



**THIRD QUARTER 2023  
GROUNDWATER MONITORING AND REMEDIAL STATUS REPORT**

**Part 2**

**Inactive Exxon Facility #28077  
14258 Jarrettsville Pike  
Phoenix, Maryland  
Case Number 2006-0303-BA2  
Facility I.D. No. 12342**

**Prepared By:**  
Kleinfelder  
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**Prepared For:**  
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Property Solutions Company  
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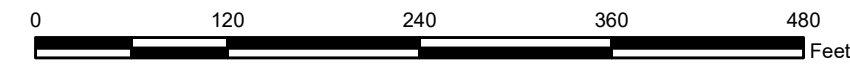
## FIGURES

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NOTE: MW-169D location is approximate

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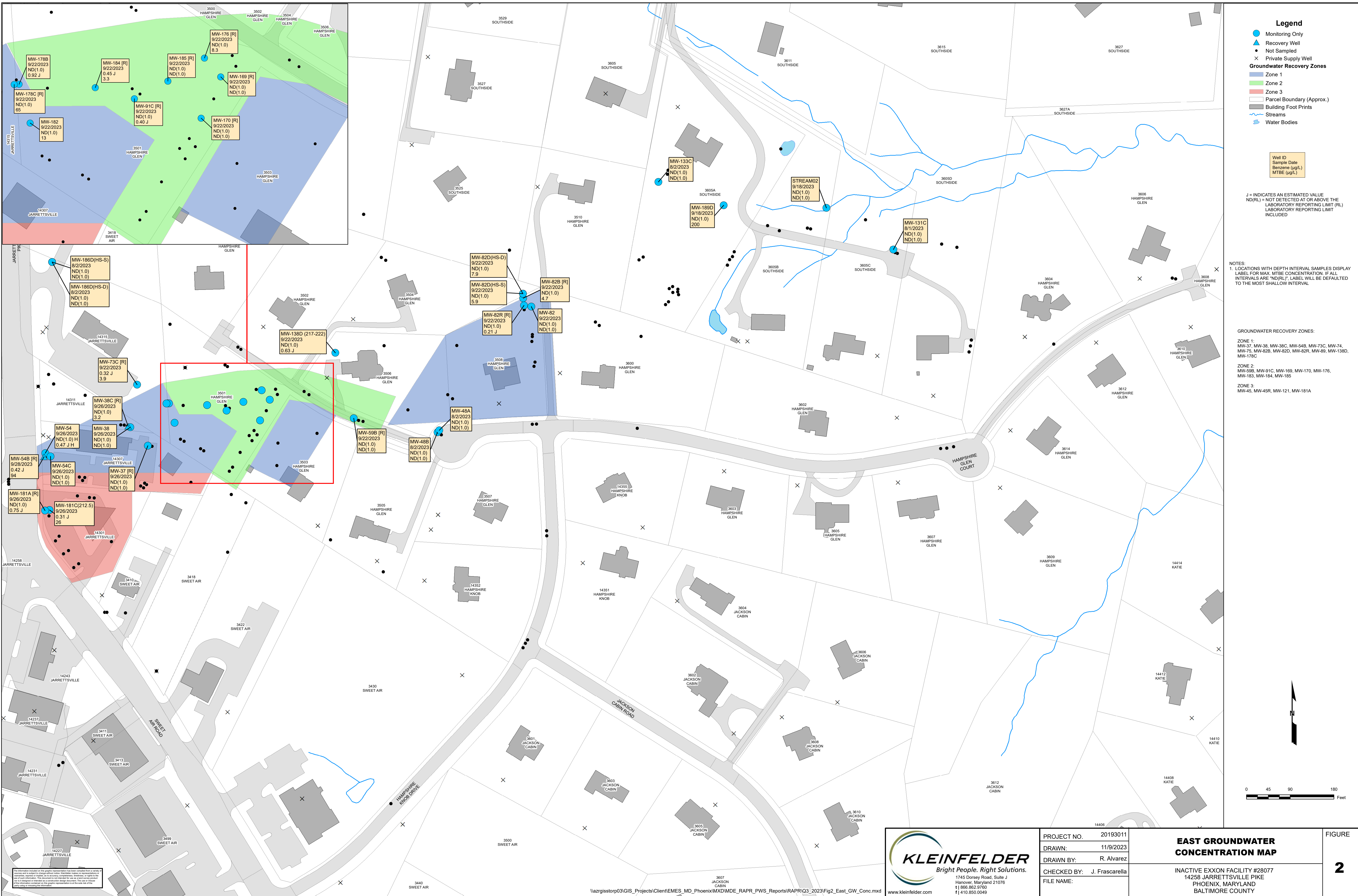
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PROJECT NO.	20193011
DRAWN:	11/11/2022
DRAWN BY:	C. Low
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**SITE PLAN**  
**THIRD QUARTER 2023**

INACTIVE EXXON FACILITY #28077  
14258 JARRETTSVILLE PIKE  
PHOENIX, MARYLAND  
BALTIMORE COUNTY



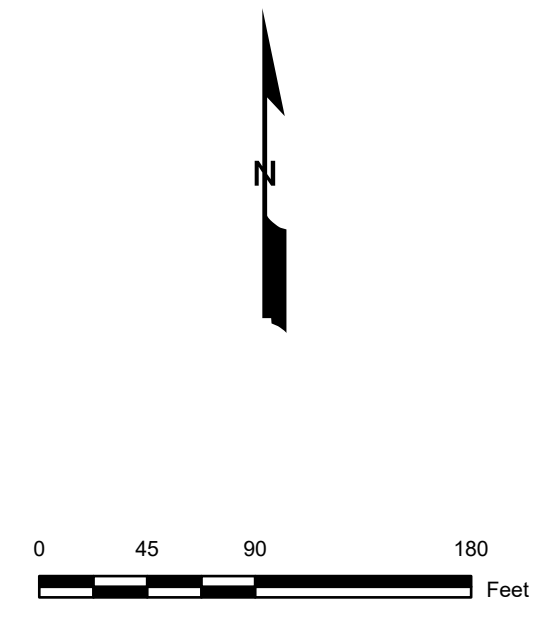
- Legend**
- Monitoring Only
  - ▲ Recovery Well
  - Not Sampled
  - × Private Supply Well
- Groundwater Recovery Zones**
- Zone 1
  - Zone 2
  - Zone 3
- Parcel Boundary (Approx.)  
 Building Foot Prints  
 Streams  
 Water Bodies

Well ID  
 Sample Date  
 Benzene (µg/L)  
 MTBE (µg/L)

J = INDICATES AN ESTIMATED VALUE  
 ND(1.0) = NOT DETECTED AT OR ABOVE THE  
 LABORATORY REPORTING LIMIT (RL)  
 LABORATORY REPORTING LIMIT  
 INCLUDED

NOTES:  
 1. LOCATIONS WITH DEPTH INTERVAL SAMPLES DISPLAY  
 LABEL FOR MAX. MTBE CONCENTRATION. IF ALL  
 INTERVALS ARE "ND(RL)", LABEL WILL BE DEFAULTED  
 TO THE MOST SHALLOW INTERVAL

GROUNDWATER RECOVERY ZONES:  
 ZONE 1:  
 MW-37, MW-38, MW-38C, MW-54B, MW-73C, MW-74,  
 MW-75, MW-82B, MW-82D, MW-82R, MW-89, MW-138D,  
 MW-178C  
 ZONE 2:  
 MW-59B, MW-91C, MW-169, MW-170, MW-176,  
 MW-193, MW-184, MW-185  
 ZONE 3:  
 MW-45, MW-45R, MW-121, MW-181A



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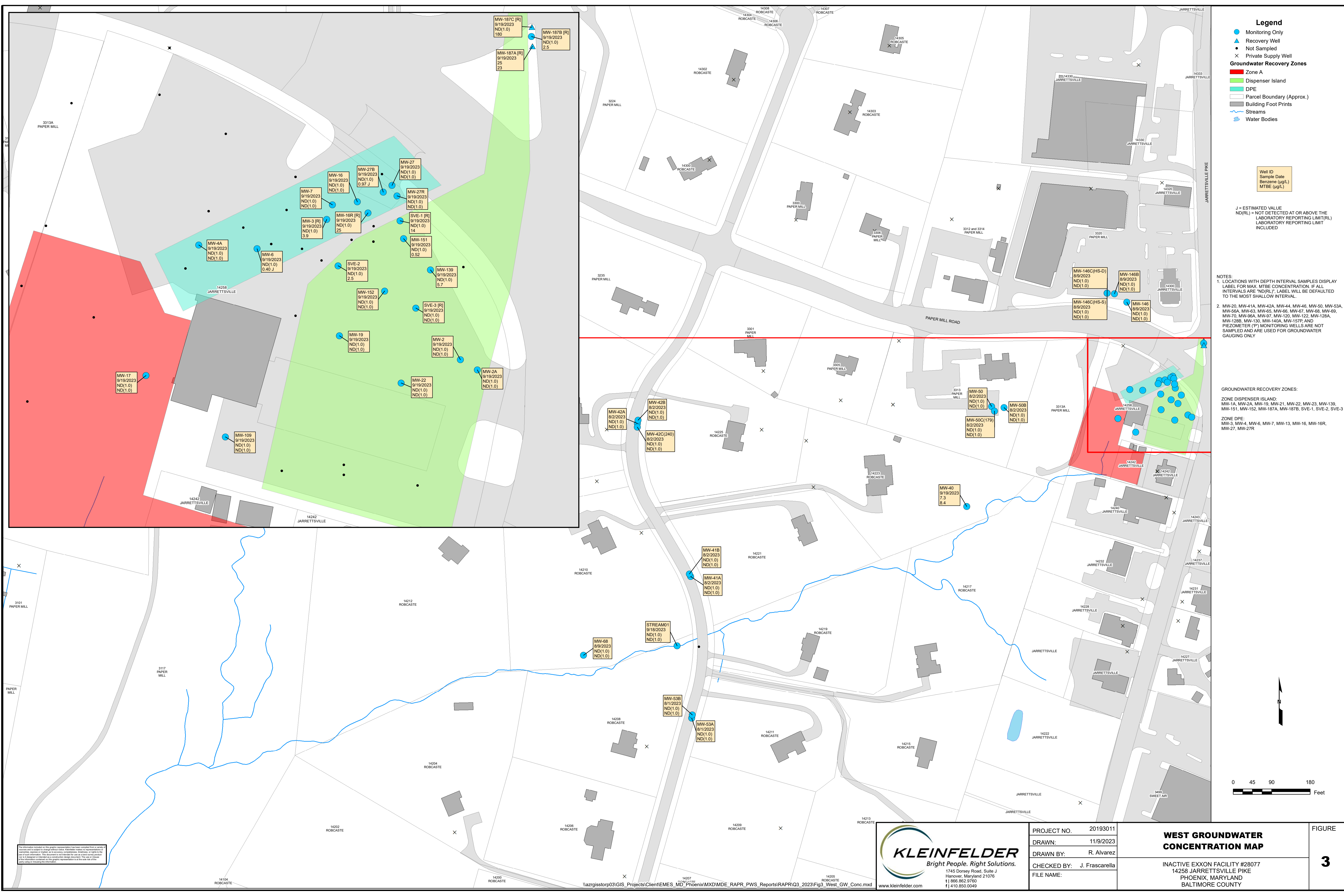
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PROJECT NO.	20193011
DRAWN:	11/9/2023
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CHECKED BY:	J. Frascarella
FILE NAME:	

**EAST GROUNDWATER CONCENTRATION MAP**

INACTIVE EXXON FACILITY #28077  
 14258 JARRETTSVILLE PIKE  
 PHOENIX, MARYLAND  
 BALTIMORE COUNTY

FIGURE  
**2**



**Legend**

- Monitoring Well
- ▲ Recovery Well
- Not Sampled
- × Private Supply Well

**Groundwater Recovery Zones**

- Zone A
- Dispenser Island
- DPE
- Parcel Boundary (Approx.)
- Building Foot Prints
- Streams
- Water Bodies

**Well ID**  
 Sample Date  
 Benzene (µg/L)  
 MTBE (µg/L)

J = ESTIMATED VALUE  
 ND(RL) = NOT DETECTED AT OR ABOVE THE LABORATORY REPORTING LIMIT (RL)  
 LABORATORY REPORTING LIMIT INCLUDED

**NOTES:**

- LOCATIONS WITH DEPTH INTERVAL SAMPLES DISPLAY LABEL FOR MAX. MTBE CONCENTRATION. IF ALL INTERVALS ARE "ND(RL)", LABEL WILL BE DEFAULTED TO THE MOST SHALLOW INTERVAL.
- MW-20, MW-41A, MW-42A, MW-44, MW-46, MW-50, MW-53A, MW-56A, MW-63, MW-65, MW-66, MW-67, MW-68, MW-69, MW-70, MW-96A, MW-97, MW-120, MW-122, MW-128A, MW-128B, MW-130, MW-140A, MW-157R AND PIEZOMETER (P) MONITORING WELLS ARE NOT SAMPLED AND ARE USED FOR GROUNDWATER GAUGING ONLY

**GROUNDWATER RECOVERY ZONES:**

**ZONE DISPENSER ISLAND:**  
 MW-1A, MW-2A, MW-19, MW-21, MW-22, MW-23, MW-139, MW-151, MW-152, MW-187A, MW-187B, SVE-1, SVE-2, SVE-3

**ZONE DPE:**  
 MW-3, MW-4, MW-6, MW-7, MW-13, MW-16, MW-16R, MW-27, MW-27R

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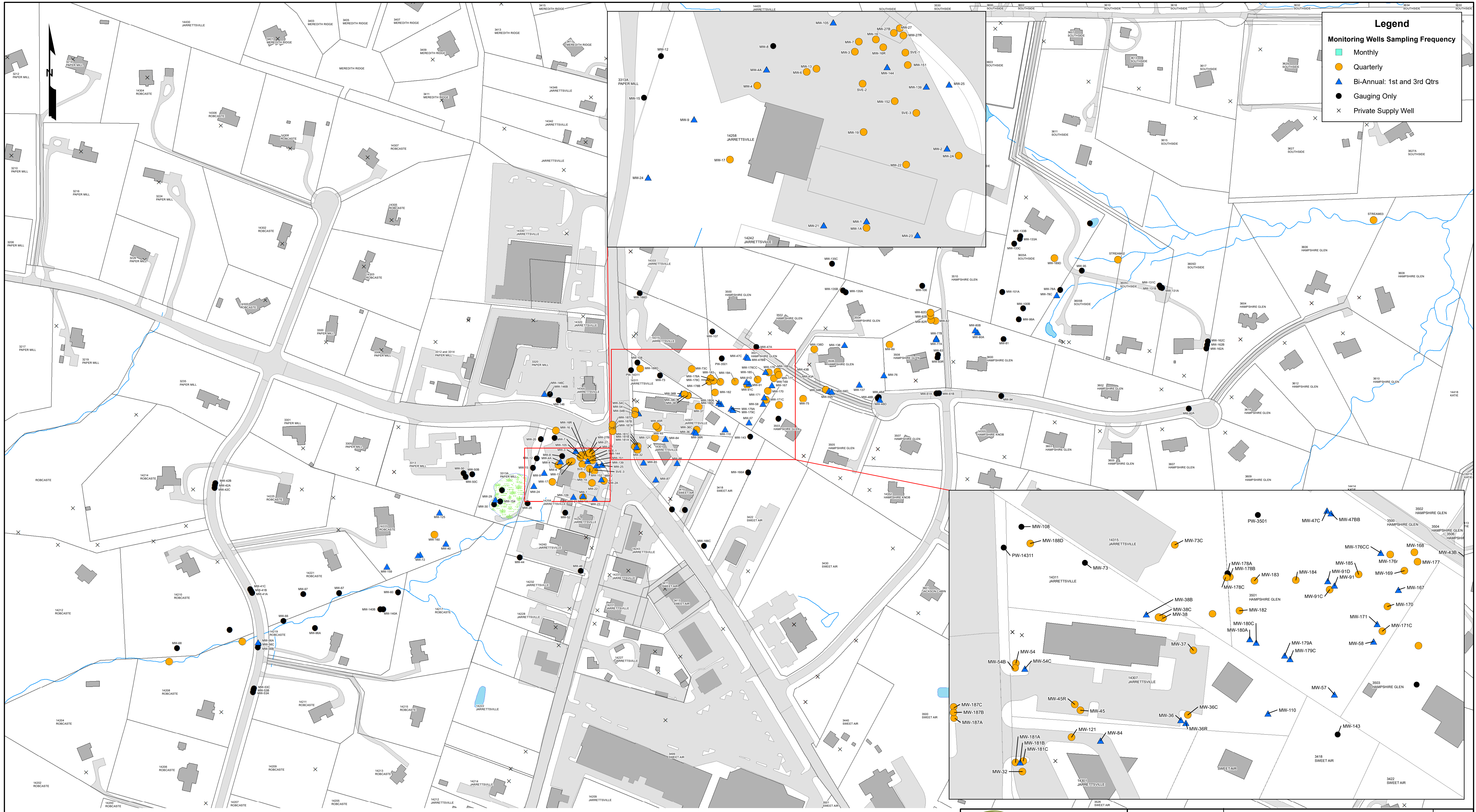
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CHECKED BY:	R. Alvarez
FILE NAME:	J. Frascarella

**WEST GROUNDWATER CONCENTRATION MAP**

INACTIVE EXXON FACILITY #28077  
 14258 JARRETTSVILLE PIKE  
 PHOENIX, MARYLAND  
 BALTIMORE COUNTY

FIGURE **3**

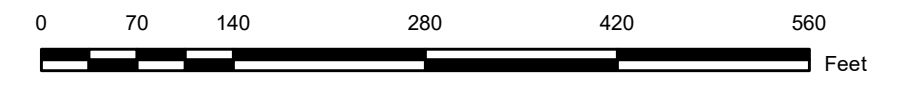


**Legend**

**Monitoring Wells Sampling Frequency**

- Monthly
- Quarterly
- Bi-Annual: 1st and 3rd Qtrs
- Gauging Only
- Private Supply Well

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\\azgisstor03\GIS\_Projects\Client\EMES\_MD\_Phoenix\MXD\ME\_RAPR\_PWS\_Reports\RAPR\Fig4\_SamplingFreq\_1Q23\_051123.mxd

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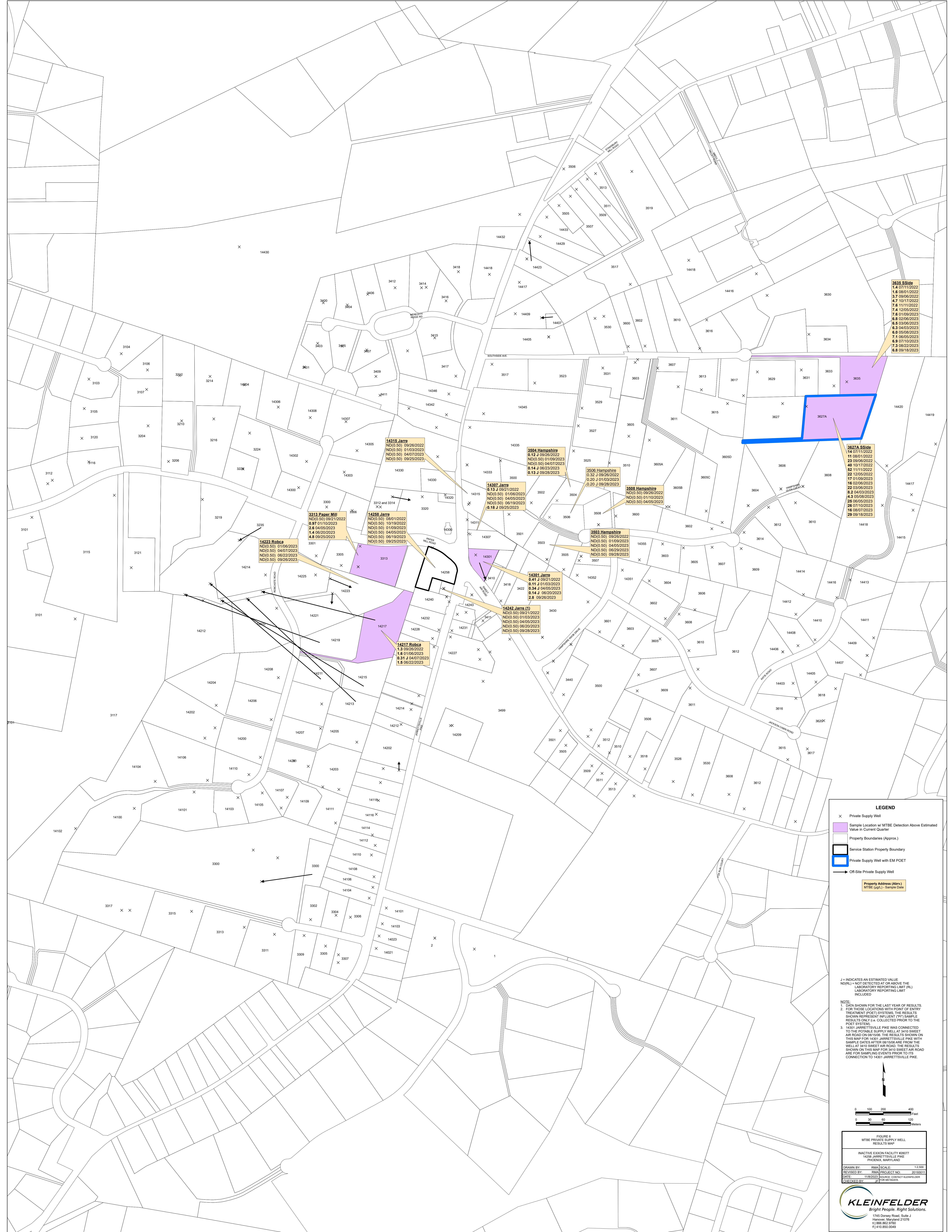
PROJECT NO.	20193011
DRAWN:	5/11/2023
CHECKED BY:	R. Alvarez
FILE NAME:	J. Frascarella

**MDE-APPROVED MONITORING WELL SAMPLING FREQUENCY AT END OF 3Q23**

INACTIVE EXXON FACILITY #28077  
14258 JARRETTSVILLE PIKE  
PHOENIX, MARYLAND  
BALTIMORE COUNTY

FIGURE  
**4**





**3635 S Side**  
 14 07/11/2022  
 1.6 08/01/2022  
 3.7 09/08/2022  
 4.7 10/17/2022  
 7.6 11/11/2022  
 7.4 12/05/2022  
 7.6 01/09/2023  
 6.8 02/08/2023  
 6.5 03/06/2023  
 6.3 04/03/2023  
 6.0 05/08/2023  
 7.1 05/05/2023  
 6.9 07/10/2023  
 7.3 08/22/2023  
 6.8 09/18/2023

**3627A S Side**  
 14 07/11/2022  
 11 08/01/2022  
 23 09/08/2022  
 40 10/17/2022  
 52 11/11/2022  
 22 12/05/2022  
 17 01/09/2023  
 16 02/08/2023  
 22 03/06/2023  
 8.2 04/03/2023  
 4.3 05/08/2023  
 25 06/05/2023  
 26 07/10/2023  
 16 08/07/2023  
 28 09/18/2023

**14315 Jarro**  
 ND(0.50) 09/28/2022  
 ND(0.50) 01/03/2023  
 ND(0.50) 04/07/2023  
 ND(0.50) 09/25/2023

**3504 Hampshire**  
 0.12 J 09/26/2022  
 ND(0.50) 01/09/2023  
 ND(0.50) 04/07/2023  
 0.14 J 06/23/2023  
 0.13 J 09/28/2023

**3505 Hampshire**  
 0.32 J 09/26/2022  
 0.20 J 01/03/2023  
 0.20 J 09/28/2023

**3508 Hampshire**  
 ND(0.50) 09/09/2022  
 ND(0.50) 01/10/2023  
 ND(0.50) 04/05/2023

**14307 Jarro**  
 0.13 J 09/21/2022  
 ND(0.50) 01/09/2023  
 ND(0.50) 04/05/2023  
 ND(0.50) 08/19/2023  
 0.18 J 09/25/2023

**3602 Hampshire**  
 ND(0.50) 09/26/2022  
 ND(0.50) 01/09/2023  
 ND(0.50) 04/05/2023  
 ND(0.50) 06/29/2023  
 ND(0.50) 09/28/2023

**3313 Paper Mill**  
 ND(0.50) 09/21/2022  
 0.97 01/10/2023  
 2.6 04/05/2023  
 1.4 06/20/2023  
 4.8 09/25/2023

**14258 Jarro**  
 ND(0.50) 08/01/2022  
 ND(0.50) 10/19/2022  
 ND(0.50) 01/09/2023  
 ND(0.50) 04/05/2023  
 ND(0.50) 06/19/2023  
 ND(0.50) 09/25/2023

**14223 Robca**  
 ND(0.50) 01/06/2023  
 ND(0.50) 04/07/2023  
 ND(0.50) 06/22/2023  
 ND(0.50) 09/26/2023

**14301 Jarro**  
 0.41 J 09/21/2022  
 0.11 J 01/03/2023  
 0.34 J 04/05/2023  
 0.14 J 06/20/2023  
 2.8 09/26/2023

**14242 Jarro (1)**  
 ND(0.50) 09/21/2022  
 ND(0.50) 01/03/2023  
 ND(0.50) 04/05/2023  
 ND(0.50) 06/20/2023  
 ND(0.50) 09/28/2023

**14217 Robca**  
 1.3 09/26/2022  
 1.6 01/06/2023  
 0.21 J 04/07/2023  
 1.5 06/22/2023

**LEGEND**

- X Private Supply Well
- Sample Location w/ MTBE Detection Above Estimated Value in Current Quarter
- Property Boundaries (Approx.)
- Service Station Property Boundary
- Private Supply Well with EM POET
- Off-Site Private Supply Well
- Property Address (Addr.)
- MTBE (µg/L) - Sample Date

J = INDICATES AN ESTIMATED VALUE  
 ND(RL) = NOT DETECTED AT OR ABOVE THE LABORATORY REPORTING LIMIT (RL)  
 LABORATORY REPORTING LIMIT INCLUDED

**NOTE:**  
 1. DATA SHOWN FOR THE LAST YEAR OF RESULTS.  
 2. FOR THOSE LOCATIONS WITH POINT OF ENTRY TREATMENT (POET) SYSTEMS, THE RESULTS SHOWN REPRESENT THE LATEST (PP) SAMPLE RESULTS ONLY (i.e. COLLECTED PRIOR TO THE POET SYSTEM).  
 3. 14301 JARROVILLE PIKE WAS CONNECTED TO THE POTABLE SUPPLY WELL AT 3410 SWEET AIR ROAD ON 09/15/2022. THE RESULTS SHOWN ON THIS MAP FOR 14301 JARROVILLE PIKE WITH SAMPLE DATES AFTER 09/15/2022 ARE FROM THE WELL AT 3410 SWEET AIR ROAD. THE RESULTS SHOWN ON THIS MAP FOR 3410 SWEET AIR ROAD ARE FOR SAMPLING EVENTS PRIOR TO ITS CONNECTION TO 14301 JARROVILLE PIKE.

0 100 200 300 Feet  
 0 30 60 120 Meters

**FIGURE 2**  
 MTBE PRIVATE SUPPLY WELL RESULTS MAP

INACTIVE EXXON FACILITY #20977  
 14308 JARROVILLE PIKE  
 PHOENIX, MARYLAND

DRAWN BY: PMA SCALE: 1:2,000  
 REVISIONS BY: PMA PROJECT NO: 20180811  
 DATE: 11/8/2023 SOURCE: CONTACT KLEINFELDER  
 CHECKED BY: PMA FOR WISCONSIN

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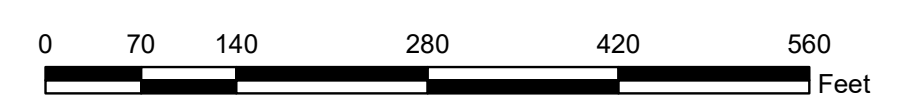
**Legend**

- Monitoring Only
- Dual Phase Extraction (DPE)
- Pneumatic Pump
- Soil Vapor Extraction (SVE)
- SVE/Pneumatic Pump
- Electric Pump
- Private Supply Well
- Surface Water Sample
- Abandoned Well
- GW Discharge
- GW Recovery Piping
- GW/SVE Recovery Piping
- SVE Recovery Piping
- Tank Field Piping
- Disconnected Piping
- GW Recovery System
- Fractionating Tank
- Liquid Carbon Filter
- Vapor Carbon Filter
- Electrical Equipment

- Remediation Systems**
- Influent Tank and Pumps
  - ESD DPE Claw (Replaced MLE DPE Claw)
  - SW Manifold
  - Effluent Tank and Pumps
  - HDD Conduit Containing
    - Communication Conduit
    - Influent Water Lines (NE)
    - Effluent Water Lines (NE)
    - Spare Lines
  - NE Air and Water Manifold Vaults
  - Compressors for Pneumatic Pump
  - Groundwater Treatment: Carbon Adsorbers
- Note: Pipe and Remediation System Locations and Scale are Approximate.

The information provided on this plan is based on data provided to the consultant by the client. The consultant has not conducted an independent investigation of the site. The consultant is not responsible for the accuracy or completeness of the information provided. The consultant is not responsible for the accuracy or completeness of the information provided. The consultant is not responsible for the accuracy or completeness of the information provided.

NOTE: MW-189D Location is Approximate



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PROJECT NO.	20193011
DRAWN:	8/10/23
DRAWN BY:	R. Alvarez
CHECKED BY:	J. Frascarella

**REMEDATION LAYOUT AS OF SEPTEMBER 30, 2023**

INACTIVE EXXON FACILITY #28077  
14258 JARRETTSVILLE PIKE  
PHOENIX, MARYLAND  
BALTIMORE COUNTY

**APPENDIX A**  
**FULL HISTORY OF REMEDIAL SYSTEM ACTIVITIES/MODIFICATIONS**

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## APPENDIX A – HISTORY OF REMEDIAL SYSTEM ACTIVITIES/MODIFICATIONS

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- February 17, 2006 – Onset of groundwater recovery activities using mobile remediation equipment.
- February 2006 to September 2006 – Temporary mobile groundwater recovery and treatment system; three SVE systems in the southwest quadrant - Flame Oxidizer 750, Bisco Dual Claw, and Bisco Liquid Ring Pump (LRP) DPE system; and, four SVE systems in the northeast quadrant - Flame Oxidizer 500, Airtech LRPs, MLE Claw 2, and ThermCat 500. Equipment operation and performance is detailed in the IRM Plan and Updated IRM Plan. Bisco LRP was shutdown in July 2006 and replaced with the MLE DPE Claw in August 2006, which extracts soil vapors and groundwater from the service station property extraction wells.
- October 2006 to March 2007 – Temporary groundwater treatment systems operated in the northeast quadrant; these were shutdown when the integrated groundwater treatment system was brought online.
- October 2006 to March 2008 – Temporary soil vapor extraction equipment was replaced with equipment designed for prolonged use at the site.
- February 5, 2007 – All recovered groundwater is treated on the service station property utilizing a combination of air stripping, a fluidized bed bioreactor, and liquid phase GAC.
- February 9, 2007 – ThermCat 500 (thermal oxidizer) was shutdown and was replaced by the Flame Oxidizer 500 SVE Blower extracting vapor from extraction wells in the northeast quadrant on 14307 Jarrettsville Pike, 3501 Hampshire Glen Court, and 3506 Hampshire Glen Court.
- February 9, 2007 – ESD Dual Claw SVE system was brought online, operating on wells formerly operated by the Flame Oxidizer 500 SVE Blower, extracting vapor from extraction wells in the northeast quadrant on 14301 Jarrettsville Pike and 14307 Jarrettsville Pike.
- May 31, 2007 – Temporary DPE system, Airtech LRPs (located on the Sweet Air Road property in the northeast quadrant) was shutdown, and replaced with the Bisco LRP DPE system (formerly used on the Service Station Property), extracting vapor and groundwater from extraction wells on 14307 Jarrettsville Pike and 3503 Hampshire Glen Court.
- May 31, 2007 – Flame Oxidizer 500 vapor treatment unit was shutdown (SVE Blower still operated) because soil vapor is below SVE general permit discharge limits and the vapors are now directed through vapor phase GAC prior to discharge to the atmosphere.
- May 31, 2007 – Flame Oxidizer 750 vapor treatment unit was shutdown (SVE Blower still operated) because soil vapors are below SVE general permit discharge limits and the vapors are now directed through vapor phase GAC prior to discharge to the atmosphere.
- August 9, 2007 – The Bisco LRP was relocated from 3410 Sweet Air Road to 3418 Sweet Air Road (northeast quadrant).
- August 10, 2007 – Flame Oxidizer 500 was taken offline, and transported offsite.

- August 10, 2007 – ESD Dual Claw Skid I was brought online to replace the Flame Oxidizer 500, extracting vapors from the extraction wells in the northeast quadrant on 14307 Jarrettsville Pike, 3501 Hampshire Glen Court, and 3506 Hampshire Glen Court and treating the vapors with vapor phase GAC.
- October 4, 2007 – Flame Oxidizer 750 was taken offline and transported offsite. Piping retrofit and installation of the ESD Tri-Lobe was initiated in the former Flame Oxidizer 750 area.
- October 12, 2007 – Bisco LRP was taken offline due to liquid ring pump failure, SVE wells operated by the Bisco LRP were re-directed to the ESD Dual Claw and ESD Dual Claw Skid I, and pneumatic pumps were added to MW-36, MW-74, and MW-75.
- October 31, 2007 – ESD Tri-Lobe SVE system was brought online to replace the Flame Oxidizer 750, extracting vapors from extraction wells on the service station property and treating vapors with vapor phase GAC.
- February 18, 2008 – MLE Claw 2 was taken offline and transported offsite, extracted vapors were temporarily re-directed to the ESD Dual Claw Skid I while installation of replacement system was initiated.
- March 11, 2008 – Northeast Bisco Dual Claw was brought online to replace the MLE Claw 2 (located on the 3508 Hampshire Glen Court property), extracting vapors from extraction wells on 3506, 3508, and 3600 Hampshire Glen Court, and treating vapors with vapor phase GAC on 3418 Sweet Air Road.
- March 31, 2008 – New recovery wells, MW-16R and MW-27R, were connected to the groundwater remediation system and brought online for both groundwater extraction using pneumatic pumps (GWP&T) and soil vapor extraction (SVE).
- May 7, 2008 – Two SW groundwater storage fractionating tanks were transported offsite.
- May 12, 2008 – New air compressor installed, Plant Air Compressor, supplying air to all SW and NE pneumatic pumps. Former air compressors remain in place as back-ups.
- June 10, 2008 – Effluent groundwater fractionating tank (T702) emptied into effluent fractionating tank (T701) and transported offsite.
- June 17, 2008 – Monitoring well MW-89 was brought online for both GWP&T and SVE.
- August 13, 2008 – Monitoring well MW-121 was connected to the groundwater remediation system and brought online for both GWP&T and SVE.
- September 10, 2008 – Monitoring well MW-45R was connected to the groundwater remediation system and brought online for both GWP&T and SVE.
- January 19-23, 2009 – Three SVE pilot test wells were installed on the service station property to further evaluate onsite SVE recovery in the former UST field area.
- February 6, 2009 – New air compressor installed as a back-up to the Plant Air Compressor; capable of supplying air to all SW and NE pneumatic pumps
- March 3, 2009 – Recovery well MW-36 converted from DPE to GWP&T and SVE.
- April 17, 2009 – Monitoring well MW-58R was connected to the groundwater remediation system and brought online for both GWP&T (NE02 Zone) and SVE (ESD Dual Claw Skid). Groundwater recovery and soil vapor extraction was re-started on MW-38.
- May 26, 2009 – Monitoring wells, MW-169, MW-170, and MW-171 were connected to the groundwater remediation system and brought online for both GWP&T (NE01) and SVE (ESD Dual Claw Skid).
- November 11, 2009 – Bisco Dual Claw SVE system permanently taken offline.

- November 13, 2009 – Recovery well, SVE-3, was transitioned to all-season below grade piping and reconnected to the groundwater recovery system.
- December 15, 2009 – Recovery wells, MW-78R and MW-100B, were taken offline for GWP&T. Northeast Bisco Dual SVE system permanently taken offline.
- February 18, 2010 – Recovery well, MW-34, was taken offline for GWP&T.
- March 17, 2010 – Recovery well, MW-33, was taken offline for GWP&T.
- April 19, 2010 – Recovery well, MW-51, was taken offline for GWP&T.
- May 24, 2010 – Recovery well, MW-124, was taken offline for GWP&T.
- May 28, 2010 – Monitoring well MW-91C was connected to the groundwater remediation system using temporary above grade piping; and brought online for GWP&T.
- June 1, 2010 – Monitoring well MW-54 was connected to the groundwater remediation system using temporary below grade piping; and brought online for GWP&T.
- June 22, 2010 – Recovery well MW-71 was taken offline for GWP&T.
- July 7, 2010 – Monitoring well SVE-1 was connected to the groundwater remediation system using temporary above grade piping; and brought online for GWP&T.
- September 20, 2010 – Begin LGAC-only treatment for low-concentration groundwater stream. Air stripper is maintained onsite.
- September 25, 2010 – Recovery well MW-54 was transitioned to all-season below grade piping.
- September 29, 2010 - Monitoring well MW-176 was connected to the groundwater remediation system using temporary above grade piping; and brought online for GWP&T.
- December 2, 2010 – Recovery wells MW-91C, MW-176, and SVE-1 were transitioned to all-season below grade piping.
- December 28, 2010 – Monitoring well MW-36R was connected to the groundwater remediation system and brought online for GWP&T. Recovery well MW-36 was taken offline for GWP&T.
- December 29, 2010 – Monitoring well MW-178C was connected to the groundwater remediation system and brought online for GWP&T.
- May 20, 2011 – Recovery well MW-28 was taken offline for GWP&T.
- June 15, 2011 – Recovery well MW-111 was taken offline for GWP&T.
- July 15, 2011 – Recovery well MW-102 was taken offline for GWP&T.
- August 15, 2011 – Recovery well MW-123 was taken offline for GWP&T.
- September 15, 2011 – Recovery well MW-113 was taken offline for GWP&T.
- October 12, 2011 – Recovery well MW-60 was taken offline for GWP&T.
- April 24, 2012 – Pneumatic pump in recovery well MW-171 identified as not operating properly and lodged in place inside the well borehole. Currently being used for monitoring only and “grab” sampling.
- May 15, 2012 – Monitoring well MW-54B was connected to the groundwater remediation system and brought online for GWP&T.
- June 20, 2012 – Monitoring well MW-139 was connected to the groundwater remediation system and brought online for GWP&T.
- July 20, 2012 – Monitoring well MW-181B was connected to the groundwater remediation system and brought online for GWP&T.

- July 31, 2012 – Monitoring wells MW-183, MW-184, and MW-185 were connected to the groundwater remediation system and brought online for GWP&T.
- August 31, 2012 – ESD TriLobe SVE system taken offline due to high temperature.
- September 6, 2012 – ESD TriLobe SVE system repaired and resumed operations.
- September 20, 2012 – Monitoring well MW-38C was connected to the groundwater remediation system and brought online for GWP&T.
- August 21, 2013 – Exposed piping was removed from a stream bed in southwest in accordance with MDE approved work plan.
- September 17, 2013 – Monitoring well SVE-2 was connected and activated to the groundwater remediation system using temporary above grade piping.
- October 2, 2013 – Soil vapor extraction initiated at SVE-2.
- October 10, 2013 – ESD Dual Claw Trailer and ESD Dual Claw Skid I SVE systems permanently taken offline.
- November 19, 2013 – Temporary groundwater recovery and soil vapor extraction was ceased at SVE-2 following completion of a two-month evaluation period using above grade piping.
- November 19, 2013 – Recovery wells MW-25 and MW-80A taken offline for GWP&T.
- December 13, 2013 – Recovery wells MW-80B and MW-109 taken offline for GWP&T.
- January 16, 2014 – Recovery well MW-31 was taken offline for GWP&T.
- February 12, 2014 – Recovery well MW-49 was taken offline for GWP&T.
- March 12, 2014 – Recovery well MW-119 was taken offline for GWP&T.
- April 11, 2014 – Recovery wells MW-55 and MW-112 were taken offline for GWP&T.
- May 12, 2014 – Recovery well MW-117 was taken offline for GWP&T.
- May 13, 2014 – MLE DPE Claw system permanently taken offline.
- June 18, 2014 – ESD DPE Claw system (former ESD Dual Claw Trailer in the Northeast) was brought online as a replacement for MLE DPE Claw.
- June 20, 2014 – Monitoring well SVE-2 was connected to the groundwater remediation system with all-weather below-grade piping, and brought online for GWP&T and SVE.
- September 22, 2014 – Monitoring well MW-82B was connected to the groundwater remediation system with all-weather below-grade piping, and brought online for GWP&T.
- November 3, 2014 – Monitoring well MW-187B was connected to the groundwater remediation system with all-weather below-grade piping, and brought online for GWP&T.
- March 25, 2015 – Monitoring well MW-187A was connected to the groundwater remediation system with all-weather below-grade piping, and brought online for GWP&T.
- April 14, 2015 – Bioreactor taken offline, subsequently approved for decommissioning on June 16, 2015.
- May 6, 2015 – Recovery wells MW-24, MW-26, MW-29, MW-30, MW-35, MW-52, and MW-154 were taken offline for GWP&T.
- June 15, 2015 – Soil vapor extraction initiated at MW-187A.
- July 21, 2015 – Electric pump in monitoring well MW-82B replaced with pneumatic pump.
- August 11, 2015 – Soil vapor extraction initiated at MW-187B.
- August 31, 2015 - Recovery wells MW-40, MW-72, MW-116, MW-118, MW-126, MW-127, and MW-156 were taken offline for GWP&T.

- September 18, 2015 – Soil vapor extraction discontinued from MW-187A.
- September 21, 2015 – Removal of FLUTe™ liner from MW-78C.
- May 11, 2016 – Soil vapor extraction resumed at MW-187A.
- May 18, 2016 - well MW-151 was taken offline for GWP&T.
- June 6, 2016 – Begin carbon only treatment for all groundwater recovery zones.
- July 26, 2016 – Install new HDPE underground piping and valve manifolds within subsurface vaults to permanently bypass the above-grade groundwater processing and storage equipment located in the northeast. Permanently remove northeast lift station, northeast tank 201, and northeast manifold room from GWP&T operation.
- October 27, 2016 – Remove offline LGAC vessels from NE remediation section.
- December 7, 2016 – Recovery well MW-32 converted to a monitoring well only after the water return line failed due to corrosion.
- December 2016 – Remove remaining above-grade equipment and components from the NE remediation section.
- April 12, 2017 – Tri-Lobe SVE system taken offline indefinitely; SVE wells MW-7, MW-16R, MW-27R, MW-187A and MW-187B connected to the ESD DPE law system.
- June 23, 2017 – Pump removed from MW-139 to replace non-functioning pump in MW-187B.
- September 19, 2017 – Pneumatic pump installed in MW-168 for temporary pump test, running off of air supply and water return from the MW-169 vault.
- October 10, 2017 – Pumps in recovery wells MW-178C and MW-183 were lowered an additional 50 feet to a total depth of 200 feet below grade.
- October 23 and 24, 2017 – Recovery well MW-181B was converted into a monitoring well. Monitoring well MW-181A was converted into a recovery well.
- December 29, 2017 – Pump and temporary above-grade piping connections removed from MW-168, terminating temporary pumping test.
- February 26, 2018 – One of the southwest influent tanks (T-102) was removed from site, all influent (untreated water) is now stored in remaining tank T-202.
- April 16, 2018 – Pneumatic pump reinstalled in MW-168, to continue pumping test longer-term.
- July 30, 2018 – MW-59D converted into a monitoring well as part of the MDE-approved Northeast sequential recovery well conversion. MW-151 pump removed from service.
- August 3, 2018 – MW-59B pump removed from service, MW-59D redeveloped.
- August 13, 2018 – Recovery well MW-57 converted into a monitoring well as part of the MDE-approved Northeast sequential recovery well conversion. Other wells approved for conversion had pumps removed as previously reported, including MW-181B removed on 10/23/17, MW-76 removed on 5/21/18, MW-59D removed on 7/30/18, MW-32 removed 12/7/17, and MW-43A removed on 1/31/13.
- August 30, 2018 – MW-59B pump reinstalled.
- September 11, 2018 – Subterranean leak was identified at location of abandoned well MW-51. Air turned off to southwest zones A-E.

- September 12 through 13, 2018 – Recovery wells MW-110, MW-85, MW-77A were converted into monitoring wells and redeveloped as part of the MDE-approved Northeast sequential recovery well conversion. Also scheduled for monitoring well conversion in September was MW-58, although the pump for MW-58 had already been removed on 3/28/18 due to the pump not functioning properly.
- September 27, 2018 - Pump and temporary above-grade piping connections removed from MW-168, terminating temporary pumping test.
- October 8, 2018 – Recovery wells MW-36R, MW-77R, MW-87, and MW-137 were converted into monitoring wells and redeveloped as part of the MDE-approved Northeast sequential recovery well conversion.
- October 16, 2018 – Pump installed in MW-187C to a depth of 150’ bgs.
- October 26, 2018 – Pumps were removed from MW-9 and MW-17.
- November 6, 2018 - Recovery well MW-77B was converted into a monitoring well and redeveloped as part of the MDE-approved Northeast sequential recovery well conversion.
- November 7, 2018 – Recovery wells MW-58R, MW-82, and MW-84 were converted into monitoring wells and redeveloped as part of the MDE-approved Northeast sequential recovery well conversion.
- December 5, 2018 – MW-188D Packer removed and purged of 275 gallons.
- December 5 through 20, 2018 – New remediation system components (influent tank T-100, effluent tank T-200, transfer pumps and totalizers) installed in former service bay area and tested.
- January 3, 2019 – Commissioning of new groundwater treatment system results in all recovered water being treated through new influent/effluent tanks, transfer pumps and totalizers.
- January 18, 2019 – Former influent and effluent frac tanks dewatered and fully removed from service.
- February 11, 2019 – Former discharge trailer and southwest lift station decommissioned and removed from the site.
- March 5, 2019 – Recovery well pump in MW-54B deepened to 115’ below top of casing and recovery well pump in MW-38C deepened to 150’ below top of casing with MDE approval.
- April 8, 2019 – Recovery well pump installed to 150’ below top of casing in MW-138D and connected to the recovery network.
- April 26, 2019 - Recovery wells MW-169 and MW-185 were converted into monitoring wells and redeveloped as part of the MDE-approved Northeast sequential recovery well conversion.
- May 3, 2019 – Recovery well pump installed to 150’ below top of casing in MW-82D.
- May 10, 2019 – Recovery well pump installed to 150’ below top of casing in MW-73C; temporary above-ground piping connections were made to the vault in MW-178C for on-going pump test.
- May 22 through June 5, 2019 – A total of 48 monitoring wells were abandoned in accordance with the MDE-approved *Groundwater Monitoring Reduction and Well Abandonment Request* submitted on January 22, 2019.
- June 10 through 12, 2019 – Recovery wells MW-1A, MW-6, MW-91C, and MW-152 were converted to monitoring wells and redeveloped as part of the MDE-approved sequential recovery well conversion.
- July 8 through 12, 2019 – Recovery wells MW-22 and MW-74 were converted to monitoring wells and redeveloped as part of the MDE-approved sequential recovery well conversion.



- July 30 through 31, 2019 – Recovery wells MW-21, MW-2A, and MW-38 were converted to monitoring wells and redeveloped as part of the MDE-approved sequential recovery well conversion.
- October 1 through 2, 2019 – Recovery wells MW-19, MW-23, MW-75, and MW-170 were converted to monitoring wells and redeveloped as part of the MDE-approved sequential recovery well conversion.
- October 29, 2019 – MW-138D and MW-187C were lowered 20' to increase groundwater recovery.
- November 5, 2019 – MW-73C pump taken offline in advance of winter and rebound testing. Sparge device installed to depth of 150' in MW-91C to test potential remedial effectiveness in bedrock aquifer.
- March 10, 2020 – Recovery well pump installed to 150' below top of casing in MW-73C; temporary above-ground piping connections were made to the vault in MW-178C for on-going pump test.
- April 20, 2020 – Sparge device removed from MW-91C upon conclusion of six month test period.
- April 28, 2020 – SVE/DPE system taken offline after receiving approval from the MDE.
- May 5, 2020 – Former DPE wells MW-3, MW-13, and MW-27 were converted into pneumatic recovery wells. Pneumatic recovery well MW-4 taken offline, with its pump being used to initiate recovery in MW-3. Monitoring well MW-16 was converted into a pneumatic recovery well.
- June 30, 2020 – Recovery wells MW-37, MW-82R, and MW-89 were converted to monitoring wells and redeveloped as part of the MDE-approved sequential recovery well conversion.
- July 1, 2020 – Recovery wells MW-27R and MW-121 were taken offline as part of the MDE-approved sequential recovery well conversion.
- July 21 to July 23, 2020 – Monitoring wells MW-30P, MW-34P, MW-36P, MW-37P, MW-38P, MW-45P, MW-57P, MW-58P, MW-58R, MW-63, MW-76P, MW-85P, MW-103, MW-119, MW-122, MW-130, MW-132A, MW-134A, MW-134B, MW-136, MW-142, MW-145P, MW-150A, MW-156 and MW-157P were abandoned as part of the MDE-approved monitoring well reduction and abandonment plan.
- July 23, 2020 – Recovery well MW-183 depth of pump changed from 200 feet below grade to 150 feet below grade per MDE request.
- July 27, 2020 – Monitoring wells MW-84P, MW-86, MW-87P and MW-104 were abandoned as part of the MDE-approved monitoring well reduction and abandonment plan.
- August 3 to August 5, 2020 – Recovery wells MW-7, MW-13, MW-59B, MW-82B, MW-151, MW-176, MW-184 and SVE-2 were taken offline as part of the MDE-approved sequential recovery well conversions.
- December 15, 2020 – Recovery well MW-73C pump taken offline in advance of winter.
- March 29, 2021 – Recovery well MW-73C pump taken online after winter.
- June 28, to June 30, 2021 – Recovery wells MW-16, MW-27, MW-54B, MW-82D, and MW-181A were taken offline as part of an MDE-approved sequential recovery well conversion.
- March 11, 2022 – Groundwater pump and treat system taken offline for the Recovery Well Cycling test.
- May 27, 2022 – Groundwater pump and treat system brought online for a two week period.
- June 8, 2022 – Groundwater pump and treat system taken offline to resume the Recovery Well Cycling test.
- August 31, 2022 – Recovery pumps reinstalled, however the system compressor was non-functional and the groundwater recovery system remained offline.
- October 20, 2022 – New compressor installed and system restarted. Groundwater pump and treat system resumed operation with recovery wells at MW-187A, MW-187C, and MW-178C online.

- November 21, 2022 – Groundwater pump and treat system taken offline to continue cycling test.
- December 9, 2022 – Groundwater pump and treat system brought back online with MW-187A, MW-187C and MW-178C operational.
- January 10, 2023 - Recovery well MW-54B brought back online.
- January 27, 2023 – Recovery well MW-178C was taken offline and pump removed. Pump reinstalled in recovery well MW-38C and brought back online.
- February 28, 2023 - Groundwater pump and treat system taken offline to begin cycling test.
- March 27, 2023 - Groundwater pump and treat system taken online to continue cycling test.
- April 28, 2023 - Groundwater pump and treat system taken offline to continue cycling test.
- June 1, 2023 - Groundwater pump and treat system taken online to conclude cycling test.
- July 18, 2023 – Influent groundwater redirected to avoid blockage, bypassing influent totalizers.