U	43	6.46	0.0
	10/21/2016 ⁽⁵⁾	43	13	2.0UJ	NM	NM	1.1
	4/28/2017	110J	30J	1.0U	37	2.76	0.2
	10/19/2017	76	13	5.0U	108	0.00	0.0
	4/19/2018	84.4	16.8	1.0U	241	1.41	2.2
MW-82D1 ⁽¹⁾	10/24/2006	NA	NA	NA	-119	1.93	6.14
	10/25/2006	NA	NA	NA	-154	0.00	9.36
	10/26/2006	8 J	4 J	1100	-142	2.77	6.32
	11/30/2006	8.8	7.9	1900	-158	0.00	1.86
	12/20/2006	8.2	15	2500	-149	0.00	1.98
	1/25/2007	50	130	5500	-145	1.21	1.94
	4/20/2007	5 U	5 U	860	-153	0.76	2.79
	7/25/2007	120	780 J	3600	95	15.15	2.58
	10/18/2007	19	24	430	125	0.73	5.25
	1/23/2008	14/14	48/49	1600/1600	-38	1.89	5.82
	4/25/2008	38	160	85	108	0.13	1.49
	7/18/2008	64	230	2.2	96	3.38	NM
	10/30/2008	110	230	790	309	<20	NM
	4/13/2009	47	160	1.7 J	328	5.35	0.21
	10/20/2009	21	84	5.0 U	231	8.08	0.26
	5/12/2010	16	64	5.0 U	53	7.01	0.0
	11/17/2010	110	63	3.2 J	307	8.00	NM
	5/19/2011	33/32	48/49	72/76	277	6.70	0.0
	12/1/2011	12	23	9.8	NM	14.35	NM
	5/23/2012	13 J	28	1.0 J	138	7.91	5.0
	10/26/2012	17	23	34	95	7.18	0.67
	5/1/2013 ⁽⁵⁾	14	18	41	NM	NM	NM
	10/25/2013 ⁽⁵⁾	14	18	12	NM	NM	NM
	4/25/2014	16	20	1.7 J	177	5.83	0.00
	10/30/2014	32 J	27 J	0.84 J	56	6.75	1.40

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MW-82D1 ⁽¹⁾ (cont'd)	4/24/2015	28	24	0.95 J	7	16.00	0.00
	10/21/2015	26	21	2.0 U	-31	11.27	1.59
	4/26/2016	37	21	2.0 U	98	9.29	1.08
	10/19/2016	24	22	2.0UJ	-7	12.23	0.14
	4/25/2017	31	18	1.0U	79	15.24	0.00
	10/17/2017	21	15	1.0U	100	14.37	0.00
	4/20/2018	NA	NA	NA	124	11.72	2.81
MW-82D2 ⁽¹⁾	10/24/2006	NA	NA	NA	-166	0.38	10.44
	10/25/2006	NA	NA	NA	-95	1.98	11.64
	10/26/2006	61 J	48	1300	-110	3.37	8.60
	11/30/2006	88	78	1300	-179	0.00	2.31
	12/20/2006	52	50	600	-178	0.00	0.34
	1/25/2007	150	110	180	-147	1.70	2.01
	4/20/2007	130	91	47	-183	0.61	1.91
	7/25/2007	320 J	170 J	80	-192	0.50	6.56
	10/18/2007	34	3 J	2100	-359	2.93	1.22
	1/23/2008	150	84	160	-147	1.51	4.74
	4/24/2008	25	18	5	-352	0	2.43
	7/18/2008	21	14	10	-472	0.00	16.32
	10/30/2008	110	230	790	-3	0.84	3.01
	4/13/2009	130	91	3.5 J	282	>20	0.05
	10/20/2009	86	56	96	-260	0.07	1.13
	5/12/2010	100	92	7.1	-137	0.00	1.0
	11/18/2010	71	74	8.3	276	0.83	1.2
	4/27/2011	90	58	5.0 U	-19	3.38	1
	12/1/2011	42	46	6.7	NM	11.74	NM
	5/23/2012	9.1 J	22	5.0 U	123	7.97	5
	10/26/2012	11	17	3.1 J	56	>20	3.2
	5/1/2013	7.5	5.0 J	5.0 U	238	8.33	>5.0
	10/25/2013	4.2 J	3.9 J	5.0 U	-127	11.22	0
	4/25/2014	3.0 J	3.9 J	5.0 U	73	3.38	0.13
	10/30/2014	6.2	4.7 J	5.0 U	76	0.88	0
	4/24/2015	7.3	5.0 U	2.0 U	132	15.04	0
	10/21/2015	6.0	5.3	2.0 U	-61	13.98	2.9
	4/26/2016	3.2 J	3.4 J	2.0 U	62	0.34	0.0
	10/19/2016	5.0UJ	5.0U	2.0UJ	-13	4.34	0.3
	4/25/2017	1.0U	1.0U	1.0U	89	24.76	0.2
	10/17/2017	1.0U	1.0U	1.0U	-24	2.38	0.1
	4/20/2018	0.36J	0.41J	1.0U	119	11.77	<5
MW-83D1 ⁽¹⁾	10/24/2006	NA	NA	NA	70	0.00	1.94
	10/25/2006	NA	NA	NA	-146	0.00	0.23
	10/26/2006	31	290	140	-64	2.06	0.06
	1/30/2007	44	320	130	6	1.74	0.01
	4/18/2007	5 U	29	7.7	-70	0.00	0.0

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe ⁺² (mg/L)
MW-83D1 ⁽¹⁾ (cont'd)	7/17/2007	130	360	310	-14	0.41	0.04
	10/12/2007	68	200	220	64	3.00	0.13
	1/22/2008	140	420	51	174	8.34	0.12
	4/17/2008	40	160	2	151	2.32	0.03
	7/15/2008	130 J	340	34	216	1.91	NM
	10/24/2008	110/110	200/200	2/2	291	8.31	0.04
	4/8/2009	80	190	4.3 J	274	1.44	0.09
	10/14/2009	110	260	3.8 J	361	13.17	0.41
	5/5/2010	96	240	260	284	3.50	NM
	11/15/2010	39	180	13	271	9.14	0.0
	4/7/2011	52 J	180 J	30 J	135	4.18	0.0
	11/30/2011	13	150	8.4	NM	>20	NM
	5/23/2012	9.8 J	120	1.2 J	132	12.32	0.0
	10/24/2012	25	180	5.0 U	276	7.22	0.0
	5/1/2013	30	290	1.4 J	212	19.10	2.9
	10/29/2013	45	200	9	NM	13.65	0.5
	4/29/2014 ⁽⁵⁾	40	210	2.1 J	NM	NM	NM
	10/30/2014	50 J	200 J	2.6 J	112	11.80	1.2
	4/24/2015	37	41	2.0 U	181	17.82	0.2
	10/22/2015	48	140	1.5 J	59	7.04	1.2
	4/26/2016	55	120	1.1 J	109	7.63	0.1
	10/21/2016	59	100	2.0UJ	128	10.05	0.1
	4/28/2017	63J	110J	1.2J	68	10.60	0.7
	10/20/2017	89	173	2.0UJ	116	15.19	0.0
	4/19/2018	38.8	133	5.0U	180	10.42	4.3
MW-83D2 ⁽¹⁾	10/24/2006	NA	NA	NA	241	>19.99	9.88
	10/25/2006	NA	NA	NA	179	>20	0.0
	10/26/2006	17	110	74	171	>20	0.06
	1/29/2007	13	75	22	249	13.20	0.0
	4/18/2007	3 J	23	1 J	97	0.00	0.0
	7/17/2007	7.9	43	1 J	289	>19.99	0.08
	10/15/2007	2 J	10	2 U	279	11.44	0.23
	1/22/2008	3	12	2 U	328	>20	0.14
	4/17/2008	5/4 J	22/21	2 U/2 U	295	>20	0.04
	7/15/2008	8.3 J	46	2 U	270	8.50	0.04
	10/21/2008	2 J	14	2 U	297	0.92	0.00
	4/8/2009	5.2	30	5.0 U	370	20.00	0.01
	10/13/2009	6	34	5.0 U	380	19.81	0.01
	5/6/2010	18	110	5.0 U	190	11.32	NM
	11/16/2010	6.2	42	5.0 U	370	16.45	0.0
	4/7/2011	17	96	5.0 U	249	17.54	0.0
	11/30/2011	12/12	98/150	5.0 U/8.1	NM	16.99	NM
	5/23/2012	1.8 J	21	5.0 U	79	12.67	0.0
	10/24/2012	7	71	5.0 U	225	9.81	0.0
	5/1/2013	28	74	5.0 U	162	12.34	1.0

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MW-83D2 ⁽¹⁾ (cont'd)	10/29/2013	40	170	5.0 U	-63	8.73	0.3
	4/29/2014	19	100	5.0 U	172	8.38	0.0
	10/30/2014 ⁽⁵⁾	43 J	150 J	5.0 U	NM	NM	NM
	4/24/2015	27	94	2.0 U	240	19.73	0.6
	10/22/2015 ⁽⁵⁾	53	120	2.0 U	NM	NM	NM
	4/26/2016	66	140	2.0 U	129	1.30	0.0
	10/21/2016 ⁽⁵⁾	93	170	2.0UJ	NM	NM	0.4
	4/28/2017	120J	190J	1.0U	97	4.25	0.5
	10/20/2017	104	156	2.0UJ	143	1.93	0.2
	4/19/2018	66	95.4	5.0U	223	6.97	3.7
MW-84D1 ⁽¹⁾	10/24/2006	NA	NA	NA	50	7.89	1.44
	10/25/2006	NA	NA	NA	86	8.03	1.37
	10/26/2006	47	350	430	78	6.51	1.19
	1/30/2007	66	640	150	160	7.53	1.24
	4/24/2007	32	560	11	282	>20	0.05
	7/24/2007	47	180	12	301	>20	0.05
	10/17/2007	15/15	48/56	2.1/2.4	304	8.81	0.62
	1/28/2008	19	32	2 U	303	>20	0.0
	4/24/2008	3 J	4 J	2 U	210	0.6	0.03
	7/17/2008	7.1	12	2 U	95	14.51	0.13
	10/29/2008	7	7	2 U	319	12.18	0.0
	4/9/2009	23	24	5.0 U	214	13.34	0.0
	10/19/2009	5.0 U	2.3 J	5.0 U	271	10.98	0.19
	5/12/2010	1.4 J	5.0 U	5.0 U	127	9.85	NM
	11/18/2010	3.9 J	3.5 J	5.0 U	207	7.94	NM
	4/27/2011	27/33	8.5/10	5.0 U/5.0 U	210	7.54	NM
	12/1/2011	94	35	0.52 J	NM	13.98	NM
	5/24/2012	4.3 J	4.4 J	5.0 U	185	10.30	0.00
	10/26/2012	80	54	5.0 U	72	7.29	1.08
	5/1/2013	81	29	5.0 U	250	12.62	0.72
	10/25/2013	83	35	5.0 U	23	12.48	1.50
	4/25/2014	41	30	5.0 U	134	6.86	0.26
	10/23/2014	51	25	5.0 U	110	7.66	2.00
	4/24/2015	54	21	2.0 U	169	14.19	0.00
	10/21/2015	50	23	2.0 U	-9	6.83	2.76
	4/26/2016	23	18	2.0 U	168	3.91	0.88
	10/20/2016	33	19	2.0UJ	-10	6.52	0.00
	4/25/2017	15	12	1.0U	89	17.68	0.00
	10/17/2017	21	11	1.0U	120	2.87	0.54
	4/19/2018	3.35	1.43	1.0U	162	7.29	2.57
MW-84D2 ⁽¹⁾	10/24/2006	NA	NA	NA	-90	4.69	1.53
	10/25/2006	NA	NA	NA	-47	2.84	0.27
	10/26/2006	19 J	92	140	-77	2.67	0.64
	1/29/2007	15	94	150	7	3.91	0.18

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MW-84D2 ⁽¹⁾ (cont'd)	4/24/2007	69	510	33	138	16.31	0.30
	7/24/2007	59	440	20	139	>20	0.21
	10/17/2007	16	170	7.1	34	4.68	0.23
	1/28/2008	27	250 J	5	97	9.91	0.79
	4/23/2008	11	100	2 U	6	3.96	0.09
	7/17/2008	20	130	2 U	13	14.05	0.27
	10/29/2008	21	110	2 U	160	8.33	0.25
	4/9/2009	15 J	74 J	5.0 U	70	10.15	0.08
	10/16/2009	14	110	5.0 U	135	14.65	1.45
	5/25/2010	23 J	190	1.6 J	-20	11.75	0.0
	11/18/2010	8.6	79	5.0 U	-21	0.79	0.0
	4/15/2011	1.0 J	9.4	5.0 U	-49	0.37	0.0
	12/1/2011	7.7	110	5.0 U	NM	11.00	NM
	5/24/2012	5.7	75	5.0 U	114	4.83	0.5
	10/26/2012	5.4	65	5.0 U	-28	3.14	5.0
	5/1/2013 ⁽⁵⁾	50	170	5.0 U	NM	NM	NM
	10/25/2013	21	120	5.0 U	-45	12.51	NA
	4/25/2014	28	150	5.0 U	21	1.72	0.26
	10/23/2014	19	100	5.0 U	54	3.49	1.30
	4/24/2015	22	92	2.0 U	89	8.35	0.00
	10/21/2015	20	78	2.0 U	-87	8.85	5.00
	4/26/2016 ⁽⁵⁾	15	58	2.0 U	NM	NM	NM
	10/20/2016 ⁽⁵⁾	15	59	2.0UJ	NM	NM	0.00
	4/25/2017	15	49	1.0U	69	0.48	0.00
	10/17/2017	7.2	27	1.0U	29	0.00	0.00
	4/19/2018	6.48	19	1.0U	59	3.40	5.00
MW-85S ⁽²⁾	4/20/2011	3.6 J	5.0 U	5.0 U	46	4.38	0.5
	10/26/2012	2.0 J	0.60 J	0.89 J	NM	NM	NM
	2/4/2013	2.5 J	5.0 U	5.0 U	NM	NM	NM
	4/30/2013	1.0 J	5.0 U	5.0 U	180	7.88	>5.0
	7/24/2013	5.0 U	5.0 U	5.0 U	12	1.39	0.4
	10/28/2013 ⁽⁵⁾	5.0 U	5.0 U	5.0 U	NM	NM	NM
	1/27/2014	0.97 J	5.0 U	5.0 U	112	11.37	NM
	4/24/2014	0.99 J	5.0 U	5.0 U	161	5.97	0.0
	7/17/2014	1.1 J	5.0 U	5.0 U	26	4.98	NM
	10/31/2014	2.3 J	5.0 U	5.0 U	20	9.22	1.4
	4/23/2015 ⁽⁵⁾	5.0 U	5.0 U	2.0 U	NM	NM	NM
	10/20/2015	0.75 J	5.0 U	2.0 U	-44	29.15	0.4
	5/18/2016 ⁽⁵⁾	5.0 U	5.0 U	2.0 U	NM	NM	NM
	10/18/2016	5.0UJ	5.0U	2.0UJ	-45	2.63	0.0

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MW-85I ⁽²⁾	4/20/2011	5.2	5.0 U	5.0 U	93	2.90	2.4
	10/26/2012	2.6 J	0.54 J	5.0 U	NM	NM	NM
	2/4/2013	1.9 J	5.0 U	5.0 U	NM	NM	NM
	4/30/2013	1.7 J	0.68 J	5.0 U	-57	5.63	>5.0
	7/24/2013	1.3 J	0.53 J	5.0 U	-139	0.42	0.1
	10/28/2013	2.7 J	5.0 U	5.0 U	-137	10.87	1.3
	1/27/2014	2.2 J	0.78 J	5.0 U	-61	10.43	NM
	4/24/2014	1.2 J	5.0 U	5.0 U	87	10.21	0.19
	7/17/2014	1.2 J	0.67 J	5.0 U	92	5.36	2.30
	10/31/2014	1.2 J	0.68 J	5.0 U	24	9.22	>5.0
	4/23/2015	2.4 J	5.0 U	2.0 U	59	6.55	0.34
	10/20/2015	2.2 J	5.0 U	2.0 U	-3	17.60	NM
	4/25/2016	3.4 J	2.5 J	2.0 U	237	15.03	NM
	10/18/2016	5.5	5.0U	2.0UJ	-124	0.33	0.00
	10/16/2017	4.4	3.6	1.0U	NM	0.00	0.00
MW-85D1 ⁽²⁾	4/20/2011	34/31	10/9.9	70/70	-33	3.75	(3)
	10/26/2012	5.0 U	5.0 U	9.9	18	>20	5.0
	2/4/2013	5.8	9.2	17	1	7.26	2.0
	4/30/2013	15	14	1.4 J	28	9.02	>5.0
	7/24/2013	9.5	17	4.4 J	-130	2.06	>5.0
	10/28/2013 ⁽⁵⁾	22	26	7.9	NM	NM	NM
	1/27/2014	25	21	12	-83	11.37	NM
	4/24/2014	30	23	5.7	50	6.35	0.0
	7/17/2014	20	26	7.2	39	4.68	2.0
	10/31/2014	13	16	5.0 U	-10	11.29	>5.0
	4/23/2015	4.6 J	14	2.0 U	120	11.43	0.0
	10/20/2015	3.3 J	9.7	2.0 U	33	21.24	0.0
	4/25/2016	4.1 J	10	2.0 U	186	10.27	0.0
	10/18/2016	6.9	12	2.0UJ	19	11.24	0.0
	4/25/2017 ⁽⁵⁾	4.4	4.9	1.0	NM	NM	NM
	10/16/2017	1.4	1.6	2.1	110	0.33	1.4
	4/20/2018	5.79	9.99	1.66	NM	NM	NM
MW-85D2 ⁽²⁾	4/20/2011	170	160	1100	-190	1.59	4.0
	10/26/2012	66	37	280	29	14.34	5.0
	2/4/2013	21/23	24/25	40/40	NM	NM	NM
	4/30/2013	9.2	21	25	155	7.90	>5.0
	7/24/2013	27	44	15	6	1.89	1.6
	10/28/2013	5.7	8.3	2.6 J	-98	3.03	0.7
	1/27/2014	11	21	2.3 J	-98	12.81	NM
	4/24/2014	5.9	13	0.93 J	36	9.77	0.09
	7/17/2014	6.8	14	5.0 U	13	2.82	2.60
	10/31/2014	4.7 J	12	5.0 U	-46	7.77	1.60
	4/23/2015	1.8 J	5.0 U	2.0 U	141	11.07	NM
	10/20/2015 ⁽⁵⁾	1.0 J	4.3 J	2.0 U	NM	NM	NM
	4/25/2016	2.3 J	5.4	2.0 U	174	5.79	0.24

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MW-85D2 ⁽²⁾ (cont'd)	10/18/2016	11	21	4.9J	27	9.45	NM
	4/25/2017	2.4	4.6	1.0U	109	4.88	0.00
	10/16/2017 ⁽⁵⁾	4.2	5.6	1.0U	NM	NM	NM
	4/20/2018	4.17	8.04	1.0U	90	8.75	NM
MW-86D1 ⁽²⁾	4/18/2011	2.7 J	5.0 U	14	-107	0.74	2.0
	10/24/2012	2.4 J	0.66 J	36	67	>20	0.68
	2/6/2013	6.3	5.0 U	44	87	14.5	1.0
	4/29/2013	6	1.5 J	62	135	5.99	2.5
	7/24/2013	3.1 J	1.3 J	24	-103	2.61	0.0
	10/29/2013 ⁽⁵⁾	5	1.8 J	78	NM	NM	NM
	1/23/2014	6.7	1.6 J	150	27	14.90	NM
	4/29/2014	8.2	1.3 J	160	25	3.56	0.1
	7/17/2014	9.5	0.89 J	180	-102	4.35	3.0
	10/31/2014	13	1.3 J	110	39	6.42	0.0
	4/24/2015	6.4	5.0 U	33	-37	7.48	0.1
	10/26/2015	3.0 J	5.0 U	2.0 U	-59	10.56	0.6
	4/28/2016	2.3 J	5.0 U	2.0 U	56	0.46	0.2
	10/21/2016	5.0UJ	5.0U	2.0UJ	87	1.30	0.1
	4/28/2017	1.1J	1.0U	1.0U	46	6.08	0.1
	10/20/2017	1.2	1.0J	1.0U	175	11.97	0.0
	4/24/2018	1.61	1.55	1.0U	126	0.00	>5
MW-86D2 ⁽²⁾	4/18/2011	19	280	5.0 U	-107	1.24	3.0
	10/24/2012	8.2	170	5.0 U	-115	2.49	0.39
	2/6/2013	17	370	0.54 J	-45	13.05	2.0
	4/29/2013	17	320	0.51 J	-64	5.44	3.4
	7/24/2013	13	270	5.0 U	-165	0.93	1.8
	10/29/2013	10	200	5.0 U	-43	4.30	0.0
	1/23/2014	14	240	5.0 U	-101	12.18	0.0
	4/29/2014	17	230	5.0 U	168	5.83	0.0
	7/17/2014 ⁽⁵⁾	15	170	0.79 J	NM	NM	NM
	10/31/2014	12	180	5.0 U	39	6.63	0.7
	4/24/2015	9.9	130	2.0 U	-89	10.90	0.0
	10/26/2015	7.4	83	2.0 U	-59	8.69	0.1
	4/28/2016	9.8	58	2.0 U	24	2.12	0.5
	10/21/2016	12	62	2.0UJ	-77	0.00	0.0
	4/28/2017	28J	71J	1.0U	-125	1.35	0.5
	10/20/2017	29	150	2.0U	-10	0.00	0.0
	4/24/2018	11	153	5.0U	NM	NM	NM
MW-87D1 ⁽¹⁾	10/24/2006	NA	NA	NA	234	0.70	0.17
	10/25/2006	NA	NA	NA	221	0.00	0.35
	10/26/2006	96 J	320	230	226	2.63	0.05
	1/24/2007	74	410	220	248	0.78	0.10
	4/17/2007	56	470	160	169	0.00	0.14

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MW-87D1 ⁽¹⁾ (cont'd)	7/17/2007	83	400	190	223	0.44	0.09
	10/8/2007	37	190	190	203	4.39	0.40
	4/16/2008	52	240	4	322	8.35	0.05
	10/21/2008	99	360	10	463	>20	0.00
	4/7/2009	10	22	5.0 U	289	8.62	0.00
	10/13/2009	100	410	16	379	16.18	0.17
	5/3/2010	170/170	360/330	41/44	282	5.74	0.0
	11/29/2010	5.0 U/3.8 J	4.8 J/17	5.0 UJ/5.0 UJ	192	2.75	0.0
	4/19/2011	150	420	250	300	3.72	0.0
	11/30/2011	95	300	3.2 J	NM	13.98	NM
	5/24/2012	73 J	270	75	149	11.51	1.4
	11/5/2012	53	290	2.1 J	105	>20	1.6
	5/2/2013 ⁽⁵⁾	43	160	1.4 J	NM	NM	NM
	10/28/2013	26	36	5.0 U	-67	13.76	0.1
	4/29/2014	88	58	2.2 J	201	8.53	0.0
	7/21/2014	140	22	5.0 U	177	13.90	1.4
	10/31/2014	150	19	5.0 U	123	12.91	1.3
	4/24/2015	130	23	2.0 U	-75	19.54	1.7
	10/22/2015	130	18	2.0 U	179	8.49	3.8
	4/26/2016	99	11	2.0 U	71	9.20	0.2
	10/21/2016	66	10	2.0UJ	168	9.77	0.5
	4/26/2017	69	12	1.0U	163	12.35	0.4
	10/19/2017	49	4.3	1.0U	215	31.89	0.0
	4/19/2018	49	9.14	1.0U	238	17.12	2.9
MW-87D2 ⁽¹⁾	10/24/2006	NA	NA	NA	212	4.00	0.08
	10/25/2006	NA	NA	NA	137	6.68	0.09
	10/26/2006	13	77	5 U	226	4.53	0.02
	1/24/2007	25	96	5 U	131	3.64	0.25
	4/17/2007	14	56	5 U	106	3.89	0.09
	7/16/2007	16	54	2 U	145	3.31	0.07
	10/9/2007	14	32	2 U	287	7.45	0.12
	4/16/2008	12	23	2 U	288	5.39	0.01
	10/21/2008	17	31	2 U	440	9.66	0.00
	4/7/2009	76	370	5.0 U	346	9.90	0.06
	10/13/2009	15	43	5.0 U	341	5.30	0.26
	5/5/2010	18	55	5.0 U	222	4.15	NM
	11/15/2010	35	470	2.7 J	397	12.41	0.0
	4/18/2011	22	75	5.0 U	234	3.46	0.0
	11/30/2011	18	110	5.0 U	NM	11.08	NM
	5/24/2012	16 J/15 J	180/180	5.0 U/5.0 U	NM	NM	2.1
	11/5/2012	25	170	5.0 U	86	>20	1.0
	5/2/2013	35	170	5.0 U	312	15.02	2.2
	10/28/2013	150	150	5.0 U	9	4.86	0.4
	4/29/2014	200	110	5.0 U	160	5.63	0.0
	7/21/2014	420	98	5.0 U	206	7.98	0.0

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Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe⁺² (mg/L)
MW-87D2 ⁽¹⁾ (cont'd)	10/31/2014	380	120	5.0 U	149	10.72	3.1
	4/24/2015	300	100	2.0 U	172	14.19	2.8
	10/22/2015	470	150	2.0 U	184	7.70	0.5
	4/26/2016	420	170	5.0 U	231	3.15	0.5
	10/21/2016 ⁽⁵⁾	NA	NA	NA	168	3.61	NM
	4/26/2017	940	120	1.0U	154	4.60	0.1
	10/19/2017	909	165	20U	199	2.83	0.0
	4/19/2018 ⁽⁵⁾	834	64.4	20U	NM	NM	NM
MW-88D1 ⁽¹⁾	10/24/2006	NA	NA	NA	-43	0.00	11.04
	10/25/2006	NA	NA	NA	-13	0.00	10.20
	10/26/2006	39 J	9	58	33	3.36	6.56
	1/30/2007	36	7	74	-45	1.16	2.01
	4/19/2007	32	13	330	172	11.88	1.84
	7/26/2007	37	28 J	1500	232	9.48	0.74
	10/16/2007	66	270	1100	3	0.02	5.47
	4/25/2008	20	27	310	225	5.95	0.52
	10/30/2008	40	29	320	339	>20	0.00
	4/13/2009	27	17	410	205	16.71	0.31
	10/21/2009	18/14	24/24	510/330	253	>20	0.47
	5/11/2010	28	32	320	177	19.00	0.50
	11/17/2010	14	20	440	366	13.04	0.0
	4/15/2011	19	19	160	184	14.39	0.0
	12/1/2011	15	20	11	NM	17.16	NM
	5/24/2012	5.4 J	14	11	65	8.82	0.0
	10/26/2012	12	17	8.2	83	10.88	1.15
	5/1/2013	5.4	6.8	0.92 J	202	13.77	1.22
	10/28/2013 ⁽⁵⁾	12	12	3.2 J	NM	NM	NM
	4/25/2014	8.7	14	1.1 J	197	8.44	0.06
	10/30/2014	12 J	26 J	3.1 J	82	12.59	0.31
	4/24/2015	19	26	2.1	150	14.59	NM
	10/21/2015	16	23	2.0 U	31	9.74	5.00
	4/26/2016	14	17	1.2 J	136	9.45	0.36
	10/19/2016	21	14	2.0UJ	29	12.12	0.00
	4/25/2017	14	4.9	1.0U	63	6.65	0.45
	10/17/2017	11	5.4	1.4	143	17.94	0.00
	4/20/2018	10.1	3.8	0.51J	163	16.54	1.43
MW-88D2 ⁽¹⁾	10/24/2006	NA	NA	NA	-282	1.44	18.96
	10/25/2006	NA	NA	NA	-253	1.97	11.40
	10/26/2006	140 J	180	3200	-212	0.00	NM
	1/25/2007	180/190	180/190	3400/2900	-315	0.82	0.16
	4/19/2007	390	330	1200	-219	0.37	2.17
	7/26/2007	97/94	57 J/56 J	2000/1800	-333	0.44	1.21
	10/16/2007	41	25	31	-291	3.04	9.39
	4/25/2008	280 J	130	230	40	8.02	2.65

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MW-88D2 ⁽¹⁾ (cont'd)	10/31/2008	250	83 J	230	45	8.94	2.70
	4/14/2009	200	86	59	41	9.94	0.98
	10/20/2009	47	43	130	-3	4.67	4.49
	5/11/2010	130	85	81	-5	5.70	0.50
	1/20/2011	56	22	160 J	232	5.58	0.00
	4/19/2011	27	10	170	-585	3.35	0
	12/1/2011	24	12	110	NM	9.81	NM
	5/24/2012	1.7 J	1.7 J	91	22	5.73	0
	10/26/2012	1.7 J	0.82 J	5.0 U	NM	NM	NM
	5/1/2013	14	17 J	38 J	154	11.30	1.56
	10/28/2013	5.0 U	5.0 U	5.0 U	52	12.83	0.46
	4/25/2014	5.0 U	5.0 U	0.85 J	62	2.83	0.00
	10/30/2014	19 J	16 J	5.0 U	91	14.22	0.86
	4/24/2015	15	11	2.0 U	26	8.59	NM
	10/21/2015	15	9.7	2.0 U	-44	9.18	5.00
	4/26/2016	9.2	8.3	2.0 U	67	1.56	0.0
	10/19/2016 ⁽⁵⁾	NA	NA	NA	-16	0.95	NM
	4/25/2017	13	11	1.0U	123	8.05	0.3
	10/17/2017	17	16	1.0U	-51	0.00	0.1
	5/4/2018	41.5	34.1	0.44	NM	NM	NM
MW-89D1 ⁽²⁾	4/21/2011	37	47	63	-142	1.57	6.0
	10/24/2012	2.9 J	5.0 U	6.7	17	9.68	0.0
	2/6/2013	20	10	25	-70	8.99	0.0
	4/29/2013	12	8.3	60	-125	5.49	3.8
	7/24/2013	6.9	3.1 J	31	-198	0.43	1.8
	10/28/2013	6.2	2.8 J	51	-52	2.56	0.5
	1/27/2014	15	14	72	239	12.43	NM
	4/24/2014	7.2	3.5 J	22	-88	3.67	0.0
	7/17/2014	17	7.3	19	-45	2.42	3.6
	10/31/2014	37	23	4.6 J	51	19.08	>5.0
	4/23/2015	37	26	6.9	101	7.52	NM
	10/20/2015	12	8.2	4.3	21	22.43	1.5
	4/25/2016	8.9	12	4.2	-10	2.00	0.1
	10/18/2016	18	20	7.9J	-21	0.00	0.2
	4/25/2017 ⁽⁵⁾	16	19	9	NM	NM	NM
	10/16/2017	17	14	3.8	69	1.46	0.1
	4/20/2018 ⁽⁵⁾	16.8	18.4	4.8	NM	NM	>5
MW-89D2 ⁽²⁾	4/21/2011	27	16	24	-154	2.43	1.0
	10/24/2012	1.7 J	2.4 J	21	-95	10.73	0.0
	2/6/2013	5	4.6 J	20	-122	10.05	0.0
	4/29/2013	1.2 J	1.9 J	26	-244	4.49	3.0
	7/24/2013	1.1 J	2.1 J	12	-250	0.75	2.7
	10/28/2013	1.6 J	2.4 J	13	-63	9.45	0.8
	1/27/2014 ⁽⁵⁾	2.7 J	4.0 J	12	NM	NM	NM

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MW-89D2 ⁽²⁾ (cont'd)	4/24/2014	1.8 J	2.7 J	6.1	-27	4.26	0.0
	7/17/2014	3.9 J	5.6	3.7 J	-40	2.13	2.0
	10/31/2014	5.8	9.4	6.5	6	12.01	1.8
	4/23/2015 ⁽⁵⁾	10	13	2.3	NM	NM	NM
	10/20/2015	5.7	9.4	2.0 U	-72	19.70	2.2
	4/25/2016	6.7	6.0	2.0 U	-30	0.27	0.4
	10/18/2016	13	8.3	2.0UJ	-119	0.66	0.0
	4/25/2017	8.4	6.6	1.0U	134	20.49	0.0
	10/16/2017	10	6.5	1.0U	82	1.03	0.0
	4/20/2018	6.89	5.31	0.53J	105	1.24	>5
MW-90D1 ⁽²⁾	4/25/2007	110	44	6300	-100	0.93	2.30
	4/13/2011	29	12	4100	-103	0.34	NM
	10/25/2012 ⁽⁵⁾	2.0 J	5.0 U	810	NM	NM	NM
	2/6/2013 ⁽⁵⁾	27	6.7	2500	NM	NM	NM
	4/30/2013 ⁽⁵⁾	3.9 J	2.3 J	780	NM	NM	NM
	7/23/2013 ⁽⁵⁾	32	16	290	NM	NM	NM
	10/25/2013 ⁽⁵⁾	22	13	84	NM	NM	NM
	1/23/2014 ⁽⁵⁾	17	18	1600	NM	NM	NM
	4/23/2014 ⁽⁵⁾	42	24	600	NM	NM	NM
	7/18/2014 ⁽⁵⁾	33	11	27	NM	NM	NM
	10/21/2014 ⁽⁵⁾	16	9.9	37	NM	NM	NM
	4/24/2015 ⁽⁵⁾	25	9.6	3.0	NM	NM	NM
	10/23/2015 ⁽⁵⁾	23	9.5	1.9 J	NM	NM	NM
	4/27/2016 ⁽⁵⁾	5.0 U	8.4	2.0 U	NM	NM	NM
	10/21/2016 ⁽⁵⁾	21	9.6	2.0UJ	NM	NM	NM
	5/11/2017 ⁽⁵⁾	30	8.2	1.0U	NM	NM	NM
	10/19/2017 ⁽⁵⁾	17	5.8	0.6J	NM	NM	NM
	4/26/2018 ⁽⁵⁾	14.8	5.78	1.0U	NM	NM	NM
MW-90D2 ⁽²⁾	4/25/2007	46	220 J	49	-47	1.38	1.76
	5/17/2010	26	68	2.1 J	-112	0.00	2.5
	4/14/2011	33	51	1.2 J	12	4.03	1.0
	2/6/2013 ⁽⁵⁾	120	37	3.1 J	NM	NM	NM
	4/30/2013 ⁽⁵⁾	57	25	1.8 J	NM	NM	NM
	7/23/2013 ⁽⁵⁾	43	29	5.0 U	NM	NM	NM
	10/25/2013 ⁽⁵⁾	44	23	5.0 U	NM	NM	NM
	1/23/2014 ⁽⁵⁾	39	25	2.9 J	NM	NM	NM
	4/23/2014 ⁽⁵⁾	37	26	1.5 J	NM	NM	NM
	7/18/2014 ⁽⁵⁾	22	22	5.0 U	NM	NM	NM
	10/21/2014 ⁽⁵⁾	6.1	3.5 J	5.0 U	NM	NM	NM
	4/24/2015 ⁽⁵⁾	26	21	2.0 U	NM	NM	NM
	10/23/2015 ⁽⁵⁾	74	23	2.0 U	NM	NM	NM

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MW-90D2 ⁽²⁾ (cont'd)	4/27/2016 ⁽⁵⁾	27	11	2.0 U	NM	NM	NM
	10/21/2016 ⁽⁵⁾	6	6.9	2.0UJ	NM	NM	NM
	4/27/2017 ⁽⁵⁾	11	8.2	1.0U	NM	NM	NM
	10/19/2017 ⁽⁵⁾	12	6.6	1.0U	NM	NM	NM
	4/26/2018 ⁽⁵⁾	13	5.1	1.0U	NM	NM	NM
Voluntary Wells							
MW-52S	3/13/2007	25	19	2400	5	1.64	1.66
MW-52I	3/14/2007	14	5	6	259	5.85	0.04
MW-52D	3/14/2007	410	39	5 U	226	3.07	0.11
MW-58D	10/26/2006	20	120	5 U	21	2.42	4.30
	5/18/2010	18	47	5.0 U	30	0.00	1.8
	11/21/2011	8.6	56	5.0 U	74	0.30	NR
	5/23/2013	15 J	110	5.0 U	167	5.94	2
	11/14/2014 ⁽⁵⁾	500 U	6500	500 U	NM	NM	NM
	6/2/2016	28	6300	2.0 U	-44	9.46	0.0
	11/2/2016	38J	5000	2.0U	-12	0.00	0.1
	4/26/2017 ⁽⁵⁾	51	5200	1.0U	NM	NM	NM
	10/17/2017 ⁽⁵⁾	59	3670	50U	NM	NM	NM
	4/24/2018 ⁽⁵⁾	56	2370	50U	NM	NM	NM
MW-58D1	10/26/2006	20	150	5 U	-101	2.58	8.80
	5/19/2010	18	44	5.0 U	-50	0.00	2.2
	11/21/2011	2.5 J	20	5.0 U	-48	0.52	NR
	5/23/2013 ⁽⁵⁾	12 J	73	5.0 U	NM	NM	NM
	11/14/2014 ⁽⁵⁾	250 U	4300	250 U	NM	NM	NM
	6/2/2016	34	5800	2.0 U	-25	10.58	0.1
	11/2/2016	32J	4400	2.0U	46	0.00	1.6
	4/26/2017	51	4600	1.0U	-96	NM	0.0
	10/17/2017 ⁽⁵⁾	60	3300	50U	NM	NM	NM
	4/24/2018	59	2300	50U	NM	NM	NM
MW-58D2	10/25/2006	19 J	120	5 U	-198	0.00	5.16
	4/29/2013	13	74	5.0 U	-81	7.70	3.87
	10/24/2014	20	4900	5.0 U	-10	20.87	0.00
	5/18/2016	38	7600	2.0 U	47	9.57	0.22
	10/19/2016	37	3200	2.0UJ	-46	0.00	0.72
	5/11/2017 ⁽⁵⁾	44	2400	1.0U	NM	NM	0.00
	11/1/2017	83	4100	1.0U	64	1.69	0.52
	5/22/2018 ⁽⁵⁾	55	1910	50U	NM	NM	4.62
MW-59D1	10/25/2006	10 J	32	5 U	-20	0.58	3.24
	11/29/2011	3.5 J	12	5.0 U	-43	0.30	NR
MW-59D2	10/25/2006	11 J	40	5 U	-99	0.47	2.00
	11/29/2011	2.5 J	8.1	5.0 U	-128	0.10	NR

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	5/18/2016 ⁽⁵⁾	5.0 U	5.5	2.0 U	NM	NM	NM
	10/19/2016	5.0U	5.7	2.0UJ	-137	1.01	0.14
	4/26/2017	1.0U	4.7	1.0U	-114	2.52	0.00
	10/19/2017	0.6J	4.4	1.0U	-64	1.59	0.14
	4/24/2018 ⁽⁵⁾	1.0U/1.0U	3.97/3.92	1.0U/1.0U	NM	NM	NM
MW-59D	10/26/2006	10	58	5 U	-108	0.00	2.65
	11/29/2011	5.3	13	5.0 U	49	0.35	NR
MW-60S	5/23/2013	45	150	5.0 U	-233	4.74	>5.0
MW-60I	5/23/2013	43	200	5.0 U	-93	3.77	>5.0
MW-60D	5/23/2013	64	99	5.0 U	-204	4.60	2.43
MW-60D1	4/30/2013	1.6 J	26	5.0 U	-108	5.84	>5.0
MW-61S	10/19/2009	7.4	10	5.0 U	372	>20	0.02
	5/10/2010	5.4	8.1 U	3.5 J	100	10.95	0.0
MW-62I	5/16/2007	5.1	1 J	3 J	59	0.00	0.69
	5/25/2010	5.1 J	5.0 U	4.2 J	14.8	0.00	4.2
	11/16/2015 ⁽⁵⁾	14	3.4 J	8.9	NM	NM	2.5
	10/18/2017	13	2.9	7.9	145	0.00	0.0
MW-62D	5/16/2007	5 U	5 U	5 U	-125	0.00	0.38
	5/25/2010	2.4 J	8.2	8	-200	0.00	6.2
	11/16/2015	2.5 J	2.0 J	2.3	116	10.94	0.0
	10/18/2017	1.5	2.2	3.7	-25	0.00	0.0
MW-64S ⁽²⁾	4/26/2007	3 J	2 J	8.7	-114	0.00	2.4
	5/24/2010	1.5 J	5.0 U	2.1 J	-98	0.00	4.0
MW-64I ⁽²⁾	4/26/2007	5	3 J	16	-121	0.00	1.9
	5/24/2010	5.0 UJ	5.0 U	12	-110	0.00	4.0
MW-64D ⁽²⁾	4/26/2007	5.1	4 J	14	-115	0.00	2.0
	5/24/2010	5.0 UJ	5.0 U	11	-107	0.00	2.3
MW-66D2 ⁽²⁾	4/25/2013	100	110	5.0 U	-44	6.58	0.2
	10/29/2013	43	58	5.0 U	-111	3.88	0.3
	4/25/2014	47	61	5.0 U	53	4.55	0.7
	10/27/2014	22	25	5.0 U	166	3.42	2.8
	4/23/2015	10	15	2.0 U	161	13.98	NM
	10/21/2015 ⁽⁵⁾	5.8	10	2.0 U	NM	NM	NM
	4/25/2016	2.9 J	8.0	2.0 U	-4	13.29	0.2
	10/18/2016	1.4J	2.2J	2.0UJ	35	0.02	NM
MW-66D2 ⁽²⁾ cont'd	4/26/2017	1.0U	1.0U	1.0U	190	11.67	0.8
	10/16/2017	0.6J	0.9J	1.0U	137	7.45	0.2
	4/24/2018	3.8	6.9	1.0U	223	19.44	3.2

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MW-67S ⁽²⁾	5/20/2010	26/27	37/39	87/95	-170	0.00	7.0
	11/22/2011	1.5 J	8.7	47	-35	0.14	NR
	4/25/2013	2.8 J	19	140	45	5.14	1.9
	10/29/2013	4.6 J	16	100	-161	2.49	1.0
	4/25/2014	4.9 J	9.6	38	77	2.76	0.0
	10/24/2014 ⁽⁵⁾	18	19	6.2	NM	NM	NM
	4/23/2015	6	5.4	2.0 U	155	12.71	0.4
	10/21/2015	1.7 J	2.5 J	2.0 U	177	11.68	NM
	4/25/2016	58	44	2.0 U	104	20.69	0.7
	10/19/2016	41	66	2.0UJ	26	0.29	0.2
	4/26/2017	67	61	1.0U	100	4.02	NM
	10/16/2017	60	66	0.7J	87	2.77	0.0
	4/24/2018	43.8	53.4	1.0U	243	9.39	1.6
MW-67D ⁽²⁾	5/20/2010	74/73	280/280 J	5.0 U/5.0 U	-187	1.30	0.2
	11/22/2011	6.2	58	5.0 U	129	2.97	NR
	4/25/2013	8.6	32	5.0 U	45	11.98	1.9
	10/29/2013	11	36	5.0 U	-204	3.78	0.0
	4/25/2014	4.8 J	25	5.0 U	2	5.35	0.0
	10/24/2014 ⁽⁵⁾	1.4 J	4.3 J	5.0 U	NM	NM	NM
	4/23/2015	2.9 J	5.0 U	2.0 U	-274	9.51	NM
	10/21/2015 ⁽⁵⁾	5.0 U	2.1 J	2.0 U	NM	NM	NM
	4/25/2016	5.0 J	1.2 J	2.0 U	53	4.62	0.3
	10/19/2016	5.0U	5.0U	2.0UJ	50	2.37	0.1
	4/26/2017	1.0U	2.1	1.0U	2	3.25	0.5
	10/16/2017	0.7J	0.8J	1.0U	NM	0.00	0.0
	4/24/2018	1.0U	1.0U	1.0U	NM	NM	NM
MW-68S ⁽²⁾	11/28/2011	83	110	690	-107	0.05	NR
	4/25/2013	11	27	940	-190	6.84	1.9
	10/29/2013	6.8	11	580	-128	3.58	1.0
	4/25/2014	99	81	270	-50	2.49	0.0
	10/24/2014	67	93	400	68	21.08	0.0
	4/23/2015	77	110	2.0 U	-15	15.09	NM
MW-68S ⁽²⁾ (cont'd)	10/21/2015	65	110	260	47	9.22	NM
	4/25/2016	62	100	220	1	24.40	0.0
	10/19/2016	87	120	230J	-201	0.47	0.1
	4/26/2017 ⁽⁵⁾	50	83	190	NM	NM	NM
	10/16/2017	87	93	143	-163	0.00	0.2
	4/24/2018	60.4	84.4	66	163	3.39	0.5

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe⁺² (mg/L)
MW-68D ⁽²⁾	5/19/2010	320	970	34	-29	0.00	2.4
	11/28/2011	47	290	1.2 J	-38	0.97	NR
	4/25/2013	36	160	1.3 J	-174	5.88	0.7
	10/29/2013	19	78	5.0 U	-91	4.12	0.2
	4/25/2014	7.3	47	5.0 U	-71	5.27	0.0
	10/24/2014	2.2 J	14	5.0 U	36	12.79	0.0
	4/23/2015 ⁽⁵⁾	1.8 J	6.8	1.0 J	NM	NM	NM
	10/21/2015 ⁽⁵⁾	1.7 J	5.9	2.0 U	NM	NM	NM
	4/25/2016	5.0 U	4.3 J	2.0 U	37	9.21	0.0
	10/19/2016	5.0U	4.6J	2.0UJ	-39	0.50	0.0
	4/26/2017	1.0U	4.7	1.0U	18	4.64	NM
	10/16/2017	2.5	5.4	1.0U	82	0.00	0.6
	4/24/2018	2.54	8.1	1.0U	NM	NM	>5.0
MW-92D1	4/12/2011	5.7	1.3 J	100	-190	1.13	4.0
	4/24/2013	3.7 J	6.2	79	12	6.57	3.0
	10/27/2014	3.4 J	4.6 J	51	-18	2.62	4.1
	10/23/2015	3.9 J	6.2	42	32	6.61	1.0
	10/18/2017	2.4	6.8	24	-105	0.00	0.0
MW-92D2	4/25/2011	690	12	5.0 U	-156	2.00	1.5
	4/24/2013	280	17	5.0 U	-104	5.52	>5.0
	10/27/2014	92	8.2	5.0 U	-120	2.20	75.0
	10/23/2015	30	5.4	2.0 U	-77	8.07	0.1
	10/18/2017	18	2.4	1.0U	-91	0.00	0.4
MW-93D1	4/26/2011	21	3.7 J	190	-191	2.18	2.5
	4/24/2013	14	4.5 J	20	-140	5.16	2.2
	10/27/2014	16	2.3 J	7.0	33	3.10	2.3
	10/23/2015	8	1.2 J	3.8	11	9.79	0.2
	10/18/2017	1.4	0.5J	1.0U	-94	0.00	0.4
MW-93D2	4/26/2011	110	15	5.0 U	-219	2.96	2.0
	4/23/2013	24	21	5.0 U	-105	4.58	4.5
	10/27/2014	1.0 J	5.0 U	5.0 U	-12	2.98	3.4
	10/23/2015	5.0 U	5.0 U	2.0 U	-105	9.40	0.0
	10/18/2017	13	1.2	1.5	-77	3.48	0.4
Northrop Wells							
GP-1 (Well 1)	9/25/2006	NR	NA	ND	NR	NR	NR
	10/23/2006	NR	NA	ND	NR	NR	NR
	11/13/2006	NR	NA	ND	NR	NR	NR
	12/18/2006	NR	634	ND	NR	NR	NR
	1/15/2007	NR	547	ND	NR	NR	NR
	2/12/2007	NR	373	ND	NR	NR	NR
	3/12/2007	NR	439	ND	NR	NR	NR
	4/16/2007	NR	473	ND	NR	NR	NR
	5/14/2007	NR	587	ND	NR	NR	NR
GP-1 (Well 1) (cont'd)	6/18/2007	NR	414	ND	NR	NR	NR
	7/23/2007	NR	410	ND	NR	NR	NR

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe ⁺² (mg/L)
	8/13/2007	NR	333	ND	NR	NR	NR
	9/11/2007	NR	452	ND	NR	NR	NR
	10/15/2007	NR	285	ND	NR	NR	NR
	11/12/2007	NR	428	ND	NR	NR	NR
	12/18/2007	NR	371	ND	NR	NR	NR
	1/14/2008	NR	273	ND	NR	NR	NR
	2/18/2008	NR	373	ND	NR	NR	NR
	3/17/2008	NR	212	ND	NR	NR	NR
	4/14/2008	NR	233	ND	NR	NR	NR
	5/19/2008	NR	195	ND	NR	NR	NR
	6/16/2008	NR	113	ND	NR	NR	NR
	7/15/2008	NR	353	ND	NR	NR	NR
	8/18/2008	NR	54	ND	NR	NR	NR
	9/22/2008	NR	78	ND	NR	NR	NR
	10/13/2008	NR	78	ND	NR	NR	NR
	11/18/2008	NR	145	ND	NR	NR	NR
	12/16/2008	NR	82	ND	NR	NR	NR
	1/05/2009	NR	106	ND	NR	NR	NR
	2/16/2009	NR	186	ND	NR	NR	NR
	3/16/2009	NR	202	ND	NR	NR	NR
	4/13/2009	NR	203	ND	NR	NR	NR
	5/18/2009	NR	217	ND	NR	NR	NR
	6/15/2009	NR	93	ND	NR	NR	NR
	7/21/2009	NR	156	ND	NR	NR	NR
	8/18/2009	NR	126	ND	NR	NR	NR
	9/16/2009	NR	112	ND	NR	NR	NR
	10/20/2009	NR	132	ND	NR	NR	NR
	11/16/2009	NR	173	ND	NR	NR	NR
	12/4/2009	NR	151	ND	NR	NR	NR
	1/18/2010	NR	106	ND	NR	NR	NR
	2/15/2010	NR	108	ND	NR	NR	NR
	3/15/2010	NR	149	ND	NR	NR	NR
	4/20/2010	NR	368	ND	NR	NR	NR
	7/28/2010	NR	NA	ND	NR	NR	NR
	8/20/2010	NR	101	ND	NR	NR	NR
	5/08/2012	48	410	ND	NR	NR	NR
	12/11/2012	51	410	ND	NR	NR	NR
	2/18/2013	49	360	ND	NR	NR	NR
	6/06/2013	48	380	ND	NR	NR	NR
	8/21/2013	48/44	400/390	ND/ND	NR	NR	NR
	2/24/2014	39	400	ND	NR	NR	NR
	6/10/2014	40	490	ND	NR	NR	NR
	9/11/2014	35	730	ND	NR	NR	NR
	11/13/2014	39	695	ND	NR	NR	NR
	3/16/2015	41	713	ND	NR	NR	NR
	5/05/2015	31	748	ND	NR	NR	NR
	9/09/2015	35	852	ND	NR	NR	NR
	12/12/2015	31	768	ND	NR	NR	NR
GP-1 (Well 1) (cont'd)	3/14/2016	30	792	ND	NR	NR	NR
	5/12/2016	24	615	ND	NR	NR	NR
	8/17/2016	28	838	ND	NR	NR	NR
	12/15/2016	22	703	ND	NR	NR	NR

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe⁺² (mg/L)
	2/22/2017	28	702	ND	NR	NR	NR
	9/12/2017	22	603	ND	NR	NR	NR
GP-3 (Well 3R)	09/25/2006	NR	NR	100	NR	NR	NR
	10/23/2006	NR	NR	122	NR	NR	NR
	11/13/2006	NR	NR	143	NR	NR	NR
	12/18/2006	NR	3968	148	NR	NR	NR
	1/15/2007	NR	3038	121	NR	NR	NR
	2/12/2007	NR	2545	81	NR	NR	NR
	3/12/2007	NR	2200	74	NR	NR	NR
	4/16/2007	NR	2476	49	NR	NR	NR
	5/14/2007	NR	3107	144	NR	NR	NR
	6/18/2007	NR	2268	92	NR	NR	NR
	7/23/2007	NR	2900	128	NR	NR	NR
	8/13/2007	NR	1964	113	NR	NR	NR
	9/11/2007	NR	2013	114	NR	NR	NR
	10/15/2007	NR	2080	117	NR	NR	NR
	11/12/2007	NR	2123	113	NR	NR	NR
	12/18/2007	NR	2264	130	NR	NR	NR
	1/14/2008	NR	1655	109	NR	NR	NR
	2/18/2008	NR	1472	143	NR	NR	NR
	3/17/2008	NR	1700	146	NR	NR	NR
	4/14/2008	NR	1717	130	NR	NR	NR
	5/19/2008	NR	985	81	NR	NR	NR
	6/16/2008	NR	1196	86	NR	NR	NR
	7/15/2008	NR	1106	89	NR	NR	NR
	8/18/2008	NR	907	51	NR	NR	NR
	9/22/2008	NR	1083	101	NR	NR	NR
	10/13/2008	NR	1130	98	NR	NR	NR
	11/18/2008	NR	846	112	NR	NR	NR
	12/16/2008	NR	1227	83	NR	NR	NR
	1/12/2009	NR	862	93	NR	NR	NR
	2/16/2009	NR	1159	104	NR	NR	NR
	3/16/2009	NR	1082	112	NR	NR	NR
	4/13/2009	NR	1410	153	NR	NR	NR
	0/18/2009	NR	1012	151	NR	NR	NR
	6/15/2009	NR	856	94	NR	NR	NR
	7/21/2009	NR	1180	148	NR	NR	NR
	8/18/2009	NR	1226	151	NR	NR	NR
	9/16/2009	NR	1462	163	NR	NR	NR
	10/20/2009	NR	1591	178	NR	NR	NR
	11/16/2009	NR	1262	182	NR	NR	NR
	12/14/2009	NR	1262	179	NR	NR	NR
	1/18/2010	NR	1263	188	NR	NR	NR
	2/15/2010	NR	1191	177	NR	NR	NR
	3/15/2010	NR	852	134	NR	NR	NR

**Select Laboratory and Field Parameter Results
Hooker Ruco Site
Hicksville, New York**

Well	Date Sampled	PCE (µg/L)	TCE (µg/L)	VCM (µg/L)	ORP (mV)	DO (mg/L)	Fe ⁺² (mg/L)
GP-3 (Well 3R) (cont'd)	4/20/2010	NR	890	173	NR	NR	NR
	6/21/2010	NR	450	135	NR	NR	NR
	7/19/2010	NR	308	137	NR	NR	NR
	8/12/2010	NR	132	155	NR	NR	NR
	5/08/2012	58	1700	140	NR	NR	NR
	12/11/2012	51	1500	84	NR	NR	NR
	2/18/2013	53	1400	72	NR	NR	NR
	6/06/2013	54	1400	60	NR	NR	NR
	8/21/2013	57	1200	58	NR	NR	NR
	2/24/2014 ⁽⁶⁾	38	98	38	NR	NR	NR
	6/10/2014 ⁽⁶⁾	40	140	36	NR	NR	NR
	9/11/2014 ⁽⁶⁾	43	270	36	NR	NR	NR
	11/13/2014 ⁽⁶⁾	44	394	35	NR	NR	NR
	3/16/2015 ⁽⁶⁾	44	493	29	NR	NR	NR
	5/05/2015 ⁽⁶⁾	34	533	18	NR	NR	NR
	9/09/2015 ⁽⁶⁾	37	557	13	NR	NR	NR
	12/15/2015 ⁽⁶⁾	34	510	10	NR	NR	NR
	3/14/2016 ⁽⁶⁾	31	529	8.6	NR	NR	NR
	5/12/2016 ⁽⁶⁾	29	487	7.6	NR	NR	NR
	8/17/2016 ⁽⁶⁾	33	579	5.0	NR	NR	NR
	12/15/2016 ⁽⁶⁾	27	508	3.5	NR	NR	NR
	2/14/2017 ⁽⁶⁾	31	498	3.9	NR	NR	NR
	9/12/2017 ⁽⁶⁾	31	365	2.7	NR	NR	NR
	2/28/2018 ⁽⁶⁾	26	306	2.2	NR	NR	NR
MW-3-1	1/30/2012 ⁽⁷⁾	150	240	170	NR	NR	NR
	3/28/2012	56	220	1300	NR	NR	NR
	6/19/2013	7.8	37	78	NR	NR	NR
	6/5/2015	12	68	4.8	NR	NR	NR
	11/11/2015	11	58	5.2	NR	NR	NR
	5/11/2016	16	87	16	NR	NR	NR
	10/18/2016	14	96	14	NR	NR	NR

Notes:

- (1) Pilot System Monitoring Well
- (2) Remainder of System Monitoring Well
- (3) Black colored water prevented reading on colorimetric meter
- (4) Orange colored water prevented reading on colorimeter meter
- (5) Insufficient sample volume to obtain measurement/reading
- (6) Sample from replacement well 3R
- (7) Sample collected from vertical profile boring at depth 439 ft bgs
- NA - Not analyzed
- NM - Not measured (insufficient sample volume for all samples subsequent to 11/30/2011)
- NR - Not reported by Northrop
- NS - Not Sampled
- U - Not detected at associated value
- J - Estimated concentration

Table 4

Well Status September 30, 2018
Operable Unit-3 Biosparge System
Hooker/Ruco Site, Hicksville, New York

Well Designation	Date Completed	Well Functional	Comments/Proposed Action
IW-1D1A	04/28/11	Y	
IW-1D1L	04/28/11	N	
IW-1D2A	04/28/11	Y	
IW-2D1A	04/8/11	Y	
IW-2D1L	04/8/11	N	
IW-2D2A	04/8/11	Y	
IW-3D1A	03/25/11	Y	
IW-3D1L	03/25/11	N	
IW-3D2A	03/25/11	Y	
IW-4D1A	01/27/11	Y	
IW-4D1L	01/27/11	N	
IW-4D2A	01/27/11	Y	
IW-5D1A	04/12/11	Y	
IW-5D1L	04/12/11	N	
IW-5D2A	04/12/11	Y	
IW-6D1A	01/17/11	Y	
IW-6D1L	01/17/11	N	
IW-6D2A	01/17/11	N	Repairs are ongoing.
IW-7D1A	03/29/11	N	Repairs are ongoing.
IW-7D1L	03/29/11	N	
IW-7D2A	03/29/11	Y	
IW-15D1A	10/05/10	Y	
IW-15D1L	10/05/10	N	
IW-15D2A	10/05/10	Y	
IW-16D1A	11/01/05	N	DO in downgradient MW-83 >2.0 mg/L. No action planned.
IW-16D1L	11/01/05	N	
IW-16D2A	11/01/05	Y	
IW-17D1A	12/01/05	Y	
IW-17D1L	12/01/05	N	
IW-17D2A	12/01/05	N	DO in downgradient MW-81 >2.0 mg/L. No action planned.
IW-18D1A	01/09/06	N	DO in downgradient MW-84 >2.0 mg/L. No action planned.
IW-18D1L	01/09/06	N	
IW-18D2A	01/09/06	Y	
IW-19D1A	01/13/06	Y	DO in downgradient MW-82/88 >2.0 mg/L.
IW-19D1L	01/13/06	N	
IW-19D2A	01/13/06	Y	DO in downgradient MW-82/88 >2.0 mg/L.
IW-20D1A	10/13/10	Y	DO in downgradient MW-82/88 >2.0 mg/L.
IW-20D1L	10/13/10	N	
IW-20D2A	10/13/10	Y	DO in downgradient MW-82/88 >2.0 mg/L.
IW-21D1A	10/23/10	Y	
IW-21D1L	10/23/10	N	

Well Status September 30, 2018
Operable Unit-3 Biosparge System
Hooker/Ruco Site, Hicksville, New York

Well Designation	Date Completed	Well Functional	Comments/Proposed Action
IW-21D2A	10/23/10	Y	
IW-22D1A	11/03/10	Y	
IW-22D1L	11/03/10	N	
IW-22D2A	11/03/10	Y	
MW-50D1	02/23/95	N	Abandoned by Bayer during site closure.
MW-50D2	02/13/95	N	Abandoned by Bayer during site closure.
MW-51D1	10/24/95	N	Well no longer needed to monitor remediation of VCM subplume.
MW-51D2	10/02/95	N	Well no longer needed to monitor remediation of VCM subplume.
MW-52S	01/17/96	N	Abandoned March 2007
MW-52I	12/14/95	N	Abandoned March 2007
MW-52D	12/12/95	N	Abandoned March 2007
MW-53I	06/08/95	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-53D1	06/19/95	N	Well no longer needed to monitor remediation of VCM subplume. Well paved over.
MW-53D2	06/05/95	Y	Well no longer needed to monitor remediation of VCM subplume. Obstruction in well prevents sampler insertion.
MW-56S	01/26/96	N	Abandoned October 2000
MW-56I	01/25/96	N	Abandoned October 2000
MW-57S	01/23/96	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-57I	01/25/96	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-58D	03/26/02	Y	
MW-58D1	03/26/02	Y	
MW-58D2	03/26/02	Y	
MW-59D	04/06/02	N	VCM subplume can be monitored using Northrop well MW-3-1.
MW-59D1	04/06/02	N	VCM subplume can be monitored using Northrop well MW-3-1.
MW-59D2	04/06/02	Y	Previously lodged sampler retrieved from well in April 2016 allowing well to be sampled.
MW-60D1	03/05/02	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-60S	03/08/02	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-60I	03/08/02	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-60D	03/08/02	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-61S	02/22/02	Y	Well no longer needed to monitor remediation of VCM subplume.
MW-61I	02/22/02	N	Obstruction at 130 ftbgs prevents insertion of sampler. Monitoring of MW-61D2 sufficient to monitor VCM subplume.
MW-61D1	02/22/02	N	Obstruction at 130 ftbgs prevents insertion of sampler. Monitoring of MW-61D2 sufficient to monitor VCM subplume.
MW-61D2	03/12/02	Y	
MW-62I	05/14/02	Y	
MW-62D	04/20/02	Y	
MW-63S	02/18/02	Y	
MW-63I	02/18/02	Y	
MW-63D1	02/18/02	Y	
MW-63D2	02/18/02	Y	
MW-64S	02/09/02	N	Well no longer needed to monitor remediation of VCM subplume. Sampler stuck in well.
MW-64I	02/09/02	N	Well no longer needed to monitor remediation of VCM subplume. Sampler stuck in well.
MW-64D	02/09/02	N	Well no longer needed to monitor remediation of VCM subplume. Sampler stuck in well.

Table 4

Well Status September 30, 2018
Operable Unit-3 Biosparge System
Hooker/Ruco Site, Hicksville, New York

Well Designation	Date Completed	Well Functional	Comments/Proposed Action
MW-66D2	06/08/02	Y	
MW-66I	06/19/02	N	Remediation of VCM subplume is adequately monitored by MW-66D2. Well no longer needed.
MW-66D1	06/19/02	N	Remediation of VCM subplume is adequately monitored by MW-66D2. Well no longer needed.
MW-67S	01/11/03	Y	
MW-67D	01/11/03	Y	
MW-68S	02/09/03	Y	
MW-68D	02/09/03	Y	
MW-70D1	02/02/11	Y	
MW-70D2	02/02/11	Y	
MW-72D1	03/16/11	Y	
MW-72D2	03/16/11	Y	
MW-73D1	02/11/11	Y	
MW-73D2	02/11/11	Y	
MW-75D1	05/02/11	Y	
MW-75D2	05/02/11	Y	
MW-76S	03/03/11	Y	No future sampling of this well is recommended.
MW-76I	03/03/11	Y	No future sampling of this well is recommended.
MW-76D1	02/15/11	Y	Test weight fell and became stuck in bottom of well in October 2015; samplers were able to be inserted and retrieved
MW-76D2	02/15/11	Y	
MW-77D1	02/26/11	N	Samplers stuck in well. Monitoring of MW-77D2 sufficient to monitor VCM Subplume. Abandonment of MW-77D1 could adversely impact functionality of MW-77D2. No action proposed.
MW-77D2	02/26/11	Y	
MW-81D1	11/01/05	Y	
MW-81D2	11/01/05	Y	
MW-82D1	02/15/06	Y	Manhole cover requires repair
MW-82D2	02/15/06	Y	Manhole cover requires repair
MW-83D1	11/06/05	Y	
MW-83D2	11/06/05	Y	
MW-84D1	04/12/06	Y	Well casing degraded, may require future repair
MW-84D2	04/12/06	Y	Well casing degraded, may require future repair
MW-85S	12/04/10	Y	No future sampling of this well is recommended.
MW-85I	12/04/10	Y	No future sampling of this well is recommended.
MW-85D1	12/02/10	Y	
MW-85D2	12/02/10	Y	
MW-86D1	11/11/10	Y	
MW-86D2	11/11/10	Y	
MW-87D1	10/04/05	Y	
MW-87D2	10/04/05	Y	
MW-88D1	03/21/06	Y	
MW-88D2	03/21/06	Y	
MW-89D1	12/19/10	Y	

Well Status September 30, 2018
Operable Unit-3 Biosparge System
Hooker/Ruco Site, Hicksville, New York

Well Designation	Date Completed	Well Functional	Comments/Proposed Action
MW-89D2	12/19/10	Y	
MW-90D1	03/28/06	Y	
MW-90D2	03/28/06	Y	
MW-92D1	03/11/11	Y	
MW-92D2	03/11/11	Y	
MW-93D1	03/03/11	Y	
MW-93D2	03/03/11	Y	
VZ-1S	03/15/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-1D	03/15/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-2S	02/12/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-2D	02/12/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-4S	04/30/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-4D	04/30/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-5S	03/11/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-5D	03/11/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-6S	02/26/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-6D	02/26/11	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-10S	01/19/06	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-10D	01/19/06	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-11S	02/28/06	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-11D	02/28/06	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-12S	12/05/10	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-12D	12/05/10	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-14S	10/07/05	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-14D	10/07/05	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-15S	11/04/05	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-15D	11/04/05	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-16S	01/23/06	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-16D	01/23/06	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-17S	12/20/10	Y	Well no longer scheduled to monitor remediation of VCM subplume.
VZ-17D	12/20/10	Y	Well no longer scheduled to monitor remediation of VCM subplume.

Note:

NA Not Applicable