



**FEDEX: 773820672357**

May 26, 2021

Kleinfelder Project No.: 20193011.001A

Mr. Christopher Ralston  
Maryland Department of the Environment  
1800 Washington Boulevard  
Baltimore, Maryland 21230

**SUBJECT: SEQUENTIAL CONVERSION OF SELECT WELLS PROPOSED WORK PLAN  
Inactive Exxon Facility #28077  
14258 Jarrettsville Pike, Phoenix, Maryland  
MDE Case No. 2006-0303-BA2**

Dear Mr. Ralston:

Kleinfelder Inc. (Kleinfelder), on behalf of ExxonMobil Environmental & Property Solutions (ExxonMobil), is submitting this Work Plan to the Maryland Department of the Environment (MDE) Oil Control Program to propose the next phase of groundwater recovery well (RW) conversions for the Inactive Exxon Facility #28077 (Case Number 2006-0303-BA2) site. This phase of RW conversions is consistent with the June 2018 Court Order (Flowchart 1 – Conversion of Recovery Well (RW) to Monitoring Well (MW), included as **Appendix A**. The RW conversions were approved by the MDE in the *Response to Rebound Test Work Plan* letter dated April 23, 2021 (**Appendix B**), pending a revised monitoring proposal.

### **Previous Recovery Well Conversion History**

Nine sequential RW conversions were completed in the southwest area from 2010 through 2020 to cease groundwater recovery from 97 wells no longer needed to achieve remediation objectives. No sustained rebound concentrations were observed following cessation of groundwater recovery in the vicinity or downgradient of the 97 converted RWs.

### **Proposed Sequential Recovery Well Conversions**

According to Flowchart 1 (Appendix 1), six groundwater RWs meet the criteria for rebound assessment (below MDE standards for gasoline constituents for  $\geq 1$  year). Many of these RWs have been below MDE standards for gasoline constituents for longer than one year. We will continue to perform biosparging on well MW-91C to continue to enhance natural attenuation in the vicinity and downgradient of the biosparge activity. As a result, we propose converting five RWs. The RWs proposed for conversion are shown on **Figure 1** and well construction details are summarized in **Table 1**.

Based on the success of previous sequential RW conversions in the southwest and northeast, the conversion of the five approved additional RWs is proposed in a single group. The Well ID, total depth, rationale, well screen interval, and screened/open-hole interval details are summarized below:

Group	Well ID	Rationale for Conversion to Monitoring Well (Concentration Values in µg/L)	Total Depth	Screen/Open Interval
1	MW-16	MtBE <20 µg/L for > 1 year	38'	20-38'
	MW-27	MtBE <20 µg/L for > 1 year	43'	27-43'
	MW-54B	MtBE <20 µg/L for > 1 year	125'	57-125'
	MW-82D	MtBE <20 µg/L for > 1 year	380'	125-380'
	MW-181A	MtBE <20 µg/L for > 1 year	60'	30-60'

### Implementation

This phase of RW conversions will be conducted as previous events, where the recovery wells will be shutdown, re-developed, and sampled monthly for three consecutive months following shutdown. In addition, five nearby monitoring wells (MW-7, MW-27B, MW-32, MW-38B, and MW-82B) will be gauged and sampled monthly during the well conversion and monitoring period. Following completion of the RW conversion and monitoring activities, the sampling of these additional five wells will return to the MDE-approved monitoring frequency (quarterly).

Groundwater analytical and potentiometric data will be evaluated throughout the sequential shutdown period as described above. If a recovery well conversion results in rebound, we will notify the MDE and potentially resume recovery. A summary report will be provided to the MDE at the conclusion of the sequential shut-down and monitoring period.

### LIMITATIONS

Kleinfelder performed the services for this project under the Enabling Agreement with Procurement, a division of ExxonMobil Global Services Company (signed on November 28, 2012). Kleinfelder states that the services provided are consistent with professional of care defined as that level of services provided by similar professionals under like circumstances. This report is based on the regulatory standards in effect on the date of the report. It has been produced for the primary benefit of ExxonMobil Global Services Company and its affiliates.

Please contact the undersigned with any questions or requests for additional information.

Sincerely,

**KLEINFELDER**



Charlie Low  
Environmental Scientist



Mark J. Schaaf, C.P.G.  
Project Director

cc: Ms. Ellen Jackson – MDE Oil Control Program  
Mr. Andrew Miller – MDE Oil Control Program  
Stephanie Cobb Williams, Esq. – Office of the Attorney General  
Mr. Kehat Falik – ExxonMobil (project file)  
Carlos Bollar, Esq. – Archer & Greiner

**APPENDICES**

- A Flowchart 1
- B MDE Response to Rebound Test Work Plan

**TABLES**

- 1 Well Construction Details

**FIGURES**

- 1 Recovery Wells Proposed for Conversion



## APPENDICES

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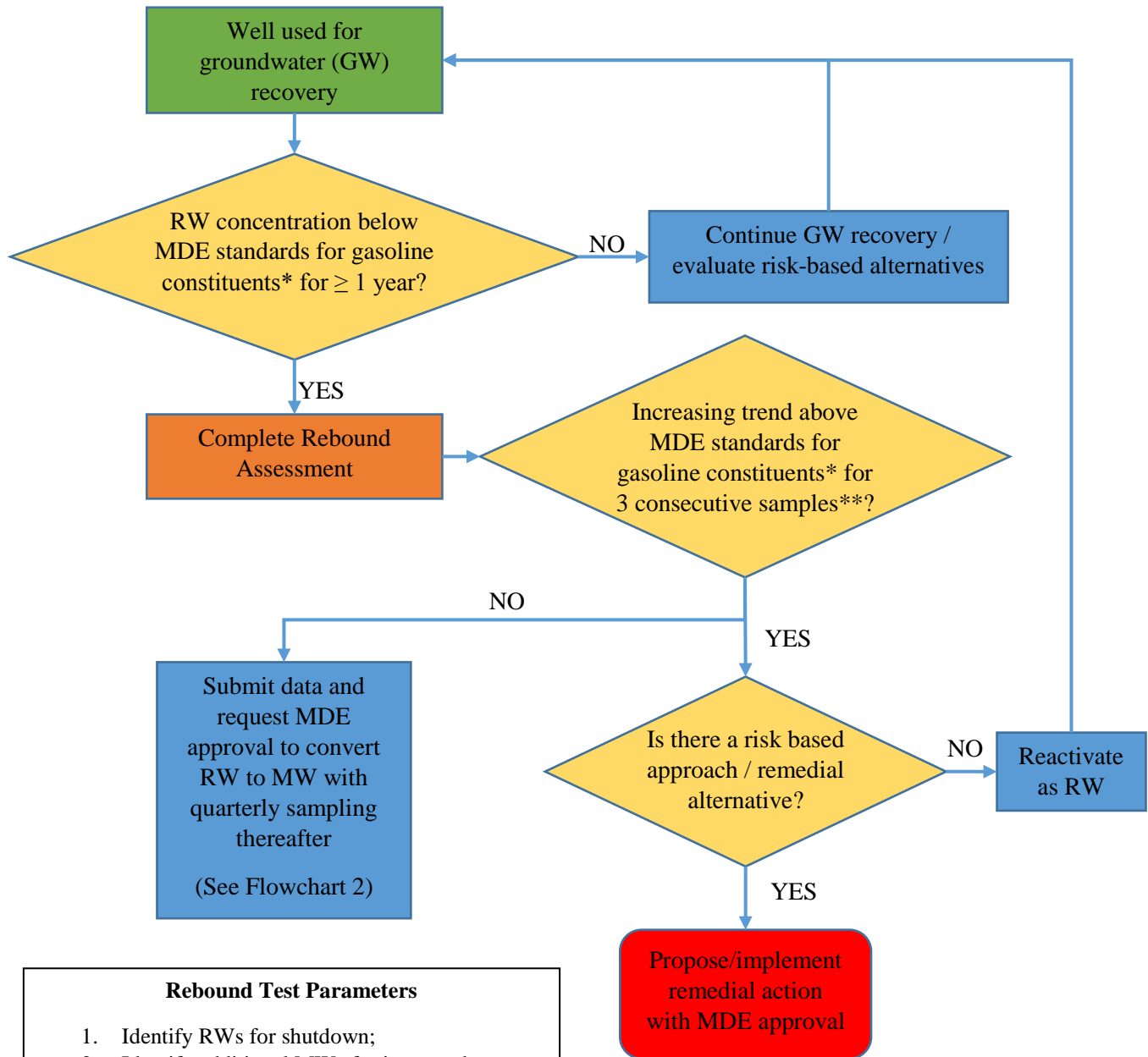
# Flowchart 1

## Conversion of Recovery Well to Monitoring Well

Effective January 1, 2018

The process described in paragraph 8 of the Order of Resolution dated June 6, 2018 and the flow charts referenced herein are the product of the agreed upon resolution of a dispute between MDE and ExxonMobil are not to be considered precedent or MDE policy for other sites or other circumstances.

# Flowchart 1: Conversion of Recovery Well (RW) to Monitoring Well (MW)



- Rebound Test Parameters**
1. Identify RWs for shutdown;
  2. Identify additional MWs for increased sampling during rebound period;
  3. Submit proposed RW shutdown and rebound sampling plan to MDE for approval;
  4. After RWs turned off, monitor RWs and selected additional MWs monthly for 3 months; then continue monitoring quarterly thereafter.

\*MDE, June 2008, State of Maryland Department of the Environment, Cleanup Standards for Soil and Groundwater, Interim Final Guidance, Update No. 2.1

\*\*Three consecutive increasing sample results all above MDE standards for gasoline constituents



April 23, 2021

Mr. Kehat Falik  
Project Manager  
ExxonMobil Environmental Services  
38 Varick Street  
Brooklyn, NY 11222

**RE: RESPONSE TO REBOUND TEST WORK PLAN**  
**Case No. 2006-0303-BA**  
**Former Exxon R/S No. 2-8077**  
**14258 Jarrettsville Pike, Phoenix**  
**Baltimore County, Maryland**

Dear Mr. Falik:

The Maryland Department of the Environment's (MDE) Oil Control Program (OCP) completed a review of the *Remediation Progress Report and Rebound Test Work Plan*, dated February 8, 2021. The *Work Plan* proposes to deactivate the remaining 20 groundwater remediation wells (19 groundwater pump and treat recovery wells and 1 air sparge well) within the Jacksonville study area. Five of the proposed recovery wells and the air sparge well have concentrations that meet the criteria established in Flowchart 1 of the Consent Decree. The remaining locations did not meet these conditions at the time of the proposal and, in some instances, the recovery wells continued to demonstrate contaminant concentrations over the last 12 months that were an order of magnitude greater than the applicable groundwater standard (e.g., MW-73C, MW-138D, MW-187A, and MW-187C).

The MDE approves ExxonMobil's proposal to discontinue recovery and air sparging activities at the following wells and convert them to monitoring wells: MW-16, MW-27, MW-54B, MW-82D, MW-181A, and MW-91C. However, because the original proposal provided a monitoring plan based on monitoring shutdown of all recovery wells, MDE requests a revised monitoring proposal be provided for review and approval that is tailored to the conversion of the six approved wells.

While MDE agrees to these modifications to groundwater recovery activities pursuant to the Consent Decree and its negotiated requirements with respect to this case involving Former Exxon R/S No. 2-8077, the State of Maryland, including all its departments, reserves all rights against ExxonMobil Corporation with respect to all other past, present, and future cases. The MDE reserves the right to require additional groundwater recovery and/or sampling based on new information, changing site conditions, or as a final sampling event prior to issuing case closure.

Mr. Kehat Falik  
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If you have any questions, please contact the case manager, Ms. Ellen Jackson at 410-537-3482 ([ellen.jackson@maryland.gov](mailto:ellen.jackson@maryland.gov)) or me at 410-537-3442 or [andrew.miller@maryland.gov](mailto:andrew.miller@maryland.gov).

Sincerely,



Andrew B. Miller, Chief  
Remediation Division  
Oil Control Program

cc: Alicyn Craig, Esquire, ExxonMobil Corp.  
Mr. Mark Schaaf, Kleinfelder East, Inc.  
Mr. Kevin Koepenick, Manager, Groundwater Management Sect., Baltimore County DEPS  
Ms. Ellen Jackson, Case Manager, Remediation Division, Oil Control Program  
Ms. Julie Kuspa, Esquire, MDE Office of Attorney General  
Mr. Christopher H. Ralston, Program Manager, Oil Control Program



## TABLES

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Table 1  
Well Construction and Remediation Well Summary  
Inactive Exxon Facility # 28077  
14258 Jarrettsville Pike  
Phoenix, MD  
March 31, 2021

Well ID	Borehole Diameter (inch)	Well Diameter (inch)	Riser/Casing Length (feet)	Screen Length/ Open Interval (feet)	Total Borehole Depth (feet)	Screen Interval (feet) below TOC	TOC Elevation	Pump Type	Pump Depths	Comment
MW-1	6	2	20	25	45	20-45	586.80			
MW-1A	10	6	35	20	55	35-55	586.09			Recovery activities ceased 6/10/2019
MW-2	6	2	20	30	50	20-50	588.28			
MW-2A	10	6	35	20	55	35-55	587.56			Recovery activities ceased 7/30/2019
MW-3	6	2	20	30	50	20-50	590.83	Pneumatic	44.00	Converted from DPE to Pneumatic 5/5/2020
MW-3P*	6	2	30	20	50	30-50	590.09			Well abandoned 6/4/2019
MW-4	6	2	15	35	50	15-50	592.13			Recovery activities ceased 5/5/2020
MW-4A	10	6	35	20	55	35-55	589.08			
MW-5	10	6	20	25	45	20-45	589.74			
MW-6	10	6	20	30	50	20-50	589.01			DPE activities ceased 6/10/2019
MW-6P*	6	2	30	20	50	30-50	590.47			Well abandoned 6/3/2019
MW-7	10	6	20	35	55	20-55	591.79			Recovery activities ceased on 8/4/2020
MW-8	8	4	25	20	45	25-45	590.75			
MW-9	8	4	25	25	50	25-50	588.99			Recovery activities ceased 9/11/2018
MW-10*	10	~	~	~	34.5	~	~			Borehole abandoned (well never installed)
MW-11*	10	~	~	~	150	~	~			Borehole abandoned (well never installed)
MW-12	10	4	20	15	35	20-35	587.90			
MW-13	8	4	25	10	35	25-35	589.30			Recovery activities ceased on 8/4/2020
MW-13P	6	2	30	20	50	30-50	591.54			
MW-14	8	4	20	25	45	20-45	592.13			
MW-15	10	4	15	20	35	15-35	584.29			
MW-16	8	4	20	18	38	20-38	591.99	Pneumatic	32.00	Converted to Pneumatic 5/5/2020
MW-16R	10	6	45	15	60	45-60	591.89	Pneumatic	55.00	SVE Offline on 4/12/2017
MW-17	8	4	25	25	50	25-50	588.19			Recovery activities ceased 9/11/2018
MW-18*	10	~	~	~	46	~	~			Borehole abandoned (well never installed)
MW-19	10	6	20	25	45	20-45	587.43			Recovery activities ceased on 10/1/2019
MW-20	8	4	20	20	40	20-40	592.80			
MW-21	10	6	20	25	45	20-45	586.81			Recovery activities ceased 7/30/2019
MW-22	10	6	20	25	45	20-45	587.01			Recovery activities ceased 7/8/2019
MW-23	10	6	20	25	45	20-45	585.66			Recovery activities ceased 10/1/2019
MW-24	8	4	20	15	35	20-35	580.33			Recovery activities ceased 5/6/2015
MW-25	10	6	25	30	55	25-55	592.34			Recovery activities ceased 11/19/2013
MW-26	10	6	25	20	45	25-45	578.25			Recovery activities ceased 5/6/2015
MW-27	10	6	27	16	43	27-43	591.78	Pneumatic	34.00	Converted from DPE to Pneumatic 5/5/2020
MW-27B	10	6	60	65	125	60-125	591.87			
MW-27P*	6	2	35	20	55	35-55	592.96			Well abandoned 6/4/2019
MW-27R	10	6	30	30	60	30-60	592.07			Recovery activities ceased 7/1/2020
MW-28*	10	6	20	25	46	20-45	579.26			Well abandoned 7/21/2020
MW-29	10	6	10	20	30	10-30	564.28			Recovery activities ceased 5/6/2015
MW-30	10	6	10	25	35	10-35	564.05			Recovery activities ceased 5/6/2015
MW-30P*	3	1	15	15	30	15-30	564.35			Well abandoned 7/21/2020
MW-31*	10	6	10	20	30	10-30	564.31			Well abandoned 5/22/2019
MW-32	10	6	30	20	50	30-50	593.09			Recovery activities ceased 12/7/2017
MW-33*	10	6	10	20	30	10-30	563.26			Well abandoned 2/20/2018
MW-33P*	3	1	15	25	40	15-40	563.65			Well abandoned 5/22/2019
MW-34*	10	6	10	20	30	10-30	564.82			Well abandoned 2/20/2018
MW-34P*	3	1	18	20	38	18-38	565.06			Well abandoned 7/21/2020
MW-35*	10	6	10	20	30	10-30	564.37			Well abandoned 2/20/2018
MW-36	10	6	15	30	50.5	15-45	590.05			Recovery activities ceased 12/28/2010
MW-36C	15	10	125	299	424	125-424	NSVD			Well deepened 8/18/2013
MW-36P*	6	2	15	30	45	15-45	589.65			Well abandoned 7/23/2020
MW-36R	10	6	30	50	80	30-80	589.54			Recovery activities ceased 10/8/2018
MW-37	10	6	40	56	100	40-96	591.26			Recovery activities ceased 6/30/2020
MW-37P*	6	2	36	60	98	36-96	590.81			Well abandoned 7/23/2020
MW-38	10	6	23	40	70	23-63	594.61			Recovery activities ceased 7/31/2019
MW-38B	10	6	68	57	125	68-125	596.00			
MW-38C	15	10	125	175	300	125-300	595.49	Pneumatic	150.00	
MW-38P*	6	2	23	40	63	23-63	595.94			Well abandoned 7/23/2020
MW-39*	10	6	15	20	35	15-35	574.80			Well abandoned 2/20/2018
MW-40	10	6	5	25	30	5-30	558.89			Recovery activities ceased 8/31/2015
MW-41A	6	2	15	20	35	15-35	549.12			
MW-41B	6	2	48	10	58	48-58	549.55			
MW-41C	10	6	60	290	350	60-350	549.33			
MW-42A	6	2	15	20	35	15-35	579.72			
MW-42B	6	2	45	10	55	45-55	580.00			
MW-42C	6	6	60	290	350	60-350	579.43			

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MW-43A	6	2	20	20	40	20-40	575.95			Recovery activities ceased on 1/31/2013
MW-43B	6	2	45	10	55	45-55	576.94			
MW-44	8	4	20	20	40	20-40	577.62			
MW-45	10	6	53	20	75	53-73	593.71	Pneumatic	68.00	
MW-45P*	6	2	52.5	20	72.5	52.5-72.5	593.30			Well abandoned 7/23/2020
MW-45R	8	6	70	20	90	70-90	593.80	Pneumatic	85.00	Pump lowered to 85 feet on 10/25/2019
MW-46	8	4	35	25	60	35-60	587.70			
MW-47A	6	2	20	20	40	20-40	583.91			
MW-47B*	6	2	45	10	55	45-55	583.85			Well abandoned 5/30/2019
MW-47BB	10	6	55	70	125	55-125	587.45			
MW-47C	15	10	125	175	300	125-300	587.18			
MW-48A	6	2	20	20	40	20-40	569.69			
MW-48B	6	2	45	10	55	45-55	569.60			
MW-48D	10	6	55	348	403	55-403	569.34			
MW-49*	10	6	20	25	45	20-45	567.40			Well abandoned 7/21/2020
MW-50	8	4	20	20	40	20-40	581.85			
MW-50B	6	2	45	10	55	45-55	581.93			
MW-50C	6	6	60	240	300	60-300	581.69			
MW-51*	10	6	20	25	45	20-45	565.61			Well abandoned 2/20/2018
MW-52	10	6	20	50	70	20-70	582.08			Recovery activities ceased 5/6/2015
MW-53A	6	2	15	20	35	15-35	539.98			
MW-53B	6	2	45	10	55	45-55	539.64			
MW-53C	10	6	60	290	350	60-350	538.57			
MW-54	10	6	16	40	56	16-56	597.93			
MW-54B	10	6	57	68	125	57-125	597.55	Pneumatic	115.00	
MW-54C	15	10	125	175	300	125-300	596.53			
MW-55*	10	6	10	30	40	10-40	551.65			Well abandoned 2/21/2018
MW-56A	6	2	15	20	35	15-35	540.23			
MW-56B	6	2	45	10	55	45-55	540.28			
MW-56C	10	6	60	290	350	60-350	540.30			
MW-57	10	6	25	40	65	25-65	582.34			Recovery activities ceased 8/13/2018
MW-57P*	6	2	20	50	70	20-70	582.16			Well abandoned 7/22/2020
MW-58	10	6	35	30	65	35-65	581.17			Recovery activities ceased on 3/28/2018
MW-58P*	6	2	20	50	70	20-70	582.57			Well abandoned 7/22/2020
MW-58R*	6	6	35	45	80	35-80	581.95			Well abandoned 7/22/2020
MW-59A	6	2	20	20	40	20-40	570.75			
MW-59B	6	2	45	10	55	45-55	571.07			Recovery activities ceased 8/3/2020
MW-59D	10	6	23	25	50	23-48	570.54			Recovery activities ceased 7/30/2018
MW-60	10	6	10	30	40	10-40	548.92			Recovery activities ceased 10/12/2011
MW-61A	6	2	15	20	35	15-35	563.92			
MW-61B	6	2	45	10	55	45-55	563.53			
MW-62A*	6	2	25	20	45	25-45	578.24			Well abandoned 5/30/2019
MW-62B*	6	2	45	10	55	45-55	577.89			Well abandoned 5/30/2019
MW-63*	10	6	16	20	40	16-36	546.62			Well abandoned 7/21/2020
MW-64*	10	6	5	25	30	5-30	540.47			Well abandoned 8/8/2012
MW-65*	10	6	5	25	30	5-30	536.39			Well abandoned 6/3/2019
MW-66	10	6	5	25	30	5-30	535.53			
MW-67	10	6	10	30	40	10-40	542.78			
MW-68	8	4	5	25	30	5-30	526.39			
MW-69	8	4	5	25	30	5-30	533.06			
MW-70*	10	6	25	25	50	25-50	NSVD			Well abandoned 6/3/2019
MW-71*	10	6	10	30	40	10-40	550.22			Well abandoned 7/21/2020
MW-72	10	6	10	30	40	10-40	555.80			Recovery activities ceased 8/31/2015
MW-73	10	6	25	40	65	25-65	600.37			
MW-73C	10	6	125	175	300	125-300	NSVD	Pneumatic	200.00	Seasonal recovery, pump online 3/29/2021
MW-74*	10	6	20	30	50	20-50	576.85			Well abandoned 3/16/2020
MW-75	10	6	25	25	50	25-50	573.54			Recovery activities ceased 10/2/2019
MW-76	10	6	20	36	56	20-56	559.26			Recovery activities ceased 5/21/2018
MW-76P*	6	2	20	30	50	20-50	560.29			Well abandoned 7/23/2020
MW-77A	10	6	10	15	25	10-25	548.96			Recovery activities ceased 9/12/2018
MW-77B	10	6	33	10	43	33-43	548.69			Recovery activities ceased 11/7/2018
MW-77R	10	6	15	30	50	15-45	549.58			Recovery activities ceased 10/8/2018
MW-78A	8	4	2	18	22	2-20	530.77			
MW-78B*	10	4	35	10	45	35-45	530.42			Well abandoned 6/5/2019
MW-78C	10	6	60	240	300	60-300	531.42			
MW-78R*	10	6	20	50	75	20-70	530.60			Well abandoned 6/5/2019
MW-79*	8	4	2	8	10	2-10	521.42			Well abandoned 6/5/2019

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March 31, 2021

Well ID	Borehole Diameter (inch)	Well Diameter (inch)	Riser/Casing Length (feet)	Screen Length/ Open Interval (feet)	Total Borehole Depth (feet)	Screen Interval (feet) below TOC	TOC Elevation	Pump Type	Pump Depths	Comment
MW-80A	10	6	5	25	35	5-30	542.42			Recovery activities ceased 11/19/2013
MW-80B	10	6	38.5	10	48.5	38.5-48.5	542.57			Recovery activities ceased 12/13/2013
MW-81	10	6	5	20	25	5-25	540.77			
MW-82	10	6	5	20	25	5-25	546.28			Recovery activities ceased 11/7/2018
MW-82B	10	6	50	75	125	50-125	546.68			Recovery activities ceased 8/3/2020
MW-82D	12	6	125	255	380	125-380	547.12	Pneumatic	150.00	Recovery initiated on 5/3/2019
MW-82R	10	6	3	35	46	3-38	546.80			Recovery activities ceased 6/30/2020
MW-83	10	6	10	15	25	10-25	553.96			
MW-83R	10	6	20	30	50	20-50	554.78			
MW-84	10	6	40	20	60	40-60	592.95			Recovery activities ceased 11/7/2018
MW-84P*	6	2	40	20	60	40-60	593.13			Well abandoned 7/27/2020
MW-85	10	6	40	20	60	40-60	591.65			Recovery activities ceased 9/12/18
MW-85P*	6	2	35	25	60	35-60	591.17			Well abandoned 7/23/2020
MW-86*	10	6	40	20	60	40-60	591.05			Well abandoned 7/27/2020
MW-86P*	6	2	35	25	60	35-60	590.86			Well abandoned 5/31/2019
MW-87	10	6	40	20	60	40-60	590.96			Recovery activities ceased 10/8/2018
MW-87P*	6	2	35	25	60	35-60	590.62			Well abandoned 7/27/2020
MW-88	10	6	37.5	20	60	37.5-57.5	592.43			
MW-88P*	6	2	40	20	60	40-60	592.71			Well abandoned 5/31/2019
MW-89	8	4	10	25	40	10-40	562.36			Recovery activities ceased 6/30/2020
MW-90*	10	6	20	30	50	20-50	578.37			Well abandoned 3/16/2020
MW-91	10	6	42	30	75	42-72	585.95			
MW-91C	15	10	80	217.4	297.4	80-297.4	586.25			Recovery activities ceased 6/12/2019
MW-91D	15	6	400	20	420	400-420	586.66			
MW-92*	6	2	69	40	109	69-109	557.70			Well abandoned 5/30/2019
MW-92A	8	4	20	20	40	20-40	558.49			
MW-92C*	6	6	60	340	400	60-400	558.10			Well abandoned 5/30/2019
MW-93*	6	2	27	15	45	27-42	578.49			Well abandoned 5/31/2019
MW-93B*	8	4	55	20	80	55-75	578.32			Well abandoned 5/31/2019
MW-93C*	6	6	80	220	300	80-300	579.02			Well abandoned 5/31/2019
MW-94	6	2	17	15	37	17-32	558.28			
MW-95	6	2	2	18	21	2-20	528.49			
MW-95B*	6	2	50	10	75	50-60	529.01			Well abandoned 6/5/2019
MW-96A	8	4	4	20	25	4-24	539.78			
MW-96B*	8	4	38	15	55	38-53	539.26			Well abandoned 6/3/2019
MW-97	8	4	4	20	24	4-24	541.31			
MW-98A*	6	2	25	16	41	25-41	547.07			Well abandoned 12/14/2016
MW-98B*	10	6	48	10	65	48-58	547.14			Well abandoned 12/14/2016
MW-99A	10	6	3	12	15	3-15	535.44			
MW-99B*	10	6	28	10	42	28-38	534.40			Well abandoned 6/5/2019
MW-100A*	10	6	3	12	15	3-15	534.89			Well abandoned 6/5/2019
MW-100B	10	6	31	10	45	31-41	534.17			Recovery activities ceased 12/15/2009
MW-101A	10	6	3	12	15	3-15	537.64			
MW-101B*	10	6	24	10	50	24-34	536.85			Well abandoned 6/5/2019
MW-102*	10	6	2	23	25	2-25	552.49			Well abandoned 2/21/2018
MW-103*	8	4	33	20	53	33-53	592.40			Well abandoned 7/22/2020
MW-104*	8	4	30	20	50	30-50	592.45			Well abandoned 7/27/2020
MW-105	10	6	25	22	50	25-47	592.53			
MW-106	10	6	8.5	20	30	8.5-28.5	547.68			
MW-107	8	4	15	30	45	15-45	584.93			
MW-108	10	6	35	20	55	35-55	601.07			
MW-109	10	6	30	40	70	30-70	588.10			Recovery activities ceased 12/13/2013
MW-110	10	6	25	35	60	25-60	584.93			Recovery activities ceased 9/12/2018
MW-111*	10	6	20	28	50	20-48	553.40			Well abandoned 2/21/2018
MW-112*	10	6	15	33	50	15-48	553.28			Well abandoned 2/21/2018
MW-113*	10	6	15	35	50	15-50	547.97			Well abandoned 2/21/2018
MW-114*	8	4	25	15	40	25-40	586.86			Well abandoned 5/30/2019
MW-115*	8	~	~	~	48.5	~	~			Borehole abandoned (well never installed)
MW-116*	10	6	12	53	65	12-65	548.44			Well abandoned 2/21/2018
MW-117*	10	6	10	50	67	10-60	554.05			Well abandoned 2/21/2018
MW-118*	10	6	20	20	40	20-40	562.46			Well abandoned 5/22/2019
MW-119*	10	6	15	25	40	15-40	552.22			Well abandoned 7/21/2020
MW-120*	10	6	15	25	40	15-40	554.00			Well abandoned 5/22/2019
MW-121	10	6	35	25	60	35-60	593.80			Recovery activities ceased 7/1/2020
MW-122*	10	6	20	30	50	20-50	560.45			Well abandoned 7/21/2020
MW-123*	10	6	15	35	50	15-50	550.86			Well abandoned 2/21/2018
MW-124*	10	6	13	23	38	13-36	551.13			Well abandoned 2/21/2018

Table 1  
Well Construction and Remediation Well Summary  
Inactive Exxon Facility # 28077  
14258 Jarrettsville Pike  
Phoenix, MD  
March 31, 2021

Well ID	Borehole Diameter (inch)	Well Diameter (inch)	Riser/Casing Length (feet)	Screen Length/ Open Interval (feet)	Total Borehole Depth (feet)	Screen Interval (feet) below TOC	TOC Elevation	Pump Type	Pump Depths	Comment
MW-125	10	6	32	23	55	32-55	574.08			
MW-126*	10	6	24	15	41	24-39	568.50			Well abandoned 2/21/2018
MW-127*	10	6	28	25	53	28-53	570.77			Well abandoned 2/20/2018
MW-128A*	10	6	38	20	58	38-58	561.55			Well abandoned 12/14/2016
MW-128B*	10	6	68	10	83	68-78	561.18			Well abandoned 12/14/2016
MW-128C	6	6	40	160	200	40-200	563.87			
MW-129A*	10	6	25	20	45	25-45	566.56			Well abandoned 12/14/2016
MW-129B*	10	6	51	10	68	51-61	565.62			Well abandoned 12/14/2016
MW-130*	6	2	25	25	50	25-50	577.35			Well abandoned 7/22/2020
MW-131A	6	2	5	15	25	5-20	526.33			
MW-131B	8	2	30	5	35	30-35	526.31			
MW-131C	6	6	60	299	359	60-359	525.70			Well deepened 10/8/2013
MW-132A*	8	2	2	15	17	2-17	524.71			Well abandoned 7/22/2020
MW-132B*	8	2	25	5	30	25-30	524.45			Well abandoned 6/5/2019
MW-133A*	6	2	15	15	30	15-30	549.05			Well abandoned 7/21/2020
MW-133B	6	2	40	10	50	40-50	549.22			
MW-133C	6	6	60	140	200	60-200	550.87			
MW-134A*	6	2	28	25	55	28-53	544.04			Well abandoned 7/23/2020
MW-134B*	6	2	65	10	75	65-75	544.29			Well abandoned 7/23/2020
MW-135A	8	4	20	20	40	20-40	560.67			
MW-135B	8	4	50	10	60	50-60	560.44			
MW-135C	10	6	60	337	397	60-397	562.28			Well deepened 7/30/2013
MW-136*	6	2	25	25	50	25-50	547.48			Well abandoned 7/23/2020
MW-137	10	6	15	30	45	15-45	563.37			Recovery activities ceased 10/8/2018
MW-138	10	6	14	30	45	14-44	570.60			
MW-138D	10	6	60	344	404	60-404	572.71	Pneumatic	170.00	Recovery pump lowered to 170' on 10/29/2019
MW-139	10	6	60	20	80	60-80	592.43			Recovery activities ceased 6/23/2017
MW-140A	8	4	10	20	30	10-30	548.02			
MW-140B	8	4	40	15	55	40-55	547.49			
MW-141A*	6	2	30	20	50	30-50	586.34			Well abandoned 5/29/2019
MW-141B*	6	2	60	10	70	60-70	586.42			Well abandoned 5/30/2019
MW-141C*	10	6	70	230	300	70-300	586.31			Well abandoned 5/29/2019
MW-142*	10	6	30	35	65	30-65	583.87			Well abandoned 7/22/2020
MW-143	10	6	30	35	65	30-65	584.39			
MW-144	8	6	24.5	35	62.5	25-60	590.89			SVE Offline on 4/12/2017
MW-145P*	3	1	15	25	40	15-40	564.11			Well abandoned 7/21/2020
MW-146	8	4	35	25	60	35-60	601.84			
MW-146B	15	6	60	66.5	126.5	60-126.5	601.23			
MW-146C	15	6	125	175	300	125-300	601.55			
MW-147*	10	2	~	~	80	~	534.62			Well abandoned 6/5/2019
MW-147PA*	6	2	8	72	80	8-80	534.52			Well abandoned 6/5/2019
MW-147PB*	10	2	8	72	80	8-80	534.43			Well abandoned 6/5/2019
MW-147PC*	6	2	8	72	80	8-80	534.52			Well abandoned 6/5/2019
MW-148A*	6	2	30	33	63	30-63	609.96			Well abandoned 5/30/2019
MW-148B*	6	2	73	10	83	73-83	608.97			Well abandoned 5/30/2019
MW-149*	10	6	19	30	50	19-49	573.79			Well abandoned 2/22/2018
MW-150A*	3	1	2	12	14	2-14	521.66			Well abandoned 7/22/2020
MW-150B*	3	1	24	10	34	24-34	520.83			Well abandoned 6/5/2019
MW-151	8	4	35	25	60	35-60	594.74			Recovery activities ceased 8/4/2020
MW-152	8	4	35	25	60	35-60	591.94			Recovery activities ceased 6/10/2019
MW-153A*	8	4	5	20	25	5-25	548.58			Well abandoned 2/22/2018
MW-153B*	8	4	35	10	45	35-45	548.46			Well abandoned 2/22/2018

Table 1  
Well Construction and Remediation Well Summary  
Inactive Exxon Facility # 28077  
14258 Jarrettsville Pike  
Phoenix, MD  
March 31, 2021

Well ID	Borehole Diameter (inch)	Well Diameter (inch)	Riser/Casing Length (feet)	Screen Length/ Open Interval (feet)	Total Borehole Depth (feet)	Screen Interval (feet) below TOC	TOC Elevation	Pump Type	Pump Depths	Comment
MW-154	10	6	20	40	60	20-60	563.03			Recovery activities ceased 5/6/2015
MW-155*	10	6	5	45	50	5-50	557.88			Well abandoned 5/22/2019
MW-156*	10	6	20	50	70	20-70	555.98			Well abandoned 7/21/2020
MW-157P*	6	2	10	50	60	10-60	552.64			Well abandoned 7/21/2020
MW-158P*	6	2	20	40	60	20-60	553.77			Well abandoned 2/21/2018
MW-159	10	6	30	40	70	30-70	550.58			
MW-160	10	6	20	50	70	20-70	567.97			
MW-161*	10	6	20	40	60	20-60	570.79			Well abandoned 2/22/2018
MW-162A	6	2	35	10	45	35-45	547.93			
MW-162B	10	2	55	10	65	55-65	547.33			
MW-162C	6	6	60	240	300	60-300	546.27			
MW-163B*	6	2	45	10	55	45-55	531.50			Well abandoned 2/22/2018
MW-164B*	8	4	60	15	75	60-75	592.56			Well abandoned 5/30/2019
MW-165C*	6	6	60	390	450	60-450	587.64			Well abandoned 5/30/2019
MW-166A	8	4	40	20	60	40-60	590.15			
MW-166B*	8	2	50	20	70	50-70	589.43			Well abandoned 5/30/2019
MW-166C	6	6	60	555	615	60-615	597.68			
MW-167	10	6	30	30	60	30-60	581.17			
MW-168	10	6	65	185	250	65-250	581.78			Pump active 4/18/2018 to 9/27/2018
MW-169	15	10	39	111	150	39-150	581.61			Recovery activities ceased 4/26/2019
MW-170	15	10	35	115	150	35-150	581.56			Recovery activities ceased 10/1/2019
MW-171	15	10	36	94	130	36-130	581.77			
MW-171C	15	10	125	290	415	125-415	583.36			Well deepened 7/25/2013
MW-172C*	12	4	180	20	200	180-200	564.40			Well abandoned 2/20/2018
MW-173B*	6	2	65	15	80	65-80	589.80			Well abandoned 5/29/2019
MW-173C*	10	6	80	420	500	80-500	590.06			Well abandoned 5/29/2019
MW-174B*	6	2	40	20	60	40-60	570.08			Well abandoned 6/4/2019
MW-174C*	10	6	60	240	300	60-300	570.02			Well abandoned 6/4/2019
MW-175C*	10	6	60	340	400	60-400	589.88			Well abandoned 6/4/2019
MW-176	15	10	125	125.1	250.1	125-250.1	582.88			Recovery activities ceased 8/5/2020
MW-176CC	15	10	250	50	300	250-300	583.81			
MW-177	15	10	125	125.5	250.5	125-250.5	581.48			
MW-178A	10	6	43	30	73	43-73	592.78			
MW-178B	10	6	75	50	125	75-125	592.42			
MW-178C	15	10	125	175	300	125-300	592.58	Pneumatic	200.00	Pump lowered to 200' on 10/10/2017
MW-179A	10	6	40	40	80	40-80	587.66			
MW-179C	15	10	80	170	250	80-250	587.04			
MW-180A	10	6	35	40	75	35-75	589.63			
MW-180C	15	10	125	175	300	125-300	589.18			
MW-181A	10	6	30	30	60	30-60	594.45	Pneumatic	55.00	Recovery initiated on 10/24/2017
MW-181B	10	6	60	65	125	60-125	594.19			Recovery activities ceased 10/23/2017
MW-181C	15	10	125	175	300	125-300	594.48			
MW-182	15	10	100	200	300	100-300	590.84			
MW-183	15	10	100	200	300	100-300	590.47	Pneumatic	200.00	Pump lowered to 200' on 10/10/2017
MW-184	15	10	100	200	300	100-300	588.44			Recovery activities ceased 8/5/2020
MW-185	15	10	100	200	300	100-300	584.64			Recovery activities ceased 4/26/2019
MW-186D	10	6	70	358	428	70-428	NSVD			
MW-187A	10	6	25	35	60	25-60	NSVD	Pneumatic	55.00	SVE resumed 5/11/2016, running through DPE
MW-187B	10	6	60	65	125	60-125	597.05	Pneumatic	92.00	SVE Offline 4/28/2020
MW-187C	12	6	125	175	300	125-300	595.53	Pneumatic	170.00	Pump lowered to 170' on 10/29/2019
MW-188D	10	6	125	311	436	125-436	604.20			
MW-189D	10	6	35	349	384	35-384	NSVD			
PW-3501	-	6	27	398	425	27-425	593.05			Well deepened 7/19/2013
PW-14311	-	6	20	280	300	20-300	604.08			
SVE-001	10	6	24	45	69	24-69	592.05	Pneumatic	62.00	SVE Offline on 4/12/2017
SVE-002	10	6	25	45	70.75	25-70.75	588.75			Recovery activities ceased on 8/4/2020
SVE-003	10	6	24	45	69	24-69	589.28	Pneumatic	61.00	SVE Offline on 4/12/2017

TOC = Top of Casing  
BTOC = Below Top of Casing  
DPE = Dual Phase Extraction  
SVE = Soil Vapor Extraction  
NSVD = Not Surveyed to Vertical Datum  
\* = Well Abandoned  
fbg = feet below grade  
NE = Not Encountered

FLUTe liners were installed into the following wells:  
- MW-41C (sample ports at 75-80 fbg, 95-97 fbg, 120-130 fbg, 190-195 fbg)  
- MW-53C (sample ports at 215-220 fbg and 225-235 fbg)  
- MW-56C (sample ports at 100-110 fbg, 310-315 fbg, 320-325 fbg)  
- MW-78C (sample port at 60-70 fbg). FLUTe liner was removed on September 21, 2015  
- MW-138D (sample port at 77-82 fbg, 95-100 fbg, 120-125 fbg, 151-156 fbg, 190-200 fbg, 217-222 fbg, 250-255 fbg, 288-293 fbg, 332-337 fbg, 379-384 fbg).

## FIGURES

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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
- Proposed RW Conversion
- Rebound MW

- 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 a review of records and field data. It is not intended to be used as a legal document. It is the responsibility of the user to verify the accuracy of the information and to obtain all necessary permits and approvals. The user shall be responsible for obtaining all necessary permits and approvals.

NOTE: MW-189D Location is Approximate



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PROJECT NO.	20193011
DRAWN:	4/30/2021
DRAWN BY:	R. Alvarez
CHECKED BY:	C. Low

**PROPOSED RECOVERY WELL CONVERSIONS 2021**

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