Advanced Environmental Concepts, Inc.

1751 Pulaski Highway Havre de Grace, MD 21078 (410) 939-5550

Groundwater Sampling Report Q3 2022

Site:

Chesapeake City Eagle's Nest
2754 Augustine Herman Highway
Chesapeake City, MD 21930

MDE Case # 23-0161CE
Facility ID 2682

Prepared For:

Chesapeake City Eagle's Nest
Mr. Danny Patel
DJS Realty, LLC
2754 Augustine Herman Hwy
Chesapeake City, MD 21915

October 20, 2022

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1.0 Introduction

This monitoring well (MW) sampling report has been prepared by Advanced Environmental Concepts, Inc. (AEC) for the Chesapeake City Eagle's Nest located at 2754 Augustine Herman Hwy Chesapeake City, MD 21915; referred to herein as the "site". This purpose of this report is to satisfy the requirements set forth by the Maryland Department of the Environment (MDE) in the Report of Observations dated September 30, 2022.

2.0 Groundwater Monitoring

2.1 Monitoring Well Sampling & Gauging

On 9/23/2022 AEC personnel arrived on site to gauge and sample all site monitoring wells. Prior to sampling each well was gauged for presence/absence of LNAPL as well as depth to groundwater with an electronic oil/water interface meter. MW-1 was not accessible and LNAPL was detected in MW-2 at a thickness of 0.30 ft on 9/23/2022. Presence of LNAPL in MW-2 was reported to MDE's Oil Control Program (OCP) during the afternoon of 9/23/2022. The groundwater sample collected from MW-3 on 9/23/2022 was not submitted for laboratory analysis.

On 9/30/2022, MDE personnel Lindley Campbell, Michael Jester, and Kelly Hilton were on site to follow up on the initial report of LNAPL presence I MW-2. The MDE's full Report of Observation with an outline of site requirements can be found in Appendix B.

On 10/5/2022 AEC personnel arrived on site to gauge and sample all site monitoring wells. Prior to sampling each well was gauged for presence/absence of LNAPL as well as depth to groundwater with an electronic oil/water interface meter. LNAPL was detected in MW-2 at a thickness of 0.16 ft on 10/5/2022. LNAPL removed from MW-2 via bailing, quantified, and transported to AEC's shop for storage in a 55 gallon drum for disposal at a future date. Approximately 0.23 gallons of LNAPL was recovered via bailing on 10/5/2022. After LNAPL was removed to the maximum extent practicable, a grab sample was collected from MW-2. No indication of the presence of LNAPL was observed in the remaining MWs.

After gauging, MW-1 and MW-3 were purged a total of three well volumes of water. Purged groundwater was treated with activated carbon prior to being discharged to the ground. After purging, groundwater was allowed to recover to a minimum of 90% pre purge levels prior to sample collection. Groundwater samples were collected using pre-packaged, single use, disposable bailers and placed in laboratory supplied VOAs and then placed in a cooler with ice and chain of custody record for delivery to the laboratory. Groundwater samples collected were delivered to AEC's laboratory to be analyzed by EPA Method 8260 for volatile organic compounds (VOCs) and by EPA Method 8015 for total petroleum hydrocarbons - diesel and gasoline range organics (TPH-DRO/GRO).

3.0 Results of Groundwater Sampling

3.1 Groundwater Elevation

AEC constructed a groundwater elevation contour map based upon depth to groundwater measurements collected on 10/5/2022 which depicts groundwater flow to be to the southwest. Relative groundwater elevation observed during the sampling event ranged from 45.73 feet in MW-1 (highest) to 43.61 feet in MW-3 (lowest). The groundwater elevation contour map can be found in Appendix A.

3.2 Groundwater Sampling Results

Laboratory method detectable concentrations of VOCs/TPH were not observed in the groundwater samples collected from MW-1 and MW-3 during the 10/5/2022 sampling event.

Elevated levels of VOCs and TPH-GRO were observed the groundwater sample collected and submitted for chemical analysis on 10/5/2022 at location MW-2. A summary of the concentrations of compounds of concern observed above MDE Generic Numeric Cleanup Standards (GNCS) for Type I and II aquifers are as follows:

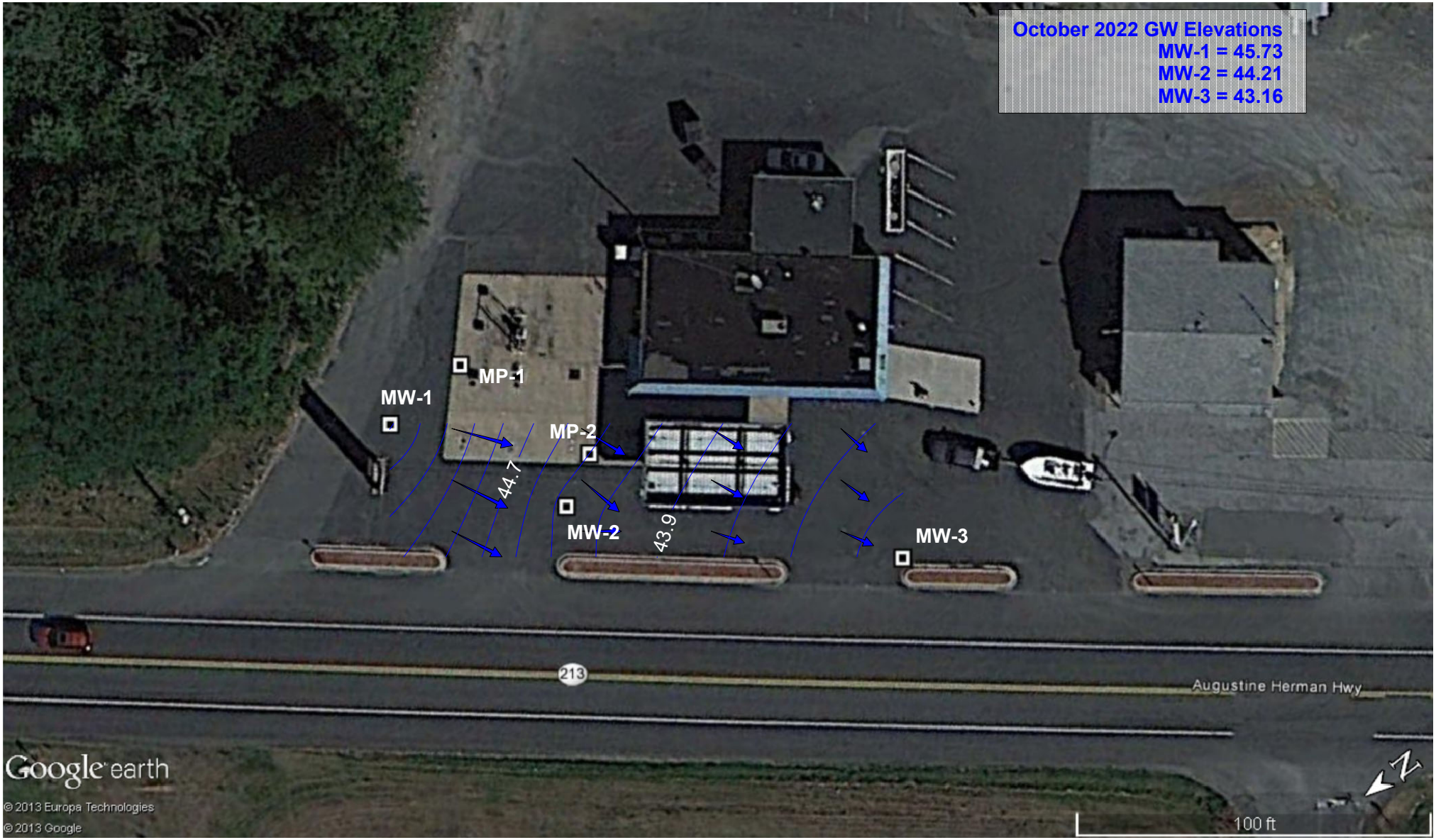
- Benzene - 6520 ug/L
- Toluene - 75200
- Ethylbenzene - 18400 ug/L
- Xylenes - 120800 ug/L
- Isopropylbenzene - 2300 ug/L
- 1,3,5-Trimethylbenzene - 26800 ug/L
- 1,2,4-Trimethylbenzene - 101200 ug/L
- Naphthalene - 26800 ug/L
- TPH-GRO - 547300 ug/L

A Quick Reference Analytical Summary Table can be found in Appendix B. A full Certificate of Analysis and Chain of Custody Record for all groundwater samples collected as a part of this investigation can be found in Appendix C.

4.0 Appendices

Appendix A

Site Maps



AEC
Advanced Environmental Concepts, Inc.

Chesapeake City Eagle's Nest
2754 Augustine Herman Highway
Chesapeake City, MD 21915

Groundwater Elevation Contour
October 2022
Contour Interval = 0.20 Feet

Appendix B

Analytical Summary Tables

Chesapeake City Eagle's Nest
2754 Augustine Herman Hwy Chesapeake City, MD
Historical Monitoring Well Gauging Summary Table

MW ID	Date	Depth to Product (ft)	Depth to Groundwater (ft)	LNAPL Thickness (ft)	Groundwater Elevation (ft)	Corrected Groundwater Elevation (ft)
MW-1	4/15/2008	ND	3.88	ND	46.12	
ToC Elev	8/18/2008	ND	5.19	ND	44.81	
50.00	11/21/2008	ND	5.16	ND	44.84	
	2/3/2009	ND	4.33	ND	45.67	
	3/8/2010	ND	3.98	ND	46.02	
	9/24/2010	ND	5.49	ND	44.51	
	2/6/2012	ND	3.72	ND	46.28	
	2/12/2013	ND	3.89	ND	46.11	
	2/6/2014	ND	3.42	ND	46.58	
	2/3/2015	ND	3.73	ND	46.27	
	3/31/2016	ND	3.90	ND	46.10	
	3/1/2017	ND	4.52	ND	45.48	
	3/20/2018	ND	3.92	ND	46.08	
	3/18/2019	ND	3.76	ND	46.24	
	2/21/2020	ND	3.96	ND	46.04	
	2/25/2021	ND	3.13	ND	46.87	
	9/23/2022	NA	Well Not Accessible			
	10/5/2022	ND	4.27	ND	45.73	
MW-2	4/15/2008	ND	4.11	ND	44.89	
ToC Elev	8/18/2008	ND	5.13	ND	43.87	
49.00	11/21/2008	Sheen	5.13	ND	43.87	
	2/3/2009	Sheen	4.77	ND	44.23	
	3/8/2010	ND	4.21	ND	44.79	
	9/24/2010	ND	5.38	ND	43.62	
	2/6/2012	ND	4.53	ND	44.47	
	2/12/2013	ND	4.64	ND	44.36	
	2/6/2014	ND	4.49	ND	44.51	
	2/3/2015	ND	4.55	ND	44.45	
	3/31/2016	ND	4.61	ND	44.39	
	3/1/2017	ND	4.80	ND	44.20	
	3/20/2018	ND	4.60	ND	44.40	
	3/18/2019	ND	4.48	ND	44.52	
	2/21/2020	ND	4.69	ND	44.31	
	2/25/2021	ND	4.10	ND	44.90	
	9/23/2022	4.85	5.15	0.30	43.85	44.11
	10/5/2022	4.77	4.93	0.16	44.07	44.21
MW-3	4/15/2008	ND	4.93	ND	42.20	
ToC Elev	8/18/2008	ND	4.41	ND	42.72	
47.13	11/21/2008	ND	4.41	ND	42.72	
	2/3/2009	ND	4.10	ND	43.03	
	3/8/2010	ND	4.57	ND	42.56	
	9/24/2010	ND	4.17	ND	42.96	
	2/6/2012	ND	3.68	ND	43.45	
	2/12/2013	ND	3.63	ND	43.50	
	2/6/2014	ND	2.84	ND	44.29	
	2/3/2015	ND	3.47	ND	43.66	
	3/31/2016	ND	3.87	ND	43.26	
MW-3	3/1/2017	ND	3.78	ND	43.35	
ToC Elev	3/20/2018	ND	3.78	ND	43.35	
47.13	3/18/2019	ND	3.61	ND	43.52	
	2/21/2020	ND	3.65	ND	43.48	
	2/25/2021	ND	3.37	ND	43.76	
	9/23/2022	ND	3.92	ND	43.21	
	10/5/2022	ND	3.97	ND	43.16	

Chesapeake City Eagle's Nest
2754 Augustine Herman Hwy Chesapeake City, MD
Historical Well Sampling Analytical Table

Well ID	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Isopropylbenzene	1,3,5-Trimethlybenzene	1,2,4,-Trimethylbenzene	Naphthalene	TPH-DRO	TPH-GRO
MDE GNCS CLEANUP Type I&II Aquifers		**20**	**5**	**1000**	**700**	**10000**	**NG**	**45**	**6.0**	**5.6**	**0.65**	**47**	**47**
MW-1	4/15/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8/18/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	11/21/2008	ND	ND	ND	ND	ND	ND	ND	**7.80**	**32.3**	**12.1**	ND	**236**
	2/3/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3/8/2010	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS
	9/24/2010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/6/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/12/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/6/2014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/3/2015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/31/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/1/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/21/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/25/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	10/5/2022	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0	< 6.0	< 1.0	< 1.0	< 1.0	< 1.0	< 40	< 40
MW-2	4/15/2008	ND	**39.4**	ND	28.0	104	171	ND	**28**	**137**	**14.5**	NS	NS
	8/18/2008	6.39	**8.52**	ND	5.32	10.3	24.1	ND	**7.54**	**27.9**	ND	ND	750
	11/21/2008	7.73	ND	ND	22.5	77.8	100	14.3	**69.3**	**339**	**16.6**	ND	1420
	2/3/2009	10.8	**30.9**	ND	14.6	84.1	130	14.3	**83.5**	**356**	**34.2**	ND	5400
	3/8/2010	ND	ND	ND	13.2	ND	ND	NS	NS	NS	NS	NS	NS
	9/24/2010	ND	ND	ND	6.13	ND	6.13	ND	ND	**15.9**	ND	ND	1180
	2/6/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/12/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/6/2014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/3/2015	12.5	7.72	ND	ND	ND	7.72	ND	ND	ND	ND	NS	NS
	3/31/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/1/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/21/2020	5.97	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/25/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	10/5/2022	< 1.0	**6520**	**75200**	**18400**	**120800**	220920	**2300**	**26800**	**101200**	**26800**	< 40	**547300**
MW-3	4/15/2008	**19.8**	**118**	**1920**	520	1488	4046	57.9	**215**	**760**	**93.1**	NS	NS
	8/18/2008	ND	**29.8**	252	69.1	248.1	599	7.46	**18.1**	**76.8**	**7.86**	ND	**1040**
	11/21/2008	11.0	**97.2**	395	150	544	1186	13.0	**35.1**	**168**	**13.6**	ND	**1980**
	2/3/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3/8/2010	ND	ND	5.37	16.5	38.5	60.4	NS	NS	NS	NS	NS	NS
	9/24/2010	ND	**90.7**	241	78.3	232	642	ND	ND	**11.9**	ND	ND	**850**
	2/6/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/12/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2/6/2014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/3/2015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/31/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/1/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/21/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/25/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	10/5/2022	< 1.0	< 1.0	< 1.0	< 1.0	< 3.0	< 6.0	< 1.0	< 1.0	< 1.0	< 1.0	< 40	< 40
DSW	3/31/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/1/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	3/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/21/2020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
	2/25/2021	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS

Groundwater Sampling Data reported in ug/L
Values exceeding the specified MDE criteria are **bolded**
ND - Concentrations below method detectable levels
NA - Not Applicable
NG - No Guidance
NS - Not Sampled

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard, Suite 620 • Baltimore Maryland 21230-1719
(410) 537-3442 • 1-800-633-6101 • http://www.mde.maryland.gov
LAND AND MATERIALS ADMINISTRATION

OIL CONTROL PROGRAM

Report of Observations

Type of Inspection/Observations: Product in Monitoring Well	**Date:** 9/30/2022
Site/Facility Name: Eagle's Nest	**Facility ID #:** 2682
Address: 2754 Augustine Herman Highway	**Case #:** 23-0161CE
City / County: Chesapeake City / Cecil	**Permit #:**

Remarks:

This writer, in company with regional supervisor Michael Jester and regional inspector Kelly Hilton, arrived on site to follow up on open case 23-0161CE. This case was opened following Initial Report of Incident dated 9/23/2022 in which product was discovered in one of the monitoring wells during annual high-risk groundwater use area (HRGUA) sampling. According to the report, in MW-2, depth to product was measured at 4.85 feet below the ground surface (bgs) and depth to water was measured at 5.15 feet bgs. Advanced Environmental Concepts, Inc. (AEC) was performing the annual HRGUA groundwater sampling.

While on site this date, Inspector Hilton reviewed inventory control records for all tanks for the months of March 2022 through September 2022. All inventory records for those months did not show inventory variations exceeding one percent plus 130 gallons of the metered quantity of a regulated substance over a period of 30 consecutive days and daily inventory which shows seven consecutive days of shortage totaling 80 gallons or more. Inspectors Jester reviewed passing release detection records for all tanks for the months of October 2021 through September 2022.

In conversations with the store operator, he stated there was an overfill at the regular tank November 2021. Inspector Jester reviewed the MEMA database and there was a report for this site dated 11/22/21 of an overfill of 15 gallons (MEMA report# 127034).

Inspector Jester observed that tank top sumps for the Regular and Premium tanks were dry this date, and that the Diesel STP containment sump contained a small amount of water around the depressed edges this date. The diesel dispenser containment sump contained a small amount of fuel covering the bottom of the sump this date and dispenser sumps 1/2 and 3/4 were dry this date.

Inspector Hilton and this writer located the three HRGUA monitoring wells. Using an interface probe, we measured depth to water was 5.1 feet in MW-1 (close to the entrance sign) and 4 feet in MW-3 (closest to Augustine Herman Highway). No product was observed in MW-1 or MW-3 this date. This writer bailed MW-2 (closest to the UST field) and observed approximately 1 inch thickness of product this date. Strong petroleum odors were noted.

While on site, this writer telephoned Greg Pelc of AEC regarding the annual HRGUA sampling event. AEC personnel collected a groundwater sample from MW-3 and noted petroleum odors in the groundwater. A sample was not collected from MW-1 because they were unable to remove the well cap. A sample was not collected from MW-2 due to presence of liquid phase hydrocarbons (LPH).

Revised: 04/15/2015

MDE/LMA/OCP
Report of Observation

Inspector Jester previously telephoned Bill Hayes (302-542-3355) of Delmarva Petroleum, who stated that Delmarva would be on site on 10/18/22 performing annual compliance testing.

Based on the above observations, the following requirements are to be completed:

1. As an initial response to the presence of product, immediately begin gauging and hand bailing MW-2 on a weekly basis for a minimum of 4 weeks.
    a. After each weekly gauging/ bailing event, submit the tabulated data via email to Lindley.campbell1@maryland.gov and susan.bull@maryland.gov.
    b. Properly dispose of all petroleum impacted water and absorbent material.
    c. OCP will evaluate upon receipt of the tabulated gauging/ bailing data.
    d. OCP reserves the right to require additional investigation or remediation.

2. Code of Maryland Regulations (COMAR) requires the sampling of a minimum of 3 monitoring wells on an annual basis for HRGUA sites. **By no later than October 5, 2022**, collect a groundwater sample from MW-1. **By no later than October 21, 2022**, submit a report of groundwater monitoring results to the Oil Control Program in electronic and hard copy.
    a. In accordance with COMAR 26.10.08.01B, if there is a visual detection of free product, report to OCP within 2 hours, or if an analytical laboratory report shows a detection of a petroleum constituent in groundwater, report to OCP within 48 hours.

3. Submit a copy of annual compliance test results from testing event on 10/18/22. Test records must include line, leak detector, and spill catchment basin tests.

4. Submit a copy of all containment sump test records from the past 5 years.

5. Clean the diesel dispenser and tank top containment sumps and make any necessary repairs to ensure that the sumps are liquid tight according to manufacturer specifications.

6. Maintain all tank top and dispenser containment sumps clean and dry.

7. Have a MD certified UST Technician perform an investigation to determine the source of product in the diesel dispenser. Following the investigation, have the technician make all necessary repairs to any leaks and weeps identified. Submit a copy of repair invoices.

MDE/LMA/OCP
Report of Observation

NOTES

- Report the following conditions to the Department immediately, but not later than 2 hours after the detection, at **410-537-3442** during normal business hours, or to the Emergency Response Division hotline at **1-866-633-4686**:
  - An oil spill or discharge
  - If a storage system fails a test for tightness,
  - A storage system is determined to be leaking,
  - There exists evidence of a discharge
  - Two consecutive inconclusive tests
  - Presence of liquid phase hydrocarbons
- Reports should **not** be made via voice messages to OCP case managers.
- Operating without a permit or in violation of a permit, regulation, or law may result in the assessment of civil or administrative penalties and or other legal sanctions.

MDE Representative: Lindley Campbell	**Person Interviewed:**
Signature: Lindley Campbell	**Signature:**
Date: 9/30/22	**Date:** 9.30-2022
MDE Representative: Michael Jester	**MDE Representative:** Kelly Hilton
Signature:	**Signature:**
Date: 9/30/22	**Date:** 9/30/22

Revised: 04/15/2015

Appendix C

Report of Analysis & Chain of Custody Record

ADVANCED ENVIRONMENTAL CONCEPTS, INC.

Laboratory Services *1751 Pulaski Highway, Havre de Grace, MD 21078 Phone:410-939-5550 Fax:410-939-5552*

Certificate of Analysis

Sample Identification:	**MW-1**	**Project Identification:**	**CHESAPEAKE CITY EXXON**
MATRIX:	**water**	**Client Identification:**	**CHESAPEAKE CITY EXXON**
Sample Date:	**10/5/2022**	**Client Telephone:**	
Date Received:	**10/6/2022**	**Client Fax:**	
Extraction Date:	**na**	**Analyst:**	**MM**
Analysis Date:	**10/6/2022**	**Lab File:**	**100622A020**

COMPOUND	DETECTION LIMIT	TEST UNIT	TEST VALUE	METHOD
Dichlorodifluoromethane	1	ug/L	ND	EPA 8260
Chloromethane	1	ug/L	ND	EPA 8260
Vinyl Chloride	1	ug/L	ND	EPA 8260
Bromomethane	1	ug/L	ND	EPA 8260
Chloroethane	1	ug/L	ND	EPA 8260
Trichlorofluoromethane	1	ug/L	ND	EPA 8260
1,1-Dichloroethene	1	ug/L	ND	EPA 8260
tert-Butyl Alcohol (TBA)	25	ug/L	ND	EPA 8260
Methylene Chloride	1	ug/L	ND	EPA 8260
trans-1,2-Dichloroethene	1	ug/L	ND	EPA 8260
Methyl tert-Butyl Ether (MtBE)	1	ug/L	ND	EPA 8260
1,1-Dichloroethane	1	ug/L	ND	EPA 8260
Diisopropyl Ether (DIPE)	1	ug/L	ND	EPA 8260
cis-1,2-Dichloroethene	1	ug/L	ND	EPA 8260
Bromochloromethane	1	ug/L	ND	EPA 8260
Chloroform	1	ug/L	ND	EPA 8260
2,2-Dichloropropane	1	ug/L	ND	EPA 8260
Ethyl tert-Butyl Ether (EtBE)	1	ug/L	ND	EPA 8260
1,2-Dichloroethane	1	ug/L	ND	EPA 8260
tert-Amyl Alcohol (TAA)	25	ug/L	ND	EPA 8260
1,1,1-Trichloroethane	1	ug/L	ND	EPA 8260
1,1-Dichloropropene	1	ug/L	ND	EPA 8260
Carbon tetrachloride	1	ug/L	ND	EPA 8260
Benzene	1	ug/L	ND	EPA 8260
tert-Amyl Methyl Ether (TAME)	1	ug/L	ND	EPA 8260
Dibromomethane	1	ug/L	ND	EPA 8260
1,2-Dichloropropane	1	ug/L	ND	EPA 8260
Trichloroethene	1	ug/L	ND	EPA 8260
Bromodichloromethane	1	ug/L	ND	EPA 8260
tert-Amyl Ethyl Ether (TAEE)	1	ug/L	ND	EPA 8260
cis-1,3-Dichloropropene	1	ug/L	ND	EPA 8260
trans-1,3-Dichloropropene	1	ug/L	ND	EPA 8260
1,1,2-Trichloroethane	1	ug/L	ND	EPA 8260
Toluene	1	ug/L	ND	EPA 8260
1,3-Dichloropropane	1	ug/L	ND	EPA 8260
Dibromochloromethane	1	ug/L	ND	EPA 8260
1,2-Dibromoethane	1	ug/L	ND	EPA 8260
Tetrachloroethene	1	ug/L	ND	EPA 8260
1,1,1,2-Tetrachloroethene	1	ug/L	ND	EPA 8260
Chlorobenzene	1	ug/L	ND	EPA 8260
Ethylbenzene	1	ug/L	ND	EPA 8260

ADVANCED ENVIRONMENTAL CONCEPTS, INC.

Laboratory Services *1751 Pulaski Highway, Havre de Grace, MD 21078 Phone:410-939-5550 Fax:410-939-5552*

Certificate of Analysis

Sample Identification:	**MW-1**	**Project Identification:**	**CHESAPEAKE CITY EXXON**
MATRIX:	**water**	**Client Identification:**	**CHESAPEAKE CITY EXXON**
Sample Date:	**10/5/2022**	**Client Telephone:**	
Date Received:	**10/6/2022**	**Client Fax:**	
Extraction Date:	**na**	**Analyst:**	**MM**
Analysis Date:	**10/6/2022**	**Lab File:**	**100622A020**

COMPOUND	DETECTION LIMIT	TEST UNIT	TEST VALUE	METHOD
m&p-Xylene	2	ug/L	ND	EPA 8260
Bromoform	1	ug/L	ND	EPA 8260
Styrene	1	ug/L	ND	EPA 8260
o-Xylene	1	ug/L	ND	EPA 8260
1,1,2,2-Tetrachloroethane	1	ug/L	ND	EPA 8260
1,2,3-Trichloropropane	1	ug/L	ND	EPA 8260
Isopropylbenzene	1	ug/L	ND	EPA 8260
Bromobenzene	1	ug/L	ND	EPA 8260
n-Propylbenzene	1	ug/L	ND	EPA 8260
2-Chlorotoluene	1	ug/L	ND	EPA 8260
4-Chlorotoluene	1	ug/L	ND	EPA 8260
1,3,5-Trimethylbenzene	1	ug/L	ND	EPA 8260
tert-Butylbenzene	1	ug/L	ND	EPA 8260
1,2,4-Trimethylbenzene	1	ug/L	ND	EPA 8260
sec-Butylbenzene	1	ug/L	ND	EPA 8260
1,3-Dichlorobenzene	1	ug/L	ND	EPA 8260
1,4-Dichlorobenzene	1	ug/L	ND	EPA 8260
1,2-Dichlorobenzene	1	ug/L	ND	EPA 8260
p-iso-Propyltoluene	1	ug/L	ND	EPA 8260
n-Butylbenzene	1	ug/L	ND	EPA 8260
1,2-Dibromo-3-chloropropane	1	ug/L	ND	EPA 8260
1,2,4-Trichlorobenzene	1	ug/L	ND	EPA 8260
Naphthalene	1	ug/L	ND	EPA 8260
Hexachlorobutadiene	1	ug/L	ND	EPA 8260
1,2,3-Trichlorobenzene	1	ug/L	ND	EPA 8260
TPH GRO	40	ug/L	ND	EPA 8015B
TPH DRO	40	ug/L	ND	EPA 8015B
SURROGATE SPIKE				
1,2-Dichloroethane-d4		%	103	EPA 8260
Dibromofluoromethane		%	101	EPA 8260
TFT		%	100	EPA 8015B
Toluene-d8		%	101	EPA 8260
Bromofluorobenzene		%	92	EPA 8260

ADVANCED ENVIRONMENTAL CONCEPTS, INC.

Laboratory Services *1751 Pulaski Highway, Havre de Grace, MD 21078 Phone:410-939-5550 Fax:410-939-5552*

Certificate of Analysis

Sample Identification:	**MW-2**	**Project Identification:**	**CHESAPEAKE CITY EXXON**
MATRIX:	**water**	**Client Identification:**	**CHESAPEAKE CITY EXXON**
Sample Date:	**10/5/2022**	**Client Telephone:**	
Date Received:	**10/6/2022**	**Client Fax:**	
Extraction Date:	**na**	**Analyst:**	**MM**
Analysis Date:	**10/6/2022**	**Lab File:**	**100622A021**

COMPOUND	DETECTION LIMIT	TEST UNIT	TEST VALUE	METHOD
Dichlorodifluoromethane	1	ug/L	ND	EPA 8260
Chloromethane	1	ug/L	ND	EPA 8260
Vinyl Chloride	1	ug/L	ND	EPA 8260
Bromomethane	1	ug/L	ND	EPA 8260
Chloroethane	1	ug/L	ND	EPA 8260
Trichlorofluoromethane	1	ug/L	ND	EPA 8260
1,1-Dichloroethene	1	ug/L	ND	EPA 8260
tert-Butyl Alcohol (TBA)	25	ug/L	ND	EPA 8260
Methylene Chloride	1	ug/L	ND	EPA 8260
trans-1,2-Dichloroethene	1	ug/L	ND	EPA 8260
Methyl tert-Butyl Ether (MtBE)	1	ug/L	ND	EPA 8260
1,1-Dichloroethane	1	ug/L	ND	EPA 8260
Diisopropyl Ether (DIPE)	1	ug/L	ND	EPA 8260
cis-1,2-Dichloroethene	1	ug/L	ND	EPA 8260
Bromochloromethane	1	ug/L	ND	EPA 8260
Chloroform	1	ug/L	ND	EPA 8260
2,2-Dichloropropane	1	ug/L	ND	EPA 8260
Ethyl tert-Butyl Ether (EtBE)	1	ug/L	ND	EPA 8260
1,2-Dichloroethane	1	ug/L	ND	EPA 8260
tert-Amyl Alcohol (TAA)	25	ug/L	ND	EPA 8260
1,1,1-Trichloroethane	1	ug/L	ND	EPA 8260
1,1-Dichloropropene	1	ug/L	ND	EPA 8260
Carbon tetrachloride	1	ug/L	ND	EPA 8260
Benzene	1	ug/L	6520	EPA 8260
tert-Amyl Methyl Ether (TAME)	1	ug/L	ND	EPA 8260
Dibromomethane	1	ug/L	ND	EPA 8260
1,2-Dichloropropane	1	ug/L	ND	EPA 8260
Trichloroethene	1	ug/L	ND	EPA 8260
Bromodichloromethane	1	ug/L	ND	EPA 8260
tert-Amyl Ethyl Ether (TAEE)	1	ug/L	ND	EPA 8260
cis-1,3-Dichloropropene	1	ug/L	ND	EPA 8260
trans-1,3-Dichloropropene	1	ug/L	ND	EPA 8260
1,1,2-Trichloroethane	1	ug/L	ND	EPA 8260
Toluene	1	ug/L	75200	EPA 8260
1,3-Dichloropropane	1	ug/L	ND	EPA 8260
Dibromochloromethane	1	ug/L	ND	EPA 8260
1,2-Dibromoethane	1	ug/L	ND	EPA 8260
Tetrachloroethene	1	ug/L	ND	EPA 8260
1,1,1,2-Tetrachloroethene	1	ug/L	ND	EPA 8260
Chlorobenzene	1	ug/L	ND	EPA 8260
Ethylbenzene	1	ug/L	18400	EPA 8260

ADVANCED ENVIRONMENTAL CONCEPTS, INC.

Laboratory Services *1751 Pulaski Highway, Havre de Grace, MD 21078 Phone:410-939-5550 Fax:410-939-5552*

Certificate of Analysis

Sample Identification:	**MW-2**	**Project Identification:**	**CHESAPEAKE CITY EXXON**
MATRIX:	**water**	**Client Identification:**	**CHESAPEAKE CITY EXXON**
Sample Date:	**10/5/2022**	**Client Telephone:**	
Date Received:	**10/6/2022**	**Client Fax:**	
Extraction Date:	**na**	**Analyst:**	**MM**
Analysis Date:	**10/6/2022**	**Lab File:**	**100622A021**

COMPOUND	DETECTION LIMIT	TEST UNIT	TEST VALUE	METHOD
m&p-Xylene	2	ug/L	83200	EPA 8260
Bromoform	1	ug/L	ND	EPA 8260
Styrene	1	ug/L	ND	EPA 8260
o-Xylene	1	ug/L	37600	EPA 8260
1,1,2,2-Tetrachloroethane	1	ug/L	ND	EPA 8260
1,2,3-Trichloropropane	1	ug/L	ND	EPA 8260
Isopropylbenzene	1	ug/L	2300	EPA 8260
Bromobenzene	1	ug/L	ND	EPA 8260
n-Propylbenzene	1	ug/L	12400	EPA 8260
2-Chlorotoluene	1	ug/L	ND	EPA 8260
4-Chlorotoluene	1	ug/L	ND	EPA 8260
1,3,5-Trimethylbenzene	1	ug/L	26800	EPA 8260
tert-Butylbenzene	1	ug/L	ND	EPA 8260
1,2,4-Trimethylbenzene	1	ug/L	101200	EPA 8260
sec-Butylbenzene	1	ug/L	ND	EPA 8260
1,3-Dichlorobenzene	1	ug/L	ND	EPA 8260
1,4-Dichlorobenzene	1	ug/L	ND	EPA 8260
1,2-Dichlorobenzene	1	ug/L	ND	EPA 8260
p-iso-Propyltoluene	1	ug/L	1090	EPA 8260
n-Butylbenzene	1	ug/L	9980	EPA 8260
1,2-Dibromo-3-chloropropane	1	ug/L	ND	EPA 8260
1,2,4-Trichlorobenzene	1	ug/L	ND	EPA 8260
Naphthalene	1	ug/L	26800	EPA 8260
Hexachlorobutadiene	1	ug/L	ND	EPA 8260
1,2,3-Trichlorobenzene	1	ug/L	ND	EPA 8260
TPH GRO	40	ug/L	547300	EPA 8015B
TPH DRO	40	ug/L	ND	EPA 8015B
SURROGATE SPIKE				
1,2-Dichloroethane-d4		%	103	EPA 8260
Dibromofluoromethane		%	99	EPA 8260
TFT		%	101	EPA 8015B
Toluene-d8		%	99	EPA 8260
Bromofluorobenzene		%	98	EPA 8260

ADVANCED ENVIRONMENTAL CONCEPTS, INC.

Laboratory Services *1751 Pulaski Highway, Havre de Grace, MD 21078 Phone:410-939-5550 Fax:410-939-5552*

Certificate of Analysis

Sample Identification:	**MW-3**	**Project Identification:**	**CHESAPEAKE CITY EXXON**
MATRIX:	**water**	**Client Identification:**	**CHESAPEAKE CITY EXXON**
Sample Date:	**10/5/2022**	**Client Telephone:**	
Date Received:	**10/6/2022**	**Client Fax:**	
Extraction Date:	**na**	**Analyst:**	**MM**
Analysis Date:	**10/6/2022**	**Lab File:**	**100622A022**

COMPOUND	DETECTION LIMIT	TEST UNIT	TEST VALUE	METHOD
Dichlorodifluoromethane	1	ug/L	ND	EPA 8260
Chloromethane	1	ug/L	ND	EPA 8260
Vinyl Chloride	1	ug/L	ND	EPA 8260
Bromomethane	1	ug/L	ND	EPA 8260
Chloroethane	1	ug/L	ND	EPA 8260
Trichlorofluoromethane	1	ug/L	ND	EPA 8260
1,1-Dichloroethene	1	ug/L	ND	EPA 8260
tert-Butyl Alcohol (TBA)	25	ug/L	ND	EPA 8260
Methylene Chloride	1	ug/L	ND	EPA 8260
trans-1,2-Dichloroethene	1	ug/L	ND	EPA 8260
Methyl tert-Butyl Ether (MtBE)	1	ug/L	ND	EPA 8260
1,1-Dichloroethane	1	ug/L	ND	EPA 8260
Diisopropyl Ether (DIPE)	1	ug/L	ND	EPA 8260
cis-1,2-Dichloroethene	1	ug/L	ND	EPA 8260
Bromochloromethane	1	ug/L	ND	EPA 8260
Chloroform	1	ug/L	ND	EPA 8260
2,2-Dichloropropane	1	ug/L	ND	EPA 8260
Ethyl tert-Butyl Ether (EtBE)	1	ug/L	ND	EPA 8260
1,2-Dichloroethane	1	ug/L	ND	EPA 8260
tert-Amyl Alcohol (TAA)	25	ug/L	ND	EPA 8260
1,1,1-Trichloroethane	1	ug/L	ND	EPA 8260
1,1-Dichloropropene	1	ug/L	ND	EPA 8260
Carbon tetrachloride	1	ug/L	ND	EPA 8260
Benzene	1	ug/L	ND	EPA 8260
tert-Amyl Methyl Ether (TAME)	1	ug/L	ND	EPA 8260
Dibromomethane	1	ug/L	ND	EPA 8260
1,2-Dichloropropane	1	ug/L	ND	EPA 8260
Trichloroethene	1	ug/L	ND	EPA 8260
Bromodichloromethane	1	ug/L	ND	EPA 8260
tert-Amyl Ethyl Ether (TAEE)	1	ug/L	ND	EPA 8260
cis-1,3-Dichloropropene	1	ug/L	ND	EPA 8260
trans-1,3-Dichloropropene	1	ug/L	ND	EPA 8260
1,1,2-Trichloroethane	1	ug/L	ND	EPA 8260
Toluene	1	ug/L	ND	EPA 8260
1,3-Dichloropropane	1	ug/L	ND	EPA 8260
Dibromochloromethane	1	ug/L	ND	EPA 8260
1,2-Dibromoethane	1	ug/L	ND	EPA 8260
Tetrachloroethene	1	ug/L	ND	EPA 8260
1,1,1,2-Tetrachloroethene	1	ug/L	ND	EPA 8260
Chlorobenzene	1	ug/L	ND	EPA 8260
Ethylbenzene	1	ug/L	ND	EPA 8260

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Certificate of Analysis

Sample Identification:	**MW-3**	**Project Identification:**	**CHESAPEAKE CITY EXXON**
MATRIX:	**water**	**Client Identification:**	**CHESAPEAKE CITY EXXON**
Sample Date:	**10/5/2022**	**Client Telephone:**	
Date Received:	**10/6/2022**	**Client Fax:**	
Extraction Date:	**na**	**Analyst:**	**MM**
Analysis Date:	**10/6/2022**	**Lab File:**	**100622A022**

COMPOUND	DETECTION LIMIT	TEST UNIT	TEST VALUE	METHOD
m&p-Xylene	2	ug/L	ND	EPA 8260
Bromoform	1	ug/L	ND	EPA 8260
Styrene	1	ug/L	ND	EPA 8260
o-Xylene	1	ug/L	ND	EPA 8260
1,1,2,2-Tetrachloroethane	1	ug/L	ND	EPA 8260
1,2,3-Trichloropropane	1	ug/L	ND	EPA 8260
Isopropylbenzene	1	ug/L	ND	EPA 8260
Bromobenzene	1	ug/L	ND	EPA 8260
n-Propylbenzene	1	ug/L	ND	EPA 8260
2-Chlorotoluene	1	ug/L	ND	EPA 8260
4-Chlorotoluene	1	ug/L	ND	EPA 8260
1,3,5-Trimethylbenzene	1	ug/L	ND	EPA 8260
tert-Butylbenzene	1	ug/L	ND	EPA 8260
1,2,4-Trimethylbenzene	1	ug/L	ND	EPA 8260
sec-Butylbenzene	1	ug/L	ND	EPA 8260
1,3-Dichlorobenzene	1	ug/L	ND	EPA 8260
1,4-Dichlorobenzene	1	ug/L	ND	EPA 8260
1,2-Dichlorobenzene	1	ug/L	ND	EPA 8260
p-iso-Propyltoluene	1	ug/L	ND	EPA 8260
n-Butylbenzene	1	ug/L	ND	EPA 8260
1,2-Dibromo-3-chloropropane	1	ug/L	ND	EPA 8260
1,2,4-Trichlorobenzene	1	ug/L	ND	EPA 8260
Naphthalene	1	ug/L	ND	EPA 8260
Hexachlorobutadiene	1	ug/L	ND	EPA 8260
1,2,3-Trichlorobenzene	1	ug/L	ND	EPA 8260
TPH GRO	40	ug/L	ND	EPA 8015B
TPH DRO	40	ug/L	ND	EPA 8015B
SURROGATE SPIKE				
1,2-Dichloroethane-d4		%	97	EPA 8260
Dibromofluoromethane		%	96	EPA 8260
TFT		%	99	EPA 8015B
Toluene-d8		%	100	EPA 8260
Bromofluorobenzene		%	93	EPA 8260

ADVANCED ENVIRONMENTAL CONCEPTS, INC.
5292 Enterprise St., Ste. C, Eldersburg, MD 21784
Phone 410-795-5955 • Fax 410-795-9459
www.AECEnviro.com

Chain of Custody Record

Client: Chesapeake City Exxon	Project Name: C.C. Exxon	SDG#:	
Address: 2754 Augustine Herman Hwy. Chesapeake City MD	Project Location: 2754 Augustine Herman Hwy.	Preservatives	
	Phone:	Fax:	Requested Analysis: 8260
Contact:	Email:		Observation
Sample By:	Receive Completed Report Via (Circle One) U.S. Mail Email Fax		

	Sample #	Sample ID	Date	Time	Matrix	pH	8260						Observation
1	MW-1	2	10/5/22		GW		/						
2	MW-2	↓	↓				/						400x
3	MW-3	↓	↓				/						
4													
5													
6													
7													
8													
9													
10													

Relinquished/Received By Signature	Date	Time	Delivery Method	Lab Use Only
Relinquished By: [signature]				Temp of Cooler <4°C
Received By:				
Relinquished By:				Ice Present (Y/N) — Y circled
Received By: [signature]	10/6/22			
Relinquished By:				Custody Seal (Y/N) — Y circled
Received By:				Date of Extraction ~~[illegible]~~ 10/14

Matrix Codes: SO = Soil, GW = Ground Water, WW = Waste Water, VP = Vapor, SL = Sludge, DW = Drinking Water, O = Other

Special Instructions / Comments / QC Requirements:

Turn Around Time: STD 1 Day 2 Day 3 Day Other