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Western Refining Southwest LLC
I-40 Exit 39 A subsidiary of Marathon Petroleum Corporation
Jamestown, NM 87347

March 31, 2023

Mr. Dave Cobrain, Interim Chief
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

RE: French Drain Soil Sampling Investigation Report
Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery
EPA ID #NMD000333211
HWB-WRG-20-022

Dear Mr. Cobrain,

Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery is submitting this Investigation Report for the French Drain, as requested in "Direction, Response to Approval with Modifications, French Drain Soil Sampling Investigation Work Plan" dated November 9, 2021.

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. John Moore at (505) 879-7643 or Ms. Kateri Luka at (714) 713-1218.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction of supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Western Refining Southwest LLC, Marathon Gallup Refinery

Timothy J. Peterkoski
Director of Environment and Climate Strategy
Marathon Petroleum Company LP

Enclosure

cc: L. Andress, NMED HWB
S. Wells, NMOCD
L. King, EPA Region 6
K. Luka, Marathon Petroleum Company
J. Moore, Marathon Gallup Refinery
H. Jones, Trihydro Corporation

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WESTERN REFINING SOUTHWEST LLC

D/B/A MARATHON GALLUP REFINERY

FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT

MARCH 31, 2023

Executive Summary

Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery (Refinery) is submitting this investigation report summarizing the soil sampling results in the Sanitary Treatment Pond #1 (STP-1) French Drain area. STP-1 is used to treat water from the sanitary sewer system and the French Drain is used to divert storm water runoff into a small collections pond equipped with a drain valve. Sampling was conducted in accordance with the "Response to Direction, Response to Approval with Modifications French Drain Soil Sampling Investigation Work Plan" (Work Plan) submitted to the New Mexico Environment Department (NMED) on March 31, 2022 (Western 2022) and approved by NMED in "Direction, Response to Approval with Modifications French Drain Soil Sampling Investigation Work Plan" on November 9, 2021 (NMED 2021).

The investigation was conducted during the week of October 17, 2022, where nine soil borings were drilled in the STP-1 French Drain area (Figure 1-2). Groundwater was encountered in three of the borings. A total of 15 analytical and 14 geotechnical soil samples were collected, in addition to 2 blind duplicate analytical samples. Soil samples were analyzed for volatile organic compounds, semi-volatile organic compounds, and total petroleum hydrocarbons, and compared to the June 2022 Construction Worker and Residential soil screening levels (SSL). The samples were also tested by a geotechnical lab for density. The analytical exceedances are summarized below:

- One detected Construction Worker SSL exceedance; two non-detected Construction Worker SSL exceedance
- One detected Residential SSL exceedance; nine non-detected Residential SSL exceedances

During a January 27, 2023, virtual meeting, the Refinery and NMED agreed the Refinery will add 1 step-out location approximately 25 feet (ft) southwest of FD-BH-10 (i.e., downgradient) to a depth of 11.2 ft below ground surface (bgs). However, if hydrocarbon contamination is visually observed at 11.2 ft bgs, the boring will continue until there is no apparent contamination, 25 ft bgs, or refusal, whichever occurs first. Samples will be taken at a maximum of 3 depths:

- The interval with the greatest apparent degree of contamination in the vadose zone based on field observations and field photoionization detector (PID) screening
- 1 ft interval at the top of saturation, if groundwater encountered
- Total depth

Step-out samples will be collected in accordance with the approved Work Plan (Western 2022) and initial step-out drilling is anticipated for summer of 2023 (Figure 4-1). The need for a remedial evaluation will be determined pursuant to all analytical results associated with the original Work Plan and the step-out boring. After the completion of the step-out boring(s), an addendum to this report will be submitted to NMED.

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List of Acronyms

%	percent
amsl	above mean sea level
ASTM	American Society for Testing and Materials
bgs	below ground surface
BH	borehole
DRO	diesel range organics
ft	foot or feet
GRO	gasoline range organics
MPC	Marathon Petroleum Company
MRO	motor oil range organics
NM	New Mexico
NMED	New Mexico Environment Department
PID	photoionization detector
Refinery	Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery
SSL	soil screening level
STP-1	Sanitary Treatment Pond #1
SVOC	semi-volatile organic compound
TOV	total organic vapors
TPH	total petroleum hydrocarbons
VOC	volatile organic compound

1.0 Introduction

Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery (Refinery) is submitting this investigation report summarizing the soil sampling at the Sanitary Treatment Pond #1 (STP-1) French Drain area, conducted during the week of October 17, 2022. Sampling was conducted in accordance with the "Response to Direction, Response to Approval with Modifications French Drain Soil Sampling Investigation Work Plan" (Work Plan) submitted to the New Mexico Environment Department (NMED) on March 31, 2022 (Western 2022) and approved by NMED in "Direction, Response to Approval with Modifications French Drain Soil Sampling Investigation Work Plan" on November 9, 2021 (NMED 2021).

1.1 Background

The Refinery is located approximately 17 miles east of Gallup, New Mexico (NM) along the north side of Interstate Highway I-40 in McKinley County (Figure 1-1). The physical address is I-40, Exit #39 Jamestown, NM 87347. The Refinery property covers approximately 810 acres and is currently indefinitely idled. The French Drain is located on the east side of STP-1 (Figure 1-2). STP-1 is used to treat water from the sanitary sewer system and the French Drain is used to divert storm water runoff into a small collections pond equipped with a drain valve.

As detailed in the "Response to Comment No. 39 on 2017 Annual Groundwater Monitoring Report" (MPC 2019a), a hydrocarbon release from the drain line of the STP-1 French Drain was discovered on February 6, 2018. Efforts to pinpoint the source of the hydrocarbon release included borehole installation and soil excavations conducted on February 8 and February 10, 2018, respectively. Investigation activities are detailed in the "Second Response to Comment No. 39 on 2017 Annual Groundwater Monitoring Report" (MPC 2019b). The borehole and soil excavation locations of the February 2018 investigation are shown in Figure 1-2.

Hydrocarbons were identified in the shallow subsurface in boreholes (BH) #1, #2, and #3 near the southeast corner of STP-1. Borehole depths were not recorded but were estimated to reach 6 to 8 feet (ft) below ground surface (bgs). Hydrocarbons were also visually identified in soil at excavation #9 located between the wastewater treatment plant and STP-1. Excavations #4, #5, #6, #7, #8, and #10 showed no visible signs of hydrocarbon contamination.

Smaller hand excavations were also completed to the east of STP-1 during the February 2018 investigation, where hydrocarbons were identified at approximately 3 ft bgs. Hand excavations completed on the northwest sides of Tanks 569, 570, 571, and 572 (Figure 1-2) showed no visible evidence of a release. The locations of the hand excavations were not recorded, as documented in the "Response to Approval with Modifications on 2017 Annual Groundwater Monitoring Report" (Comment No. 39 Response 7) dated December 9, 2019 (MPC 2019c). Fluid levels were monitored in Tanks 570, 571, and 345 to determine if a potential leak was responsible for the release. A static level test of Tank 570 in 2019 showed a loss of product, which lead to the tank being emptied and taken out of service. "Tank 570 Release and Additional Areas LIF/HP Investigation Report" submitted

October 7, 2021, details the Tank 570 release and subsequent investigation (Western, 2021). There were no indications of leaks in Tanks 571 and 345. At the time of this report, tanks 569, 570, 571, 572, and 345 are drained and out of service due to the indefinite idled status of the Refinery.

On March 5, 2019, six deep soil borings were installed throughout the tank farm and north of STP-1: SB-FD-1, OW-61, OW-62, OW-63, OW-64, and OW-65 (Figure 1-2). Hydrocarbon impacts were identified at OW-61 at depths ranging from 10 to 26 ft bgs. Elevated photoionization detector (PID) readings were observed at OW-62 (18-20 ft bgs), OW-63 (18-24 ft bgs), OW-64 (10-24 ft bgs), and OW-65 (14-20 ft bgs). OW-61, OW-62, OW-63, OW-64, and OW-65 were completed as groundwater monitoring wells and are included in the sampling associated with the Annual Groundwater Monitoring Report.

1.2 Site Conditions

Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain to the northwest. Elevations on the Refinery property range from 7,040 ft above mean sea level (amsl) to 6,860 ft amsl. The area near STP-1 and the French Drain is approximately 6,910 ft amsl. The shallow subsurface soil (alluvium) is comprised of clay and silt with some inter-bedded sand layers. Beneath the alluvium is the Petrified Forest Member of the Chinle Group, which primarily consists of interbedded mudstone, siltstone, and sandstone. The Chinle/Alluvium interface ranges from 15 ft bgs to more than 32 ft bgs. Generally, shallow groundwater in the French Drain area flows from the southeast to the northwest.

1.3 Scope and Objectives

The 2022 soil investigation at the STP-1 French Drain area were initiated to further delineate horizontal and vertical hydrocarbon impacts to soil. A Geoprobe direct push drill rig was used to advance soil borings and soil samples were collected at each boring location. These locations are shown in Figure 1-2. In accordance with the approved Work Plan (Western 2022), the nine borings were sampled at up to three intervals:

- From the interval with the greatest apparent degree of contamination in the vadose zone, based on field observations and field PID screening
- 1 ft interval at the top of saturation, if groundwater encountered
- Total depth (refusal or 25 ft bgs, whichever occurred first)

Soil samples were analyzed for volatile organic compounds (VOCs) via Method 8260; semi-volatile organic compounds (SVOCs) via Method 8270; and total petroleum hydrocarbons (TPH) – diesel range organics (DRO), TPH – gasoline range organics (GRO), and TPH – motor oil range organics (MRO) via Method 8015M. Samples were also analyzed for pH and density. In accordance with the approved work plan, analytical results were compared to June 2022 NMED Residential and Construction Worker soil screening levels (SSLs). As previously discussed, the Refinery has known impacts to groundwater, including the presence of separate phase hydrocarbons and an associated smear zone which can act as a long-term source to groundwater. Therefore, the Refinery will not be comparing to soil-leachate based (SL) SSL with a dilution attenuation factor (DAF) of

20 in this report. For the majority of organic contaminants detected around French Drain, vadose zone sources of hydrocarbons are expected to deplete before smear zone sources. The expectation for shorter longevity in the vadose zone can be attributed to several factors, including greater air saturation and less contaminant mass. Diffusive transport is faster in soils with higher air saturation (ITRC 2009), suggesting that mass removal of VOCs is faster in the vadose zone. The combination of less contaminant mass, faster transport rates, and high degradation potential suggest that shorter longevity in the vadose zone is a reasonable assumption. Therefore, it follows that soils overlying the smear zone may not require an interim response for the purpose of protecting groundwater. The Refinery proposes to conduct a holistic migration to groundwater analysis on a site-wide basis.

2.0 Field Investigation

This section provides information pertaining to the drilling and sampling activities. The drilling investigation field work was completed the week of October 17, 2022. The nine boreholes associated with the sampling locations are shown in Figure 1-2.

Subsurface utility locates were conducted in a two-step process. A subsurface geophysical survey was conducted at each of the nine proposed soil boring locations by Ground Penetrating Radar Services. After the geophysical survey, v-trenches were air-knifed to a depth of approximately 5 ft bgs by Starcon. Soil borings were drilled using a direct push rig provided by Cascade Drilling.

Soils obtained were visually inspected and classified in general accordance with American Society for Testing and Materials (ASTM) D2487 (Unified Soil Classification System) and ASTM D2488 (Description and Identification of Soils). Detailed soil boring logs were completed in the field by qualified field staff and are included in Appendix A.

2.1 Soil Borings

A total of nine soil borings were drilled to 25 ft bgs or refusal, whichever occurred first, using a Geoprobe direct push rig; the shallowest total depth hit refusal at 11 ft bgs. Six soil borings were dry (FD-BH-5, FD-BH-6, FD-BH-7, FD-BH-8, FD-BH-11, FD-BH-12), and groundwater was encountered in three borings (FD-BH-4 [20.5 ft bgs], FD-BH-9 [7.5 ft bgs], FD-BH-10 [6.2 ft bgs]). Generally, non-native soil was observed from 0-2 ft bgs, followed by layers of clay and silt.

Continuous core soil samples were collected using an acetate liner. Each 2 ft interval was inspected for visual contamination and measured for total organic vapors (TOV) using a PID. TOV readings below 20 parts per million were considered background. Details related to sample collection were documented on the confirmation sampling boring logs (Appendix A). General observations recorded on the boring logs for each soil sample location include sampling start and end times, weather, site conditions, and sampling team members. Sample-specific information include field sample identification, sample start and end depth, collection method, sample type (i.e., composite or aliquot), soil classification and characteristics, deviations or clarification of sampling procedures, and other observations can also be found on the boring logs.

The intervals at which samples were collected (as applicable) from each boring were as follows:

- From the interval with the greatest apparent degree of contamination in the vadose zone, based on field observations and field PID screening
- 1 ft interval at the top of saturation, if groundwater encountered
- Total depth (refusal or 25 ft bgs, whichever occurred first)

In some soil borings, the intervals described above overlapped (e.g., in FD-BH-11, total depth was also the interval with the greatest apparent degree of contamination). Sample collection intervals are listed in Table 2-1

and in the boring logs (Appendix A). Therefore, only one sample was collected to cover two criteria. A total of 15 analytical and 14 geotechnical soil samples were collected, in addition to 2 blind duplicate analytical samples. The field team attempted to retrieve a geotechnical sample from each analytical soil sample location; however, there were several instances where the soil sample was not cohesive enough for transfer to the lab. In these cases, a sample from the next closest interval was used with the exception of FD-BH-4 (24-25 ft bgs). The samples at this location were insufficiently cohesive for testing in the sampled interval or adjacent interval. A summary of PID readings and the intervals in which samples were collected in each boring are provided in Table 2-1. Soil sample results are discussed below in Section 3.0 and provided in Appendix B.

2.2 Deviations from Approved Plan

Deviations from the Work Plan included the following:

- The Work Plan specified that samples would be analyzed by Eurofins TestAmerica Analytical Laboratory in Pensacola, Florida. Instead, the samples were analyzed by Hall Environmental in Albuquerque, NM.
- A density sample was not collected at FD-BH-4 (24-25 ft bgs) due to insufficient cohesive sample recovery for testing in the sampled interval or adjacent interval.

3.0 Laboratory Analytical Results

Results of the soil sampling parameters with applicable standards are presented in the following tables:

- Table 3-1 – VOC soil sample results
- Table 3-2 – SVOC soil sample results
- Table 3-3 – General Chemistry soil sample results
- Table 3-4 – Geotechnical sample results

Analytical laboratory reports are included in Appendix B. Data validation reports are included in Appendix C. In accordance with the approved work plan, soil sampling results compared to the June 2022 Construction Worker and Residential SSLs are summarized in the following sub-sections and will be used to guide future remediation activities. Sample results were not compared to the June 2022 Industrial SSLs, because all samples were collected at depths deeper than 1 ft bgs.

3.1 VOCs

The sample results for VOCs compared to 2022 NMED Construction Worker and Residential SSLs are provided in Table 3-1. No Construction Worker SSL exceedances were identified for VOCs.

No detected exceedances were identified for VOCs compared against the NMED Residential SSLs. Non-detect exceedances, where the reporting limit of a non-detect result is greater than the NMED Residential SSL, were identified for two analytes. Non-detect reporting limit exceedances are noted as data quality exceptions with an asterisk (*) in Table 3-1. The analytes in which data quality exceptions were identified are:

- 1,2-Dibromo-3-chloro-propane
- 1,2,3-Trichloropropane

3.2 SVOCs

The sample results for SVOCs compared to 2022 NMED Construction Worker and Residential SSLs are provided in Table 3-2. Non-detect Construction Worker SSL exceedances were identified for Bis(2-chloroethyl)ether and N-Nitrosodimethylamine, but these exceedances are data quality exceptions in which the reporting limit of a non-detect result is greater than the applicable SSL. Non-detect reporting limit exceedances are noted with an asterisk (*) on Table 3-2.

Additionally, non-detect results for seven analytes exceeded the NMED Residential SSL. These non-detect reporting limit exceedances are noted as data quality exceptions with an asterisk (*) in Table 3-2. The seven analytes in which non-detect NMED Residential SSL exceedances were identified are:

- 2,6-Dinitrotoluene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- N-Nitrosodimethylamine

3.3 General Chemistry

The sample results for general chemistry analytes compared to 2022 NMED Construction Worker and Residential SSLs are provided in Table 3-3. One detected Construction Worker and Residential SSL exceedance was identified for TPH-GRO at FD-BH-10 (5.2-6.2 ft bgs). The soil sample pH ranged from 8.3 to 9.58 standard units.

3.4 Geotechnical

Geotechnical sample results are provided in Table 3-4. Samples were analyzed for gravimetric and volumetric moisture content, dry bulk density, and wet bulk density. Samples were found to have a volumetric moisture content ranging from 17.9 percent (%) to 41.9%, and porosity ranging from 35.9% to 48.7%.

3.5 QA/QC Samples

Methanol blank samples were provided by the laboratory as trip blanks. Methanol blank samples were sent in the coolers by the laboratory and were not altered between sampling and analysis. There were no analytes detected in the trip blank samples or equipment blanks.

Tier II data validation was performed on the data package provided by the laboratory. The Tier II data validation included a review of the completeness of the data packages, chain of custody forms, sample condition receipts, sample preservation, holding times, the case narrative, and the quality control summary. No data points were rejected and the data completeness for this data set is 100% acceptable. Several data points were assigned data qualifiers during Tier II data validation indicating one or more results are an estimated concentration (“J”), an estimated concentration but may be biased high (“J+”), or an estimated reporting limit (“UJ”). Tier II data validation reports are presented in Appendix C.

3.6 Analytical Results Summary

The number of analytes identified that exceed their applicable screening levels, detected or non-detected, are summarized in the following table:

Sample Matrix	Standard	VOCs	SVOCs	General Chemistry
Soil	Construction Worker	0	0 detected 2 non-detected	1 detected 0 non-detected
	Residential	0 detected 2 non-detected	0 detected 7 non-detected	1 detected 0 non-detected

Three Construction Worker SSL exceedances were identified: two non-detect Bis(2-chloroethyl)ether and N-Nitrosodimethylamine exceedances and one detected TPH-GRO exceedance. Except for the TPH-GRO result that also exceeded the Construction Worker SSL, all Residential SSL exceedances were non-detect exceedances and are considered data quality exceptions. The Work Plan required that if there were detected exceedances, additional step-out samples must be collected in accordance with the approved Work Plan (Western 2022).

Based on the analytical results, step-out samples are required for the detected exceedances. These samples will be analyzed by a qualified laboratory for TPH-GRO. The initial step-out boring is expected to be drilled in summer of 2023. Step-out borings will continue one drilling event at a time until TPH-GRO is below the NMED Construction Worker SSL, or until the results are non-detect, whichever occurs first.

4.0 Conclusions

This investigation was conducted to determine the hydrocarbon impacts around the STP-1 French Drain. The soil analyte exceedances are summarized below:

- One detected Construction Worker SSL exceedance; two non-detected Construction Worker SSL exceedances
- One detected Residential SSL exceedance; nine non-detected Residential SSL exceedances

Based on these results, the Refinery and NMED agreed the Refinery will add one step-out location (FD-BH-13) 25 feet laterally downgradient from FD-BH-10 to a total depth of at least 11.2 ft bgs (Figure 4-1). However, if hydrocarbon contamination is visually observed at 11.2 ft bgs, the boring will continue until there is no apparent contamination, 25 ft bgs, or refusal, whichever occurs first. Samples will be taken at a maximum of 3 depths:

- The interval with the greatest apparent degree of contamination in the vadose zone based on field observations and field PID screening
- 1 ft interval at the top of saturation, if groundwater encountered
- Total depth

Applicable step-out samples will be collected in accordance with the approved Work Plan (Western 2022). Based on the analytical results, samples will be analyzed by a qualified laboratory for TPH-GRO. The step-out boring is expected to be drilled in summer of 2023. Step-out borings will continue until TPH-GRO is below the NMED Construction Worker SSL, or until the results are non-detect, whichever occurs first. After the completion of the step-out boring(s), an addendum to this report will be submitted to NMED. The need for a remedial evaluation will be determined pursuant to all analytical results associated with the original Work Plan and the step-out boring.

5.0 References

ITRC. 2009. Evaluating Natural Source Zone Depletion at Sites with LNAPL. ITRC LNAPL Team. April 8.

Marathon Petroleum Company (MPC). 2019a. Response to Comment No. 39 on 2017 Annual Groundwater Monitoring Report (dated March 21, 2019), Marathon Petroleum Company LP, Gallup Refinery, (dba Wester Refining Southwest, Inc.), EPA ID# NMD000333211, HWB-WRG-18-014. May 23.

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Western. 2021. Tank 570 Release and Additional Areas LIF/HP Investigation Report, Western Refining Southwest LLC, Marathon Gallup Refinery, EPA ID# NMD000333211, October 27.

Western. 2022. Response to Direction, Response to Approval with Modifications French Drain Soil Sampling Investigation Work Plan, Western Refining Southwest LLC, Marathon Gallup Refinery, EPA ID# NMD000333211, HWB-WRG-20-022. March 31.

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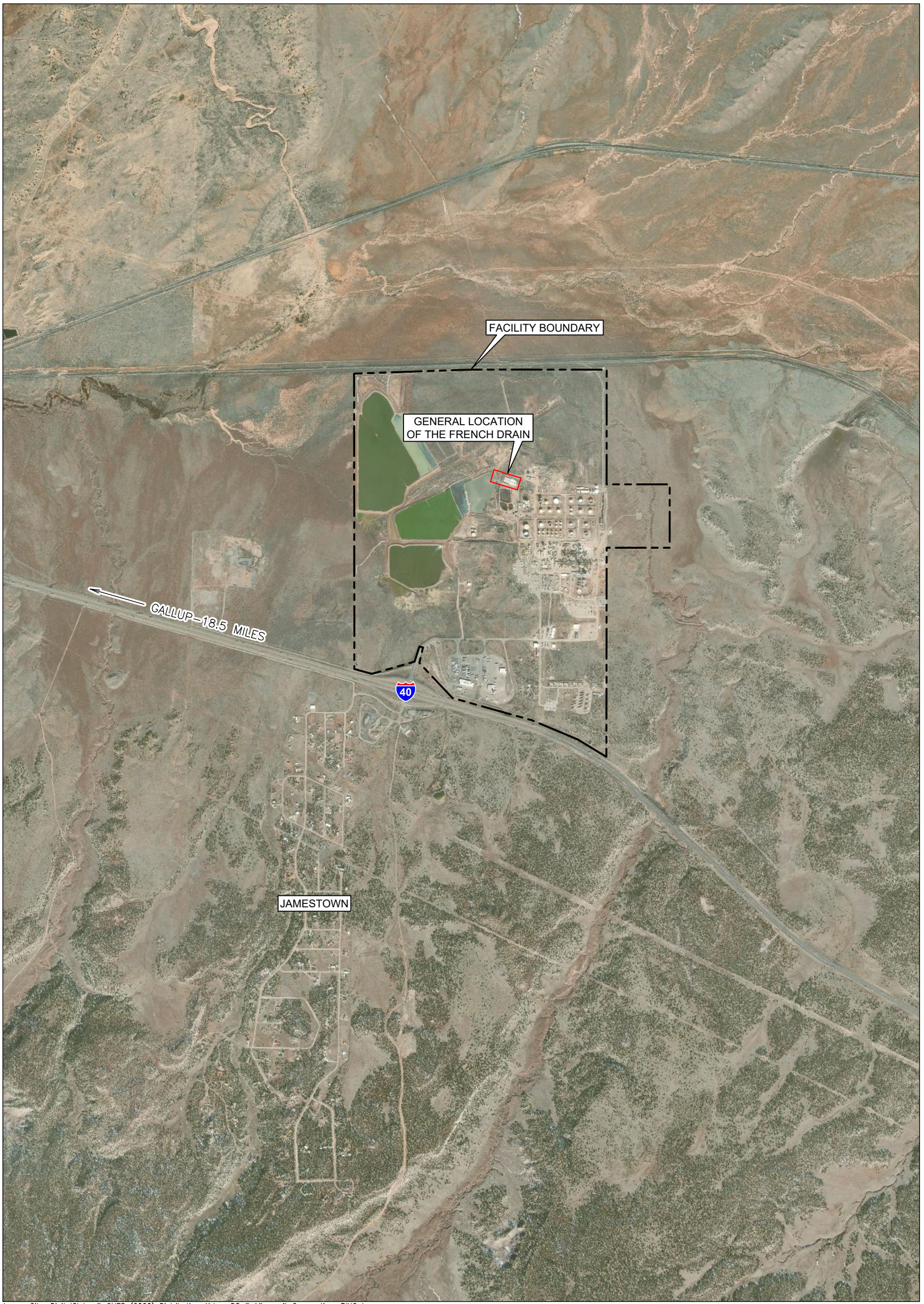
Figures



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EXPLANATION

40 INTERSTATE HIGHWAY

N

0 2,000'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1-1

REFINERY AND FRENCH DRAIN LOCATION
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: BB	Scale: 1" = 2,000'	Date: 3/20/2023	File: 697-FD-FACILITYLOC_202303

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FD-BH-4		
Sample Depth	Analyte	Result
20 - 21 ft bgs	1,2,3-Trichloropropane	ND(0.055)
	Dibenz(a,h)anthracene	ND(0.2)
	N-nitrosodimethylamine	ND(0.4)
24 - 25 ft bgs	1,2,3-Trichloropropane	ND(0.061)
	Dibenz(a,h)anthracene	ND(0.2)
	N-nitrosodimethylamine	ND(0.4)

FD-BH-5		
Sample Depth	Analyte	Result
12.5 - 13.5 ft bgs	1,2,3-Trichloropropane	ND(0.065)
	Dibenz(a,h)anthracene	ND(0.2)
	N-nitrosodimethylamine	ND(0.4)

FD-BH-7		
Sample Depth	Analyte	Result
16 - 17 ft bgs	1,2,3-Trichloropropane	ND(0.061)
	Dibenz(a,h)anthracene	ND(0.18)
	N-nitrosodimethylamine	ND(0.36)

FD-BH-6		
Sample Depth	Analyte	Result
15 - 16 ft bgs	1,2,3-Trichloropropane	ND(0.058)
	Dibenz(a,h)anthracene	ND(0.19)
	N-nitrosodimethylamine	ND(0.39)
18 - 19 ft bgs	1,2,3-Trichloropropane	ND(0.058)
	Dibenz(a,h)anthracene	ND(0.2)
	N-nitrosodimethylamine	ND(0.39)

FD-BH-9		
Sample Depth	Analyte	Result
6.5 - 7.5 ft bgs	Dibenz(a,h)anthracene	ND(0.18)
	N-nitrosodimethylamine	ND(0.36)
7.5 - 8.5 ft bgs	Dibenz(a,h)anthracene	ND(0.17)
	N-nitrosodimethylamine	ND(0.35)
13.75 - 14.75 ft bgs	1,2,3-Trichloropropane	ND(0.055)
	Dibenz(a,h)anthracene	ND(0.2)
	N-nitrosodimethylamine	ND(0.39)

FD-BH-10		
Sample Depth	Analyte	Result
5.2 - 6.2 ft bgs	1,2-Dibromo-3-chloropropane	ND(0.31)
	1,2,3-Trichloropropane	ND(0.31)
	Dibenz(a,h)anthracene	ND(0.2)
	N-nitrosodimethylamine	ND(0.39)
	TPH-GRO	**740**
19 - 20 ft bgs	Dibenz(a,h)anthracene	ND(0.19)
	N-nitrosodimethylamine	ND(0.39)

FD-BH-8		
Sample Depth	Analyte	Result
9 - 10 ft bgs	Dibenz(a,h)anthracene	ND(0.17)
	N-nitrosodimethylamine	ND(0.34)
19 - 19.8 ft bgs	Dibenz(a,h)anthracene	ND(0.29)
	N-nitrosodimethylamine	ND(0.57)

FD-BH-11		
Sample Depth	Analyte	Result
18 - 19 ft bgs	1,2-Dibromo-3-chloropropane	ND(0.34)
	1,2,3-Trichloropropane	ND(0.34)
	Dibenz(a,h)anthracene	ND(0.19)
	N-nitrosodimethylamine	ND(0.38)

FD-BH-12		
Sample Depth	Analyte	Result
10 - 11 ft bgs	1,2,3-Trichloropropane	ND(0.062)
	2,6-Dinitrotoluene	ND(4.9)
	Benzo(a,h)anthracene	ND(2.4)
	Benzo(a)pyrene	ND(2)
	Benzo(b)fluoranthene	ND(2)
	Bis(2-chloroethyl)ether	**ND(2.9)**
	Dibenz(a,h)anthracene	ND(2)
	Indeno(1,2,3-cd)pyrene	ND(2)
	N-nitrosodimethylamine	**ND(3.9)**

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ANALYTE TABLE EXPLANATION

Category	Analyte	Res SSL	CW SSL
VOC	1,2-Dibromo-3-chloropropane	0.08583	**5.532**
	1,2,3-Trichloropropane	0.05105	**8.259**
SVOC	2,6-Dinitrotoluene	3.559	**165.2**
	Benzo(a,h)anthracene	1.531	**239.7**
	Benzo(a)pyrene	1.117	**172.9**
	Benzo(b)fluoranthene	1.531	**239.7**
	Bis(2-chloroethyl)ether	3.114	**1.95**
	Dibenz(a,h)anthracene	0.1531	**23.96**
	Indeno(1,2,3-cd)pyrene	1.531	**239.7**
	N-nitrosodimethylamine	0.02337	**3.664**
General Chemistry	TPH-GRO	100	**500**

EXPLANATION

- FD-BH-12 — BORING AND DESIGNATION (INSTALLED OCTOBER 2022)
- BH-1 — BORING AND DESIGNATION (INSTALLED FEBRUARY 2018)
- OW-65 — MONITORING WELL AND DESIGNATION (APPROXIMATE LOCATION)
- FRENCH DRAIN
- WASTEWATER TREATMENT PLANT
- HYDROCARBON IMPACTS (EXCAVATION INSTALLED FEBRUARY 2018)
- HYDROCARBON ABSENT (EXCAVATION INSTALLED FEBRUARY 2018)

VOCs	VOLATILE ORGANIC COMPOUNDS
SVOCs	SEMI-VOLATILE ORGANIC COMPOUNDS
FT BGS	FEET BELOW GROUND SURFACE
TPH-GRO	TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS
SSL	SOIL SCREENING LEVEL
RES	RESIDENTIAL
CW	CONSTRUCTION WORKER
ND(X)	NON DETECT AT THE REPORTING LIMIT OF X

N

0 200'

NOTE:

VALUES IN **BOLD AND BLACK TEXT** EXCEED CONSTRUCTION WORKER SSL

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1-2
SOIL BORING LOCATIONS AND SAMPLE RESULTS
FRENCH DRAIN
SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP | Checked By: BB | Scale: 1" = 200' | Date: 3/20/2023 | File: 697-FD-BORINGSOILLOC_202303

Received by OCD: 3/28/2023 4:44:58 PM

Released to Imaging: 3/28/2023 4:52:11 PM

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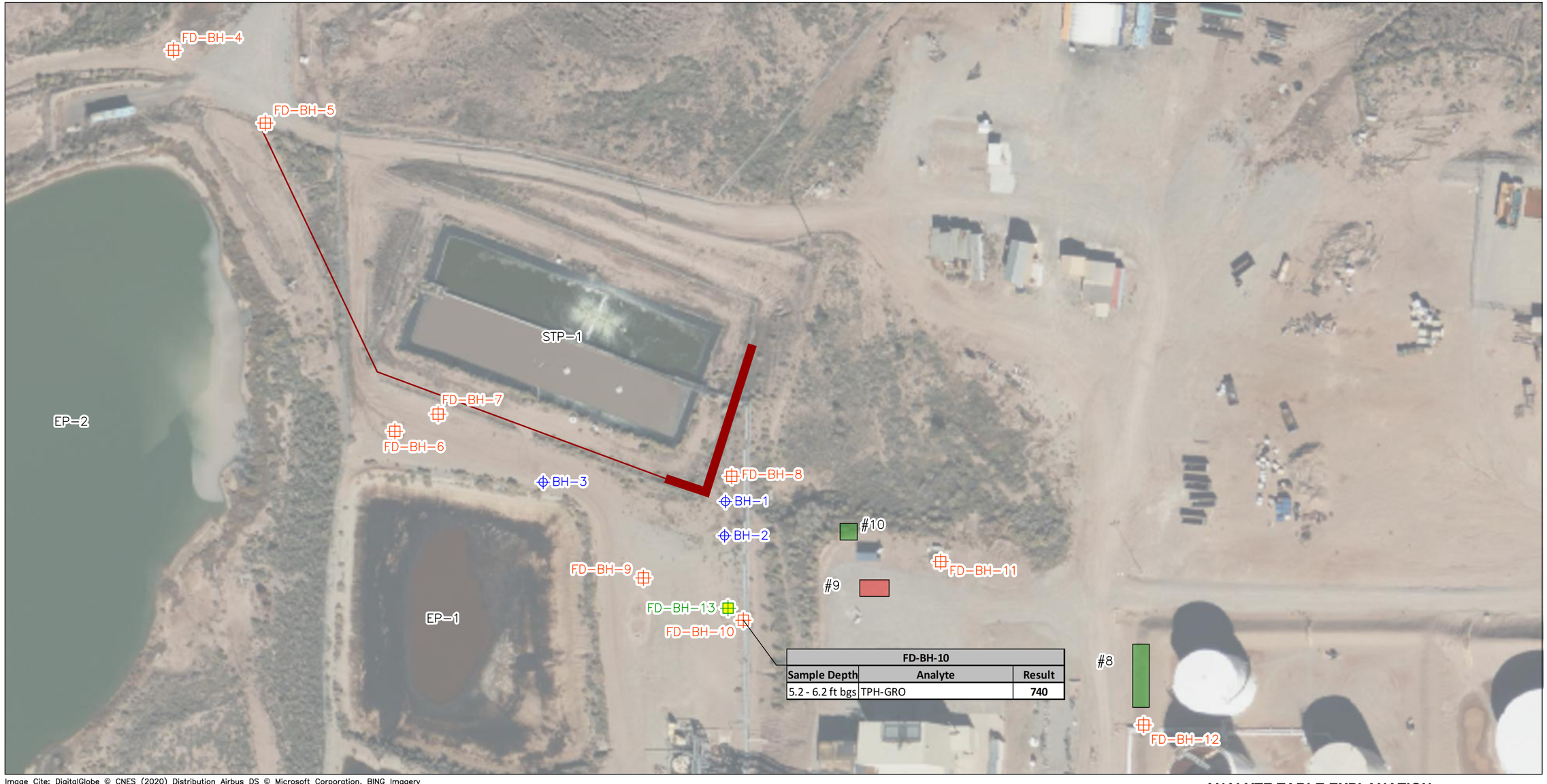

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EXPLANATION

FD-BH-13	PROPOSED STEP-OUT BORING AND DESIGNATION (PLANNED SUMMER 2023)
FD-BH-12	BORING AND DESIGNATION (INSTALLED OCTOBER 2022)
BH-1	BORING AND DESIGNATION (INSTALLED FEBRUARY 2018)
	FRENCH DRAIN
	HYDROCARBON IMPACTS (EXCAVATION INSTALLED FEBRUARY 2018)
	HYDROCARBON ABSENT (EXCAVATION INSTALLED FEBRUARY 2018)

FT BGS	FEET BELOW GROUND SURFACE
TPH-GRO	TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS
SSL	SOIL SCREENING LEVEL
RES	RESIDENTIAL
CW	CONSTRUCTION WORKER
STP	SANITARY TREATMENT POND
EP	EVAPORATION POND

NOTE:

VALUES IN **BOLD AND BLACK TEXT** EXCEED CONSTRUCTION WORKER SSL

N

0 100'

ANALYTE TABLE EXPLANATION

Category	Analyte	Res SSL	CW SSL
General Chemistry	TPH-GRO	100	**500**

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 4-1
PROPOSED STEP-OUT LOCATIONS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC
D/B/A MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: BB	Scale: 1" = 100'	Date: 3/20/2023	File: 697-FD-PROPSTOUTLOC_202303

\\TRIHYDRO.COM\CLIENTS\ITON\MARATHON\CADD\GALLUP__REPORTS\FRENCHDRAIN\FRENCHDRAININVESTIGATION\202303_FRENCHDRAININV-RPT\697-FD-PROPSTOUTLOC_202303

Received by OCD: 3/28/2023 4:44:58 PM

Released to Imaging: 3/28/2023 4:52:11 PM

Tables

TABLE 2-1. SAMPLING LOCATIONS, DEPTHS, AND PID READINGS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Soil Boring	Sample depth (ft bgs)	PID reading (ppm)	Soil Sample ID	Sample Collection Rationale
FD-BH-4	0 - 2	0		
	2 - 4	0	--	--
	4 - 6	0	--	--
	6 - 8	0	--	--
	8 - 10	0	--	--
	10 - 12	0	--	--
	12 - 14	0	--	--
	14 - 16	0	--	--
	16 - 18	1.7	--	--
	18 - 20	1.8	FD-BH-4 (18.5-18.75 ft bgs)	Geotechnical sample closest to analytical sample
	20 - 22	16.2	FD-BH-4 (20-21 ft bgs)	Highest PID reading, Above Water Table
	22 - 24	2.2	--	--
	24 - 25	0	FD-BH-4 (24-25 ft bgs)	Terminal Depth
FD-BH-5	0 - 2	0		
	2 - 6	0	--	--
	6 - 8	0	--	--
	8 - 10	0	--	--
	10 - 12	0	--	--
	12 - 13.5	0	FD-BH-5 (12.5-13.5 ft bgs) FD-BH-5 (12.25-12.5 ft bgs)	Terminal Depth, Geotechnical sample
FD-BH-6	0	0.8	--	--
	0 - 2	0.9		
	2 - 6	1.8	--	--
	6 - 8	0.5	--	--
	8 - 10	2.0	--	--
	10 - 12	1.5	--	--
	12 - 14	1.6	--	--
	14 - 16	2.2	FD-BH-6 (15-16 ft bgs) FD-BH-6 (15.75-16 ft bgs)	Highest PID reading, Geotechnical sample
	16 - 19	1.7	FD-BH-6 (18-19 ft bgs) FD-BH-6 (18.5-18.75 ft bgs)	Terminal Depth, Geotechnical sample

TABLE 2-1. SAMPLING LOCATIONS, DEPTHS, AND PID READINGS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Soil Boring	Sample depth (ft bgs)	PID reading (ppm)	Soil Sample ID	Sample Collection Rationale
FD-BH-7	0 - 2	0.3	--	--
	2 - 6	0.8	--	--
	6 - 8	0.5	--	--
	8 - 10	0.4	--	--
	10 - 12	0.8	--	--
	12 - 14	0.5	--	--
	14 - 16	0.8	--	--
	16 - 17	1.1	FD-BH-7 (16-17 ft bgs) FD-BH-7 (16.5-16.75 ft bgs)	Highest PID reading, Terminal Depth, Geotechnical sample
FD-BH-8	0 - 2	0.8	--	--
	2 - 6	1.1	--	--
	6 - 8	1.9	--	--
	8 - 10	2.3	--	--
	10 - 12	374.4	FD-BH-8 (9-10 ft bgs) FD-BH-8 (10-10.25 ft bgs)	Highest PID reading, Geotechnical sample
	12 - 14	3.1	--	--
	14 - 16	1.4	--	--
	16 - 18	7.2	--	--
	18 - 18.8	5.1	--	--
	18.8 - 19.8	4.3	FD-BH-8 (19-19.8 ft bgs) FD-BH-8 (19-19.25 ft bgs)	Terminal Depth, Geotechnical sample
FD-BH-9	0 - 2	1.6	--	--
	2 - 4	2.0	--	--
	4 - 6	1.5	--	--
	6 - 6.5	4.1	--	--
	6.5 - 8	51.6	FD-BH-9 (6.5-7.5 ft bgs) FD-BH-9 (7.5-7.75 ft bgs)	Highest PID reading, Geotechnical sample
	8 - 10	71.5	FD-BH-9 (7.5-8.5 ft bgs) FD-BH-9 (7.75-8. ft bgs)	Above Water Table, Geotechnical sample
	10 - 12	4.7	--	--
	12 - 13.75	1.8	FD-BH-9 (13.5-13.75 ft bgs)	Geotechnical sample closest to analytical sample
	13.75 - 14.75	1.9	FD-BH-9 (13.75-14.75 ft bgs)	Terminal Depth

TABLE 2-1. SAMPLING LOCATIONS, DEPTHS, AND PID READINGS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Soil Boring	Sample depth (ft bgs)	PID reading (ppm)	Soil Sample ID	Sample Collection Rationale
FD-BH-10	0 - 2	2.3	--	--
	2 - 2.3	7.2	--	--
	2.3 - 2.5	686.4	--	Not recovery enough to sample
	5.2 - 6.2	432.6	FD-BH-10 (5.2-6.2 ft bgs)	Highest PID reading, Above Water Table
	6.2 - 8	4.8	--	Not recovery enough to sample
	8 - 10	5.6	FD-BH-10 (8.25-8.5 ft bgs)	Geotechnical sample closest to analytical sample
	10 - 12	14.3	--	--
	12 - 14	168.8	--	--
	14 - 16	367.5	--	--
	16 - 18	437.2	--	--
	18 - 20	150.4	FD-BH-10 (19-20 ft bgs) FD-BH-10 (19.25-20.5 ft bgs)	Terminal Depth, Geotechnical sample
FD-BH-11	0 - 2	1.2	--	--
	2 - 6	1.2	--	--
	6 - 8	4.6	--	--
	8 - 10	4.8	--	--
	10 - 12	4.8	--	--
	12 - 14	8.0	--	--
	14 - 16	7.9	FD-BH-11 (15.5-15.75 ft bgs)	Geotechnical sample closest to analytical sample
	16 - 18	40.3	--	--
	18 - 19	1388	FD-BH-11 (18-19 ft bgs)	Highest PID reading, Terminal Depth
FD-BH-12	0	1.3	--	--
	0 - 2	3.2	--	--
	2 - 4	3.3	--	--
	4 - 6	0.6	--	--
	6 - 8	18	--	--
	8 - 10	8.2	FD-BH-12 (9.25-9.5 ft bgs)	Geotechnical sample closest to analytical sample
	10 - 11	64	FD-BH-12 (10-11 ft bgs)	Highest PID reading, Terminal Depth

-- - Not applicable
FD - French Drain
ft bgs - Foot/feet below ground surface
ID - identification
PID - Photoionization detector
ppm - Parts per million

TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Acetone (mg/kg)	Benzene (mg/kg)	Bromobenzene (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Bromomethane (mg/kg)	2-Butanone (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.36)	0.021	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.073)	ND(0.24)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(2.3)	0.97	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.46)	ND(1.5)
FD-BH-11 (18-19 ft)	10/21/22	ND(2.5)	ND(0.084)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.51)	ND(1.7)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.46)	ND(0.015)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.092)	ND(0.31)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.41)	ND(0.014)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.082)	ND(0.27)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.46)	ND(0.015)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.092)	ND(0.31)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.49)	ND(0.016)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.098)	ND(0.33)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.48)	ND(0.016)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.096)	ND(0.32)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.44)	ND(0.015)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.087)	ND(0.29)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.43)	ND(0.014)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.086)	ND(0.29)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.46)	ND(0.015)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.091)	ND(0.3)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.36)	ND(0.012)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.072)	ND(0.24)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.39)	0.059 J+	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.077)	ND(0.26)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.41)	ND(0.014)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.082)	ND(0.27)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.37)	ND(0.012)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.074)	ND(0.25)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.37)	ND(0.012)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.074)	ND(0.25)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.38)	ND(0.013)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.076)	ND(0.25)
2022 Construction NMED SSL		241,500	423.4	NA	142.6	23,750	17.86	91,660
2022 Residential NMED SSL		66,310	17.79	NA	6.193	674.1	17.73	37,420

Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
1. Bold text indicates results that exceed the NMED Residential SSL.
2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	n-Butyl-benzene (mg/kg)	sec-Butylbenzene (mg/kg)	tert-Butyl-benzene (mg/kg)	Carbon Disulfide (mg/kg)	Carbon tetrachloride (mg/kg)	Chlorobenzene (mg/kg)	Chloroethane (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.073)	ND(0.024)	ND(0.024)	ND(0.24)	ND(0.024)	ND(0.024)	ND(0.049)
FD-BH-10 (5.2-6.2 ft)	10/20/22	0.71	0.8	ND(0.15)	ND(1.5)	ND(0.15)	ND(0.15)	ND(0.31)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.51)	ND(0.17)	ND(0.17)	ND(1.7)	ND(0.17)	ND(0.17)	ND(0.34)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.092)	ND(0.031)	ND(0.031)	ND(0.31)	ND(0.031)	ND(0.031)	ND(0.062)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.082)	ND(0.027)	ND(0.027)	ND(0.27)	ND(0.027)	ND(0.027)	ND(0.055)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.092)	ND(0.031)	ND(0.031)	ND(0.31)	ND(0.031)	ND(0.031)	ND(0.061)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.098)	ND(0.033)	ND(0.033)	ND(0.33)	ND(0.033)	ND(0.033)	ND(0.065)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.096)	ND(0.032)	ND(0.032)	ND(0.32)	ND(0.032)	ND(0.032)	ND(0.064)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.087)	ND(0.029)	ND(0.029)	ND(0.29)	ND(0.029)	ND(0.029)	ND(0.058)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.086)	ND(0.029)	ND(0.029)	ND(0.29)	ND(0.029)	ND(0.029)	ND(0.058)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.091)	ND(0.03)	ND(0.03)	ND(0.3)	ND(0.03)	ND(0.03)	ND(0.061)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.072)	ND(0.024)	ND(0.024)	ND(0.24)	ND(0.024)	ND(0.024)	ND(0.048)
FD-BH-8 (9-10 ft)	10/20/22	0.086 J+	0.077 J+	ND(0.026)	ND(0.26)	ND(0.026)	ND(0.026)	ND(0.051)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.082)	ND(0.027)	ND(0.027)	ND(0.27)	ND(0.027)	ND(0.027)	ND(0.055)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.074)	ND(0.025)	ND(0.025)	ND(0.25)	ND(0.025)	ND(0.025)	ND(0.05)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.074)	0.035	ND(0.025)	ND(0.25)	ND(0.025)	ND(0.025)	ND(0.05)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.076)	ND(0.025)	ND(0.025)	ND(0.25)	ND(0.025)	ND(0.025)	ND(0.05)
2022 Construction NMED SSL		NA	NA	NA	1,621	252.3	411.6	16,640
2022 Residential NMED SSL		NA	NA	NA	1,554	10.73	378.4	19,000

Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
1. Bold text indicates results that exceed the NMED Residential SSL.
2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Chloroform (mg/kg)	Chloromethane (mg/kg)	2-Chlorotoluene (mg/kg)	4-Chlorotoluene (mg/kg)	1,2-Dibromo 3-chloro-propane (mg/kg)	Dibromochloromethane (mg/kg)	1,2-Dibromoethane (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.024)	ND(0.073)	ND(0.024)	ND(0.024)	ND(0.049)	ND(0.024)	ND(0.024)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.15)	ND(0.46)	ND(0.15)	ND(0.15)	**ND(0.31)***	ND(0.15)	ND(0.15)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.17)	ND(0.51)	ND(0.17)	ND(0.17)	**ND(0.34)***	ND(0.17)	ND(0.17)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.031)	ND(0.092)	ND(0.031)	ND(0.031)	ND(0.062)	ND(0.031)	ND(0.031)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.027)	ND(0.082)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.027)	ND(0.027)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.031)	ND(0.092)	ND(0.031)	ND(0.031)	ND(0.061)	ND(0.031)	ND(0.031)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.033)	ND(0.098)	ND(0.033)	ND(0.033)	ND(0.065)	ND(0.033)	ND(0.033)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.032)	ND(0.096)	ND(0.032)	ND(0.032)	ND(0.064)	ND(0.032)	ND(0.032)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.029)	ND(0.087)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.029)	ND(0.029)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.029)	ND(0.086)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.029)	ND(0.029)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.03)	ND(0.091)	ND(0.03)	ND(0.03)	ND(0.061)	ND(0.03)	ND(0.03)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.024)	ND(0.072)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.024)	ND(0.024)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.026)	ND(0.077)	ND(0.026)	ND(0.026)	ND(0.051)	ND(0.026)	ND(0.026)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.027)	ND(0.082)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.027)	ND(0.027)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.025)	ND(0.074)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.025)	ND(0.074)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.025)	ND(0.076)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)	ND(0.025)
2022 Construction NMED SSL		133.9	955.7	7,079	NA	5.532	340.5	16.32
2022 Residential NMED SSL		5.899	41.14	1,564	NA	0.08583	13.9	0.6725

Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
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2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Dibromomethane (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	Dichlorodifluoromethane (mg/kg)	1,1-Dichloroethane (mg/kg)	1,2-Dichloroethane (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
2022 Construction NMED SSL		53.89	2,496	NA	45,880	160.9	1,817	195.4
2022 Residential NMED SSL		57.9	2,150	NA	1,287	181.9	78.61	8.315

Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
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TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,1-Dichloroethene (mg/kg)	cis-1,2-Dichloroethene (mg/kg)	trans-1,2-Dichloroethene (mg/kg)	1,2-Dichloropropane (mg/kg)	1,3-Dichloropropane (mg/kg)	2,2-Dichloropropane (mg/kg)	1,1-Dichloropropene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.049)	ND(0.049)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.31)	ND(0.31)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.34)	ND(0.34)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.062)	ND(0.062)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.055)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.061)	ND(0.061)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.065)	ND(0.065)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.064)	ND(0.064)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.058)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.058)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.061)	ND(0.061)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.048)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.051)	ND(0.051)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.055)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.05)
2022 Construction NMED SSL		423.9	707.9	206.5	415	NA	NA	NA
2022 Residential NMED SSL		439.9	156.4	210.2	17.77	NA	NA	NA

Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
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TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	cis-1,3-Dichloropropene (mg/kg)	trans-1,3-Dichloropropene (mg/kg)	Ethylbenzene (mg/kg)	Hexachlorobutadiene (mg/kg)	2-Hexanone (mg/kg)	Isopropylbenzene (mg/kg)	p-Isopropyl-toluene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.024)	ND(0.024)	0.058	ND(0.049)	ND(0.24)	ND(0.024)	ND(0.024)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.15)	ND(0.15)	4.5	ND(0.31)	ND(1.5)	1.6	0.68
FD-BH-11 (18-19 ft)	10/21/22	ND(0.17)	ND(0.17)	0.23	ND(0.34)	ND(1.7)	ND(0.17)	ND(0.17)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.062)	ND(0.31)	ND(0.031)	ND(0.031)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.27)	ND(0.027)	ND(0.027)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.061)	ND(0.31)	ND(0.031)	ND(0.031)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.065)	ND(0.33)	ND(0.033)	ND(0.033)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.064)	ND(0.32)	ND(0.032)	ND(0.032)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.29)	ND(0.029)	ND(0.029)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.29)	ND(0.029)	ND(0.029)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.061)	ND(0.3)	ND(0.03)	ND(0.03)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.24)	ND(0.024)	ND(0.024)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.026)	ND(0.026)	0.28 J+	ND(0.051)	ND(0.26)	0.11 J+	0.073 J+
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.27)	ND(0.027)	ND(0.027)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.25)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.25)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.25)	ND(0.025)	ND(0.025)
2022 Construction NMED SSL		NA	NA	1,772	2,395	NA	2,738	NA
2022 Residential NMED SSL		NA	NA	75.11	68.28	NA	2,364	NA

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UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
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FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	4-Methyl-2-Pentanone (mg/kg)	Methylene Chloride (mg/kg)	1-Methylnaphthalene (mg/kg)	2-Methylnaphthalene (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	n-Propylbenzene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.24)	ND(0.073)	ND(0.097)	ND(0.097)	ND(0.024)	ND(0.049)	0.028
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(1.5)	ND(0.46)	ND(0.61)	ND(0.61)	ND(0.15)	ND(0.31)	2.2
FD-BH-11 (18-19 ft)	10/21/22	ND(1.7)	ND(0.51)	ND(0.68)	ND(0.68)	ND(0.17)	ND(0.34)	ND(0.17)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.31)	ND(0.092)	ND(0.12)	ND(0.12)	ND(0.031)	ND(0.062)	ND(0.031)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.27)	ND(0.082)	ND(0.11)	ND(0.11)	ND(0.027)	ND(0.055)	ND(0.027)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.31)	ND(0.092)	ND(0.12)	ND(0.12)	ND(0.031)	ND(0.061)	ND(0.031)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.33)	ND(0.098)	ND(0.13)	ND(0.13)	ND(0.033)	ND(0.065)	ND(0.033)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.32)	ND(0.096)	ND(0.13)	ND(0.13)	ND(0.032)	ND(0.064)	ND(0.032)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.29)	ND(0.087)	ND(0.12)	ND(0.12)	ND(0.029)	ND(0.058)	ND(0.029)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.29)	ND(0.086)	ND(0.12)	ND(0.12)	ND(0.029)	ND(0.058)	ND(0.029)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.3)	ND(0.091)	ND(0.12)	ND(0.12)	ND(0.03)	ND(0.061)	ND(0.03)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.24)	ND(0.072)	ND(0.096)	ND(0.096)	ND(0.024)	ND(0.048)	ND(0.024)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.26)	ND(0.077)	ND(0.1)	ND(0.1)	ND(0.026)	0.058 J+	0.17 J+
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.27)	ND(0.082)	ND(0.11)	ND(0.11)	ND(0.027)	ND(0.055)	ND(0.027)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.25)	ND(0.074)	ND(0.099)	ND(0.099)	ND(0.025)	ND(0.05)	ND(0.025)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.25)	ND(0.074)	ND(0.099)	ND(0.099)	ND(0.025)	ND(0.05)	ND(0.025)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.25)	ND(0.076)	ND(0.1)	ND(0.1)	ND(0.025)	ND(0.05)	ND(0.025)
2022 Construction NMED SSL		20,230	89,550	6,059	1,004	NA	632.9	NA
2022 Residential NMED SSL		5,809	765.7	171.6	231.8	NA	22.6	NA

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ID - identification
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mg/kg - Milligrams per kilogram
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NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
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FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Styrene (mg/kg)	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	Tetrachloroethene (mg/kg)	Toluene (mg/kg)	1,2,3-Trichlorobenzene (mg/kg)	1,2,4-Trichlorobenzene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	0.079	ND(0.049)	ND(0.024)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	7.8	ND(0.31)	ND(0.15)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.34)	ND(0.17)
FD-BH-12 (10-11 ft)	10/21/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.062)	ND(0.031)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.027)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.061)	ND(0.031)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.065)	ND(0.033)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.064)	ND(0.032)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.029)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.058)	ND(0.029)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.061)	ND(0.03)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.024)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.051)	ND(0.026)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.055)	ND(0.027)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)
2022 Construction NMED SSL		10,170	658.5	196.5	7,911	14,040	NA	8,543
2022 Residential NMED SSL		7,264	28.06	7.984	337.4	5,228	NA	239.7

Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
1. Bold text indicates results that exceed the NMED Residential SSL.
2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,1,1-Trichloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	Trichloroethene (mg/kg)	Trichlorofluoromethane (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.049)	0.11	0.044
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.15)	ND(0.15)	ND(0.15)	ND(0.15)	**ND(0.31)***	8.5	3.1
FD-BH-11 (18-19 ft)	10/21/22	ND(0.17)	ND(0.17)	ND(0.17)	ND(0.17)	**ND(0.34)***	0.77	0.3
FD-BH-12 (10-11 ft)	10/21/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	**ND(0.062)***	ND(0.031)	ND(0.031)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	**ND(0.055)***	ND(0.027)	ND(0.027)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.031)	ND(0.031)	ND(0.031)	ND(0.031)	**ND(0.061)***	ND(0.031)	ND(0.031)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.033)	ND(0.033)	ND(0.033)	ND(0.033)	**ND(0.065)***	ND(0.033)	ND(0.033)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.032)	ND(0.032)	ND(0.032)	ND(0.032)	**ND(0.064)***	ND(0.032)	ND(0.032)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	**ND(0.058)***	ND(0.029)	ND(0.029)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.029)	ND(0.029)	ND(0.029)	ND(0.029)	**ND(0.058)***	ND(0.029)	ND(0.029)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)	**ND(0.061)***	ND(0.03)	ND(0.03)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.048)	ND(0.024)	ND(0.024)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.026)	ND(0.051)	0.89 J+	0.33 J+
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.027)	ND(0.027)	ND(0.027)	ND(0.027)	**ND(0.055)***	ND(0.027)	ND(0.027)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)	ND(0.025)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.05)	ND(0.025)	ND(0.025)
2022 Construction NMED SSL		13,600	4,301	5,368	1,127	8.259	NA	NA
2022 Residential NMED SSL		14,370	18.76	15.48	1,231	0.05105	NA	NA

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Dup - Duplicate sample
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ID - identification
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
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2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
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TABLE 3-1. VOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Vinyl Chloride (mg/kg)	Xylenes, Total (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.024)	0.33
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.15)	25
FD-BH-11 (18-19 ft)	10/21/22	ND(0.17)	1.5
FD-BH-12 (10-11 ft)	10/21/22	ND(0.031)	ND(0.062)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.027)	ND(0.055)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.031)	ND(0.061)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.033)	ND(0.065)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.032)	ND(0.064)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.029)	ND(0.058)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.029)	ND(0.058)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.03)	ND(0.061)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.024)	ND(0.048)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.026)	1.7 J+
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.027)	ND(0.055)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.025)	ND(0.05)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.025)	ND(0.05)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.025)	ND(0.05)
2022 Construction NMED SSL		161	798.3
2022 Residential NMED SSL		0.742	870.8

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NMED - New Mexico Environment Department
SSL - Soil Screening Level
UJ - Estimated reporting limit
VOC - Volatile organic compounds
Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	1,2,4-Trichlorobenzene (mg/kg)	1,2-Dichlorobenzene (mg/kg)	1,3-Dichlorobenzene (mg/kg)	1,4-Dichlorobenzene (mg/kg)	1-Methylnaphthale (mg/kg)	2,4,5-Trichlorophenol (mg/kg)	2,4,6-Trichlorophenol (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.24) UJ	ND(0.24)	ND(0.24)	ND(0.24) UJ	ND(0.24)	ND(0.24)	ND(0.39)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.24) UJ	ND(0.24)	ND(0.24)	ND(0.24) UJ	ND(0.24)	ND(0.24)	ND(0.39)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.24) UJ	ND(0.24)	ND(0.24)	ND(0.24) UJ	ND(0.24)	ND(0.24)	ND(0.38)
FD-BH-12 (10-11 ft)	10/21/22	ND(2.4) UJ	ND(2.4)	ND(2.4)	ND(2.4) UJ	ND(2.4)	ND(2.4)	ND(3.9)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.4)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.4)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.4)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.39)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.39)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.39)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.36)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.36)	ND(0.57)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.21)	ND(0.34)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.39)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.36)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.22)	ND(0.35)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.38)
2022 Construction NMED SSL		8,543	2,496	NA	45,880	6,059	26,910	16,980
2022 Residential NMED SSL		239.7	2,150	NA	1,287	171.6	6,163	484.1

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SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2,4-Dichlorophenol (mg/kg)	2,4-Dimethylphenol (mg/kg)	2,4-Dinitrophenol (mg/kg)	2,4-Dinitrotoluene (mg/kg)	2,6-Dinitrotoluene (mg/kg)	2-Chloronaphthalene (mg/kg)	2-Chlorophenol (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.39)	ND(0.29)	ND(0.48)	ND(0.48) UJ	ND(0.48)	ND(0.24)	ND(0.24) UJ
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.39)	ND(0.29)	ND(0.49)	ND(0.49) UJ	ND(0.49)	ND(0.24)	ND(0.24) UJ
FD-BH-11 (18-19 ft)	10/21/22	ND(0.38)	ND(0.29)	ND(0.48)	ND(0.48) UJ	ND(0.48)	ND(0.24)	ND(0.24) UJ
FD-BH-12 (10-11 ft)	10/21/22	ND(3.9)	ND(2.9)	ND(4.9)	ND(4.9) UJ	**ND(4.9)***	ND(2.4)	ND(2.4) UJ
FD-BH-4 (20-21 ft)	10/19/22	ND(0.4)	ND(0.3)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.25)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.4)	ND(0.3)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.25)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.4)	ND(0.3)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.25)	ND(0.25)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.39)	ND(0.29)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.24)	ND(0.24)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.39)	ND(0.29)	ND(0.48)	ND(0.48)	ND(0.48)	ND(0.24)	ND(0.24)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.39)	ND(0.29)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.25)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.36)	ND(0.27)	ND(0.45)	ND(0.45)	ND(0.45)	ND(0.23)	ND(0.23)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.57)	ND(0.43)	ND(0.72)	ND(0.72)	ND(0.72)	ND(0.36)	ND(0.36)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.34)	ND(0.26)	ND(0.43)	ND(0.43)	ND(0.43)	ND(0.21)	ND(0.21)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.39)	ND(0.3)	ND(0.49)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.25)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.36)	ND(0.27)	ND(0.45)	ND(0.45)	ND(0.45)	ND(0.22)	ND(0.22)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.35)	ND(0.26)	ND(0.44)	ND(0.44)	ND(0.44)	ND(0.22)	ND(0.22)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.38)	ND(0.28)	ND(0.47)	ND(0.47)	ND(0.47)	ND(0.24)	ND(0.24)
2022 Construction NMED SSL		807.2	5,381	538.1	599.7	165.2	28,320	1,770
2022 Residential NMED SSL		184.9	1,233	123.3	17.1	3.559	6,257	391.1

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ft - Feet below ground surface
ID - identification
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Methylnaphthalene (mg/kg)	2-Methylphenol (mg/kg)	2-Nitroaniline (mg/kg)	2-Nitrophenol (mg/kg)	3,3'-Dichlorobenzidine (mg/kg)	3,4-Methylphenol (mg/kg)	3-Nitroaniline (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.24)	ND(0.39)	ND(0.39)	ND(0.24)	ND(0.24)	ND(0.39)	ND(0.19)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.24)	ND(0.39)	ND(0.39)	ND(0.24)	ND(0.24)	ND(0.39)	ND(0.2)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.24)	ND(0.38)	ND(0.38)	ND(0.24)	ND(0.24)	ND(0.38)	ND(0.19)
FD-BH-12 (10-11 ft)	10/21/22	ND(2.4)	ND(3.9)	ND(3.9)	ND(2.4)	ND(2.4)	ND(3.9)	ND(2)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.25)	ND(0.4)	ND(0.4)	ND(0.25)	ND(0.25)	ND(0.4)	ND(0.2)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.25)	ND(0.4)	ND(0.4)	ND(0.25)	ND(0.25)	ND(0.4)	ND(0.2)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.25)	ND(0.4)	ND(0.4)	ND(0.25)	ND(0.25)	ND(0.4)	ND(0.2)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.24)	ND(0.39)	ND(0.39)	ND(0.24)	ND(0.24)	ND(0.39)	ND(0.2)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.24)	ND(0.39)	ND(0.39)	ND(0.24)	ND(0.24)	ND(0.39)	ND(0.19)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.25)	ND(0.39)	ND(0.39)	ND(0.25)	ND(0.25)	ND(0.39)	ND(0.2)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.23)	ND(0.36)	ND(0.36)	ND(0.23)	ND(0.23)	ND(0.36)	ND(0.18)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.36)	ND(0.57)	ND(0.57)	ND(0.36)	ND(0.36)	ND(0.57)	ND(0.29)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.21)	ND(0.34)	ND(0.34)	ND(0.21)	ND(0.21)	ND(0.34)	ND(0.17)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.25)	ND(0.39)	ND(0.39)	ND(0.25)	ND(0.25)	ND(0.39)	ND(0.2)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.22)	ND(0.36)	ND(0.36)	ND(0.22)	ND(0.22)	ND(0.36)	ND(0.18)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.22)	ND(0.35)	ND(0.35)	ND(0.22)	ND(0.22)	ND(0.35)	ND(0.17)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.24)	ND(0.38)	ND(0.38)	ND(0.24)	ND(0.24)	ND(0.38)	ND(0.19)
2022 Construction NMED SSL		1,004	NA	NA	NA	409.6	NA	NA
2022 Residential NMED SSL		231.8	NA	NA	NA	11.83	NA	NA

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ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	2-Methyl-4,6-dinitrophenol (mg/kg)	4-Bromophenyl phenyl ether (mg/kg)	4-Chloro-3-Methylphenol (mg/kg)	4-Chloroaniline (mg/kg)	4-Chlorophenyl phenyl ether (mg/kg)	4-Nitroaniline (mg/kg)	4-Nitrophenol (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.39)	ND(0.24)	ND(0.48) UJ	ND(0.48)	ND(0.24)	ND(0.39)	ND(0.39) UJ
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.39)	ND(0.24)	ND(0.49) UJ	ND(0.49)	ND(0.24)	ND(0.39)	ND(0.39) UJ
FD-BH-11 (18-19 ft)	10/21/22	ND(0.38)	ND(0.24)	ND(0.48) UJ	ND(0.48)	ND(0.24)	ND(0.38)	ND(0.38) UJ
FD-BH-12 (10-11 ft)	10/21/22	ND(3.9)	ND(2.4)	ND(4.9) UJ	ND(4.9)	ND(2.4)	ND(3.9)	ND(3.9) UJ
FD-BH-4 (20-21 ft)	10/19/22	ND(0.4)	ND(0.25)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.4)	ND(0.4)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.4)	ND(0.25)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.4)	ND(0.4)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.4)	ND(0.25)	ND(0.5)	ND(0.5)	ND(0.25)	ND(0.4)	ND(0.4)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.39)	ND(0.24)	ND(0.49)	ND(0.49)	ND(0.24)	ND(0.39)	ND(0.39)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.39)	ND(0.24)	ND(0.48)	ND(0.48)	ND(0.24)	ND(0.39)	ND(0.39)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.39)	ND(0.25)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.39)	ND(0.39)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.36)	ND(0.23)	ND(0.45)	ND(0.45)	ND(0.23)	ND(0.36)	ND(0.36)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.57)	ND(0.36)	ND(0.72)	ND(0.72)	ND(0.36)	ND(0.57)	ND(0.57)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.34)	ND(0.21)	ND(0.43)	ND(0.43)	ND(0.21)	ND(0.34)	ND(0.34)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.39)	ND(0.25)	ND(0.49)	ND(0.49)	ND(0.25)	ND(0.39)	ND(0.39)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.36)	ND(0.22)	ND(0.45)	ND(0.45)	ND(0.22)	ND(0.36)	ND(0.36)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.35)	ND(0.22)	ND(0.44)	ND(0.44)	ND(0.22)	ND(0.35)	ND(0.35)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.38)	ND(0.24)	ND(0.47)	ND(0.47)	ND(0.24)	ND(0.38)	ND(0.38)
2022 Construction NMED SSL		NA	NA	NA	NA	NA	NA	NA
2022 Residential NMED SSL		NA	NA	NA	NA	NA	NA	NA

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Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Acenaphthene (mg/kg)	Acenaphthylene (mg/kg)	Aniline (mg/kg)	Anthracene (mg/kg)	Azobenzene (mg/kg)	Benzo(a) anthracene (mg/kg)	Benzo(a)pyrene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.24) UJ	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.24)	ND(0.24)	ND(0.19)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.24) UJ	ND(0.24)	ND(0.2)	ND(0.2)	ND(0.24)	ND(0.24)	ND(0.2)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.24) UJ	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.24)	ND(0.24)	ND(0.19)
FD-BH-12 (10-11 ft)	10/21/22	ND(2.4) UJ	ND(2.4)	ND(2)	ND(2)	ND(2.4)	**ND(2.4)***	**ND(2)***
FD-BH-4 (20-21 ft)	10/19/22	ND(0.25)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.25)	ND(0.2)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.25)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.25)	ND(0.2)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.25)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.25)	ND(0.2)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.24)	ND(0.24)	ND(0.2)	ND(0.2)	ND(0.24)	ND(0.24)	ND(0.2)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.24)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.24)	ND(0.24)	ND(0.19)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.25)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.25)	ND(0.2)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.18)	ND(0.23)	ND(0.23)	ND(0.18)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.36)	ND(0.36)	ND(0.29)	ND(0.29)	ND(0.36)	ND(0.36)	ND(0.29)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.21)	ND(0.21)	ND(0.17)	ND(0.17)	ND(0.21)	ND(0.21)	ND(0.17)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.25)	ND(0.25)	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.25)	ND(0.2)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.22)	ND(0.22)	ND(0.18)	ND(0.18)	ND(0.22)	ND(0.22)	ND(0.18)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.22)	ND(0.22)	ND(0.17)	ND(0.17)	ND(0.22)	ND(0.22)	ND(0.17)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.24)	ND(0.24)	ND(0.19)	ND(0.19)	ND(0.24)	ND(0.24)	ND(0.19)
2022 Construction NMED SSL		15,060	NA	NA	75,300	NA	239.7	172.9
2022 Residential NMED SSL		3,477	NA	NA	17,380	NA	1.531	1.117

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NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Benzo(b) fluoranthene (mg/kg)	Benzo(ghi) perylene (mg/kg)	Benzo(k) fluoranthene (mg/kg)	Benzoic Acid (mg/kg)	Benzyl Alcohol (mg/kg)	Bis(2chloro ethoxy)methane (mg/kg)	Bis(2-chloro ethyl)ether (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.97)	ND(0.39)	ND(0.24)	ND(0.29)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.2)	ND(0.24)	ND(0.2)	ND(0.98)	ND(0.39)	ND(0.24)	ND(0.29)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.96)	ND(0.38)	ND(0.24)	ND(0.29)
FD-BH-12 (10-11 ft)	10/21/22	**ND(2)***	ND(2.4)	ND(2)	ND(9.8)	ND(3.9)	ND(2.4)	*ND(2.9)**
FD-BH-4 (20-21 ft)	10/19/22	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.99)	ND(0.4)	ND(0.25)	ND(0.3)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.99)	ND(0.4)	ND(0.25)	ND(0.3)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.99)	ND(0.4)	ND(0.25)	ND(0.3)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.2)	ND(0.24)	ND(0.2)	ND(0.98)	ND(0.39)	ND(0.24)	ND(0.29)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.97)	ND(0.39)	ND(0.24)	ND(0.29)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.98)	ND(0.39)	ND(0.25)	ND(0.29)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.18)	ND(0.23)	ND(0.18)	ND(0.91)	ND(0.36)	ND(0.23)	ND(0.27)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.29)	ND(0.36)	ND(0.29)	ND(1.4)	ND(0.57)	ND(0.36)	ND(0.43)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.17)	ND(0.21)	ND(0.17)	ND(0.86)	ND(0.34)	ND(0.21)	ND(0.26)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.98)	ND(0.39)	ND(0.25)	ND(0.3)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.18)	ND(0.22)	ND(0.18)	ND(0.9)	ND(0.36)	ND(0.22)	ND(0.27)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.17)	ND(0.22)	ND(0.17)	ND(0.87)	ND(0.35)	ND(0.22)	ND(0.26)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.95)	ND(0.38)	ND(0.24)	ND(0.28)
2022 Construction NMED SSL		239.7	NA	2,313	NA	NA	NA	1.95
2022 Residential NMED SSL		1.531	NA	15.31	NA	NA	NA	3.114

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SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Bis(2-chloro-isopropyl)ether	Bis(2-ethylhexyl) phthalate (mg/kg)	Benzyl Butyl Phthalate (mg/kg)	Carbazole (mg/kg)	Chrysene (mg/kg)	Dibenz(a,h) anthracene (mg/kg)	Dibenzofuran (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.29)	ND(0.48)	ND(0.24)	ND(0.19)	ND(0.19)	**ND(0.19)***	ND(0.24)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.29)	ND(0.49)	ND(0.24)	ND(0.2)	ND(0.2)	**ND(0.2)***	ND(0.24)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.29)	ND(0.48)	ND(0.24)	ND(0.19)	ND(0.19)	**ND(0.19)***	ND(0.24)
FD-BH-12 (10-11 ft)	10/21/22	ND(2.9)	ND(4.9)	ND(2.4)	ND(2)	ND(2)	**ND(2)***	ND(2.4)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.3)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	**ND(0.2)***	ND(0.25)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.3)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	**ND(0.2)***	ND(0.25)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.3)	ND(0.5)	ND(0.25)	ND(0.2)	ND(0.2)	**ND(0.2)***	ND(0.25)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.29)	ND(0.49)	ND(0.24)	ND(0.2)	ND(0.2)	**ND(0.2)***	ND(0.24)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.29)	ND(0.48)	ND(0.24)	ND(0.19)	ND(0.19)	**ND(0.19)***	ND(0.24)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.29)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	**ND(0.2)***	ND(0.25)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.27)	ND(0.45)	ND(0.23)	ND(0.18)	ND(0.18)	**ND(0.18)***	ND(0.23)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.43)	ND(0.72)	ND(0.36)	ND(0.29)	ND(0.29)	**ND(0.29)***	ND(0.36)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.26)	ND(0.43)	ND(0.21)	ND(0.17)	ND(0.17)	**ND(0.17)***	ND(0.21)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.3)	ND(0.49)	ND(0.25)	ND(0.2)	ND(0.2)	**ND(0.2)***	ND(0.25)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.27)	ND(0.45)	ND(0.22)	ND(0.18)	ND(0.18)	**ND(0.18)***	ND(0.22)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.26)	ND(0.44)	ND(0.22)	ND(0.17)	ND(0.17)	**ND(0.17)***	ND(0.22)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.28)	ND(0.47)	ND(0.24)	ND(0.19)	ND(0.19)	**ND(0.19)***	ND(0.24)
2022 Construction NMED SSL		NA	13,390	NA	NA	23,130	23.96	NA
2022 Residential NMED SSL		NA	380.4	NA	NA	153.1	0.1531	NA

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SVOC - Semi-volatile organic compound
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Notes:
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TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Diethylphthalate (mg/kg)	Dimethyl Phthalate (mg/kg)	Di-n-butyl-phthalate (mg/kg)	Di-n-octyl-phthalate (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Hexachloro Benzene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(2.9)	ND(0.39)	ND(0.97)	ND(0.39)	ND(0.19)	ND(0.39)	ND(0.24)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(2.9)	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.24)
FD-BH-11 (18-19 ft)	10/21/22	ND(2.9)	ND(0.38)	ND(0.96)	ND(0.38)	ND(0.19)	ND(0.38)	ND(0.24)
FD-BH-12 (10-11 ft)	10/21/22	ND(29)	ND(3.9)	ND(9.8)	ND(3.9)	ND(2)	ND(3.9)	ND(2.4)
FD-BH-4 (20-21 ft)	10/19/22	ND(3)	ND(0.4)	ND(0.99)	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.25)
FD-BH-4 (24-25 ft)	10/19/22	ND(3)	ND(0.4)	ND(0.99)	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.25)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(3)	ND(0.4)	ND(0.99)	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.25)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(2.9)	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.24)
FD-BH-6 (15-16 ft)	10/20/22	ND(2.9)	ND(0.39)	ND(0.97)	ND(0.39)	ND(0.19)	ND(0.39)	ND(0.24)
FD-BH-6 (18-19 ft)	10/20/22	ND(2.9)	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.25)
FD-BH-7 (16-17 ft)	10/20/22	ND(2.7)	ND(0.36)	ND(0.91)	ND(0.36)	ND(0.18)	ND(0.36)	ND(0.23)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(4.3)	ND(0.57)	ND(1.4)	ND(0.57)	ND(0.29)	ND(0.57)	ND(0.36)
FD-BH-8 (9-10 ft)	10/20/22	ND(2.6)	ND(0.34)	ND(0.86)	ND(0.34)	ND(0.17)	ND(0.34)	ND(0.21)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(3)	ND(0.39)	ND(0.98)	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.25)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(2.7)	ND(0.36)	ND(0.9)	ND(0.36)	ND(0.18)	ND(0.36)	ND(0.22)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(2.6)	ND(0.35)	ND(0.87)	ND(0.35)	ND(0.17)	ND(0.35)	ND(0.22)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(2.8)	ND(0.38)	ND(0.95)	ND(0.38)	ND(0.19)	ND(0.38)	ND(0.24)
2022 Construction NMED SSL		215,200	NA	26,910	NA	10,040	10,040	116.7
2022 Residential NMED SSL		49,310	NA	6,163	NA	2,318	2,318	3.328

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Notes:
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FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Hexachloro-butadiene (mg/kg)	Hexachlorocyclo-pentadiene (mg/kg)	Hexachloro-ethane (mg/kg)	Indeno(1,2,3-cd) pyrene (mg/kg)	Isophorone (mg/kg)	Naphthalene (mg/kg)	Nitrobenzene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(0.24)	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.39)	ND(0.24)	ND(0.39)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(0.24)	ND(0.2)	ND(0.24)	ND(0.2)	ND(0.39)	ND(0.24)	ND(0.39)
FD-BH-11 (18-19 ft)	10/21/22	ND(0.24)	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.38)	ND(0.24)	ND(0.38)
FD-BH-12 (10-11 ft)	10/21/22	ND(2.4)	ND(2)	ND(2.4)	**ND(2)***	ND(3.9)	ND(2.4)	ND(3.9)
FD-BH-4 (20-21 ft)	10/19/22	ND(0.25)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.4)
FD-BH-4 (24-25 ft)	10/19/22	ND(0.25)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.4)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(0.25)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.4)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(0.24)	ND(0.2)	ND(0.24)	ND(0.2)	ND(0.39)	ND(0.24)	ND(0.39)
FD-BH-6 (15-16 ft)	10/20/22	ND(0.24)	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.39)	ND(0.24)	ND(0.39)
FD-BH-6 (18-19 ft)	10/20/22	ND(0.25)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.39)	ND(0.25)	ND(0.39)
FD-BH-7 (16-17 ft)	10/20/22	ND(0.23)	ND(0.18)	ND(0.23)	ND(0.18)	ND(0.36)	ND(0.23)	ND(0.36)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(0.36)	ND(0.29)	ND(0.36)	ND(0.29)	ND(0.57)	ND(0.36)	ND(0.57)
FD-BH-8 (9-10 ft)	10/20/22	ND(0.21)	ND(0.17)	ND(0.21)	ND(0.17)	ND(0.34)	ND(0.21)	ND(0.34)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(0.25)	ND(0.2)	ND(0.25)	ND(0.2)	ND(0.39)	ND(0.25)	ND(0.39)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(0.22)	ND(0.18)	ND(0.22)	ND(0.18)	ND(0.36)	ND(0.22)	ND(0.36)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(0.22)	ND(0.17)	ND(0.22)	ND(0.17)	ND(0.35)	ND(0.22)	ND(0.35)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(0.24)	ND(0.19)	ND(0.24)	ND(0.19)	ND(0.38)	ND(0.24)	ND(0.38)
2022 Construction NMED SSL		2,395	867	4,671	239.7	198,300	632.9	1,353
2022 Residential NMED SSL		68.28	2.304	133.1	1.531	5,606	22.6	60.43

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Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
1. Bold text indicates results that exceed the NMED Residential SSL.
2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	N-Nitrosodi-methylamine (mg/kg)	N-Nitrosodin-propylamine (mg/kg)	N-Nitrosodi-phenylamine (mg/kg)	Pentachloro-phe-nol (mg/kg)	Phenanthrene (mg/kg)	Phenol (mg/kg)	Pyrene (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	**ND(0.39)***	ND(0.39) UJ	ND(0.19)	ND(0.39)	ND(0.24)	ND(0.39) UJ	ND(0.19) UJ
FD-BH-10 (5.2-6.2 ft)	10/20/22	**ND(0.39)***	ND(0.39) UJ	ND(0.2)	ND(0.39)	ND(0.24)	ND(0.39) UJ	ND(0.2) UJ
FD-BH-11 (18-19 ft)	10/21/22	**ND(0.38)***	ND(0.38) UJ	ND(0.19)	ND(0.38)	ND(0.24)	ND(0.38) UJ	ND(0.19) UJ
FD-BH-12 (10-11 ft)	10/21/22	***ND(3.9)****	ND(3.9) UJ	ND(2)	ND(3.9)	ND(2.4)	ND(3.9) UJ	ND(2) UJ
FD-BH-4 (20-21 ft)	10/19/22	**ND(0.4)***	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.4)	ND(0.2)
FD-BH-4 (24-25 ft)	10/19/22	**ND(0.4)***	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.4)	ND(0.2)
FD-BH-5 (12.5-13.5 ft)	10/19/22	**ND(0.4)***	ND(0.4)	ND(0.2)	ND(0.4)	ND(0.25)	ND(0.4)	ND(0.2)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	**ND(0.39)***	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.24)	ND(0.39)	ND(0.2)
FD-BH-6 (15-16 ft)	10/20/22	**ND(0.39)***	ND(0.39)	ND(0.19)	ND(0.39)	ND(0.24)	ND(0.39)	ND(0.19)
FD-BH-6 (18-19 ft)	10/20/22	**ND(0.39)***	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.25)	ND(0.39)	ND(0.2)
FD-BH-7 (16-17 ft)	10/20/22	**ND(0.36)***	ND(0.36)	ND(0.18)	ND(0.36)	ND(0.23)	ND(0.36)	ND(0.18)
FD-BH-8 (19-19.8 ft)	10/20/22	**ND(0.57)***	ND(0.57)	ND(0.29)	ND(0.57)	ND(0.36)	ND(0.57)	ND(0.29)
FD-BH-8 (9-10 ft)	10/20/22	**ND(0.34)***	ND(0.34)	ND(0.17)	ND(0.34)	ND(0.21)	ND(0.34)	ND(0.17)
FD-BH-9 (13.75-14.75 ft)	10/20/22	**ND(0.39)***	ND(0.39)	ND(0.2)	ND(0.39)	ND(0.25)	ND(0.39)	ND(0.2)
FD-BH-9 (6.5-7.5 ft)	10/20/22	**ND(0.36)***	ND(0.36)	ND(0.18)	ND(0.36)	ND(0.22)	ND(0.36)	ND(0.18)
FD-BH-9 (7.5-8.5 ft)	10/20/22	**ND(0.35)***	ND(0.35)	ND(0.17)	ND(0.35)	ND(0.22)	ND(0.35)	ND(0.17)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	**ND(0.38)***	ND(0.38)	ND(0.19)	ND(0.38)	ND(0.24)	ND(0.38)	ND(0.19)
2022 Construction NMED SSL		3.664	NA	37,860	346.2	8,072	77,380	7,530
2022 Residential NMED SSL		0.02337	NA	1,087	9.855	1,849	18,490	1,738

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Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
1. Bold text indicates results that exceed the NMED Residential SSL.
2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-2. SVOC ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Pyridine (mg/kg)
FD-BH-10 (19-20 ft)	10/21/22	ND(1.9)
FD-BH-10 (5.2-6.2 ft)	10/20/22	ND(2)
FD-BH-11 (18-19 ft)	10/21/22	ND(1.9)
FD-BH-12 (10-11 ft)	10/21/22	ND(20)
FD-BH-4 (20-21 ft)	10/19/22	ND(2)
FD-BH-4 (24-25 ft)	10/19/22	ND(2)
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(2)
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(2)
FD-BH-6 (15-16 ft)	10/20/22	ND(1.9)
FD-BH-6 (18-19 ft)	10/20/22	ND(2)
FD-BH-7 (16-17 ft)	10/20/22	ND(1.8)
FD-BH-8 (19-19.8 ft)	10/20/22	ND(2.9)
FD-BH-8 (9-10 ft)	10/20/22	ND(1.7)
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(2)
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(1.8)
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(1.7)
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(1.9)
2022 Construction NMED SSL		NA
2022 Residential NMED SSL		NA

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Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
SVOC - Semi-volatile organic compound
UJ - Estimated reporting limit
Notes:
1. Bold text indicates results that exceed the NMED Residential SSL.
2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-3. GENERAL CHEMISTRY ANALYTICAL RESULTS COMPARED TO NMED SSLS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Location ID	Date Sampled	Diesel Range Organics (mg/kg)	Gasoline Range Organics (mg/kg)	Oil Range Organics (mg/kg)	pH (Standard Units)
FD-BH-10 (19-20 ft)	10/21/22	ND(11)	10	ND(36)	9.36
FD-BH-10 (5.2-6.2 ft)	10/20/22	21	***740 J+***	ND(43)	9.42
FD-BH-11 (18-19 ft)	10/21/22	ND(14)	47	ND(45)	9.14
FD-BH-12 (10-11 ft)	10/21/22	ND(14)	ND(3.1)	ND(48)	8.86
FD-BH-4 (20-21 ft)	10/19/22	ND(12)	6.2	ND(40)	8.87
FD-BH-4 (24-25 ft)	10/19/22	ND(14)	ND(3.1)	ND(47)	9.58
FD-BH-5 (12.5-13.5 ft)	10/19/22	ND(13)	ND(3.3)	ND(44)	8.3
FD-BH-5 (12.5-13.5 ft) Dup	10/19/22	ND(14)	ND(3.2)	ND(47)	8.29
FD-BH-6 (15-16 ft)	10/20/22	ND(13)	ND(2.9)	ND(44)	8.32
FD-BH-6 (18-19 ft)	10/20/22	ND(15)	ND(2.9)	ND(50)	8.59
FD-BH-7 (16-17 ft)	10/20/22	ND(15)	ND(3)	ND(50)	8.57
FD-BH-8 (19-19.8 ft)	10/20/22	ND(13)	ND(2.4)	ND(45)	9.14
FD-BH-8 (9-10 ft)	10/20/22	ND(13)	53 J+	ND(43)	8.65
FD-BH-9 (13.75-14.75 ft)	10/20/22	ND(15)	ND(2.7)	ND(50)	9.09
FD-BH-9 (6.5-7.5 ft)	10/20/22	ND(14)	10 J+	ND(46)	8.8
FD-BH-9 (7.5-8.5 ft)	10/20/22	ND(15)	19 J+	ND(48)	8.68
FD-BH-9 (7.5-8.5 ft) Dup	10/20/22	ND(13)	4.4 J	ND(44)	8.79
2022 Construction NMED SSL		3,000	500	5,000	NA
2022 Residential NMED SSL		1,000	100	1,000	NA

Dup - Duplicate sample
ft - Feet below ground surface
ID - identification
J - Estimated concentration
J+ - Estimated concentration, possibly biased high
mg/kg - Milligrams per kilogram
NA - Not applicable
ND - Non-detect at the reporting limit
NMED - New Mexico Environment Department
SSL - Soil Screening Level
Notes:
1. Bold text indicates results that exceed the NMED Residential SSL.
2. Italicized text indicates results that exceed the NMED Construction Worker SSL.
3. * indicates a data quality exception in which the reporting limit of a non-detect result exceeds the NMED SSL.

TABLE 3-4. GEOTECHNICAL RESULTS
FRENCH DRAIN SOIL SAMPLING INVESTIGATION REPORT
WESTERN REFINING SOUTHWEST LLC, D/B/A MARATHON GALLUP REFINERY, GALLUP, NEW MEXICO

Sample ID	Moisture Content				Dry Bulk Density (g/cm^3)	Wet Bulk Density (g/cm^3)	Calculated Porosity (%)
	As Received		Remolded				
	Gravimetric (%, g/g)	Volumetric (%, cm^3/cm^3)	Gravimetric (%, g/g)	Volumetric (%, cm^3/cm^3)			
FD-BH-4 (18.5 - 18.75 ft bgs)	17.8	31.4	--	--	1.76	2.08	35.9
FD-BH-5 (12.25 - 12.5 ft bgs)	12.7	17.9	--	--	1.41	1.59	48.6
FD-BH-6 (15.75 - 16 ft bgs)	22.4	31.6	--	--	1.41	1.73	48.7
FD-BH-6 (18.5 - 18.75 ft bgs)	20.8	34.7	--	--	1.67	2.01	39.4
FD-BH-7 (16.5 - 16.75 ft bgs)	16.9	29.2	--	--	1.72	2.01	37.4
FD-BH-8 (10 - 10.25 ft bgs)	24.4	40.2	--	--	1.64	2.05	40.2
FD-BH-8 (19 - 19.25 ft bgs)	26.0	41.9	--	--	1.61	2.03	41.3
FD-BH-9 (7.5 - 7.75 ft bgs)	16.4	28.6	--	--	1.74	2.03	36.6
FD-BH-9 (7.75 - 8 ft bgs)	16.3	28.2	--	--	1.73	2.01	37.1
FD-BH-9 (13.5 - 13.75 ft bgs)	26.1	41.7	--	--	1.60	2.02	41.8
FD-BH-10 (8.25 - 8.5 ft bgs)	27.7	41.5	--	--	1.50	1.91	45.6
FD-BH-10 (19.25 - 19.5 ft bgs)	20.1	34.8	--	--	1.73	2.08	37.0
FD-BH-11 (15.5 - 15.75 ft bgs)	15.4	23.2	--	--	1.51	1.74	45.1
FD-BH-12 (9.25 - 9.5 ft bgs)	16.9	29.9	--	--	1.77	2.07	35.6

-- - This sample was not remolded
% - Percent
cm^3 - Cubic centimeters
Dup - Duplicate sample
FD - French Drain
ft bgs - Feet below ground surface
g - Gram or grams
ID - Identification

Appendix A – Boring Logs

Tribudro

Lithology Log Sheet 1 of 1

LOCID

Project Name: French Drain	Project Number: 697-104-001	Borehole ID: FD-BH-4	
Drilling Company: Cascade	Driller: Richard Pawlowski	Ground Elevation:	Total Drilled Depth: 25 ft bgs
Drilling Equipment: 7720	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 10/19/2022 09:05
Date/Time Stopped: 10/19/2022 13:30			
Type of Sampling Device: 5' Continuous Core		Water Level (bgs): 20.5 ft bgs	Final: 25'
PID/FID (make, model, serial no.): PID Honeywell MiniRAE Lite (590-909154)		Geologist: Kara Hoppes	Checked by/Date
Location Description (include sketch in field logbook)		Weather Conditions: clear, cool, sunny	

Depth	Interval	Recovery	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft bgs)	PID (ppm)
0	0-5'		2.5' recovery	0'	0
	0-1'		brown clayey-sand; soft, saturated @ 0.5', non-cohesive; no odor		
1	1-1.25'		brown sand and clay; mildly cohesive; saturated, no odor, soft, non-plastic		
	1.25-2.5'		damp loose saturated sand (M-well sorted) grading down into brown silt with light gray clay lenses about 1 cm in diameter, non-plastic, moderately cohesive		
2				2'	0
3					
4				4'	0
5	5-10'		dry, clayey-silt; reddish-brown with whitish-green 0.5 cm diameter clay lenses; moderately soft, cohesive, non-plastic		
6				6'	0
7					
8				8'	0
9					
10	10-15'			10'	0
	10-12.5'		reddish brown to light gray/green claeyey-silt; firm, dry, cohesive, brittle; no odor		
11					
12				12'	0
	12.5-15'		SAA but up to 20% VF sand; firmness increases to hard; no odor		
13					
14				14'	0
15	15-19'				
	15-16'		SAA but moderately firm and somewhat plastic		
16				16'	1.7
	16-17'		light reddish-brown to whitish-gray-green clayey-sand, moderately firm to loose/soft; sand VF, well sorted; dry cohesive; no odor		
17	17-19'		reddish-brown, dry, hard, cohesive silty-clay grading down into clay at base; mildly plastic at top to plastic (moderately) at base; no odor		
18				18'	1.8
19	19-20'		No recovery		
20	20-25'		(no viable geotech samples)	20'	16.2
	20-20.5'		reddish-brown, moderately firm, damp, clay; moderate plasticity, cohesive		
	20.5-21.5'		saturated, light gray to reddish-brown gravelly sandy, clay; soft, cohesive, moderately plastic		
21					
	21.5-22'		same as 20-20.5' [reddish-brown, moderately firm, damp, clay; moderate plasticity, cohesive]		
22				22'	2.2
	22-24.5'		reddish-brown dry, brittle clay, crumbles; rare light green clay lamination		
23					
24				24'	0.0
	24.5-25'		reddish-brown weathered clay shale; dry, hard. TD=25'		
25				25'	0.0

Trihydro CORPORATION

Lithology Log

Sheet 1 of 1

LOCID

Project Name	Project Number	Borehole ID
French Drain	697-104-001	FD-BH-5

Drilling Company	Driller	Ground Elevation	Total Drilled Depth
Cascade	Richard Pawlowski		13.5 ft bgs

Drilling Equipment	Drilling Method	Borehole Diameter	Date/Time Drilling Started	Date/Time Stopped
7720	Direct Push	2 inch	10/19/2022 14:55	10/19/2022 16:00

Type of Sampling Device	Water Level (bgs)	Final
5' Continuous Core	--- ft bgs	

PID/FID (make, model, serial no.)	Geologist	Checked by/Date
PID Honeywell MiniRAE Lite (590-909154)	K. Hoppes	

Location Description (include sketch in field logbook)	Weather Conditions
	clear skies, sunny, 70°

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft-bgs)	PID (ppm)
0				0-5' 2.5' recovery; no odor	0'	0
				0-0.25' silty-clay, moderately cohesive, soft, dry, moderate placticity; reddish-brown		
1				0.25-1' reddish-brown silty-clayey-sand, low cohesiveness, soft, dry; sand VF-F well sorted		
				1-2.5' reddish-brown clayey-silt (damp, soft, moderatly cohesive) at top grading to silty-clay (somewhat firm, moist, highly plastic) at base		
2					2'	0
3						
4						
5				5-10' no odor		
				5-6.5' reddish-brown damp silty-clay; moderately plastic, firm; no odor		
6					6'	0
				6.5-7.5' light reddish-brown clayey-silt; dry, non-plastic; crumbles when pushed		
7						
				7.5-10' light reddish-brown silt (crumbly) at top grading to light gray clayey-sand (partially consolidated); dry		
8					8'	0
9						
10					10'	0
				10-13.5'		
				10-13.25' Same as base of 7.5-10' section; breaks in wafers and wafers easily broken with fingers. TD=13.5'		
11						
12					12'	0
13						
					13.5'	0
14						

Trihydro CORPORATION

Lithology Log Sheet 1 of 1 LOCID

Project Name: French Drain	Project Number: 697-104-001		Borehole ID: FD-BH-6
Drilling Company: Cascade	Driller: Richard Pawlowski	Ground Elevation:	Total Drilled Depth: 19 ft bgs
Drilling Equipment: Geoprobe 7720	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 10/20/2022 10:25
Date/Time Stopped: 10/20/2022 11:10			
Type of Sampling Device: 5' Continuous Core		Water Level (bgs): --- ft bgs	Final
PID/FID (make, model, serial no.): PID Honeywell MiniRAE Lite (590-909154)		Geologist: K. Hoppes	Checked by/Date
Location Description (include sketch in field logbook)		Weather Conditions: sunny, clear, warm	

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft bgs)	PID (ppm)
0				0-5' 2' recovery, no odor 0-1' brown, damp, sandy-gravelly-silty clay; soft mildly cohesive, mildly plastic	0'	0.8
1				1-1.5' brown, damp sandy-silty clay, soft, mildly cohesive, somewhat plastic		
				1.5-2' brown, cohesive, plastic silty-clay; moist	2'	0.9
2						
3						
4						
5				5-10' no odor 5-9.25' brown, cohesive, non-plastic, mostly dry gravelly-sandy clay, moderately firm, sand content decreasing from 30% - 5% with depth		
6					6'	1.8
7						
8					8'	0.5
9						
				9.25-10' brown, firm, cohesive, moderately plastic silty-clay with rare gravel and sand; vegetation matter occasional		
10					10'	2.0
				10-15' no odor 10-11.5' brown, mostly cohesive, damp; gravelly-sandy-clay somewhat plastic		
11						
				11.5-12' drilled through clean sand and Ss layer; F-M, well sorted		
12				12-15' brown, moderately firm, plastic, highly cohesive clay; rare sand	12'	1.5
13						
14					14'	1.6
15				15-19' refusal 15-16.5' SAA		
16					16'	2.2
				16.5-17' same as 11.5-12' [drilled through clean sand and Ss layer; F-M, well sorted]		
17				17-18.5' brown, dry, somewhat cohesive, crumbles when pressed, non-plastic clayey-silt with occasional light green clay lenses		
18					18'	1.7
				18.5-19' somewhat consolidated light brown silty-clay; hard, brittle, dry. TD=19'		
19						

Trihydro CORPORATION

Lithology Log Sheet 1 of 1

LOCID

Project Name	Project Number	Borehole ID
French Drain	697-104-001	FD-BH-7

Drilling Company	Driller	Ground Elevation	Total Drilled Depth
Cascade	Richard Pawlowski		17 ft bgs

Drilling Equipment	Drilling Method	Borehole Diameter	Date/Time Drilling Started	Date/Time Stopped
Geoprobe 7720	Direct Push	2 inch	10/20/2022 09:15	10/20/2022 10:05

Type of Sampling Device	Water Level (bgs)	Final
5' Continuous Core	--- ft bgs	

PID/FID (make, model, serial no.)	Geologist	Checked by/Date
Honeywell MiniRAE Lite (590-909154)	K. Hoppes	

Location Description (include sketch in field logbook)	Weather Conditions
	clear skies, sunny, cool

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft-bgs)	PID (ppm)
0				0-5' 3' of recovery, no odor 0-1' brown damp sandy-silty-clay with occasional gravel and vegetation parts, soft, mostly cohesive, mildly plastic, no odor	0'	0.3
1				1-3' brown silty-clay, damp, highly plastic, no odor at top grading down to moist clay (otherwise same) by 2.5'; lightly cohesive and medium soft		
2					2'	0.8
3						
4						
5				5-10' no odor 5-6' cohesive, brown silty-sand-clay, firm, non-plastic, mostly dry grading to clay, moist, highly plastic at base		
6				6-6.5' brown, cohesive sandy-gravelly clay; damp, plastic	6'	0.5
7				6.5-7' brown sandy-silty-clay, damp, cohesive, moderate firmness, sand up to C 7-10' brown clay; cohesive, plastic; firm at top to very firm at base		
8					8'	0.4
9						
10				10-15' no odor 10-10.25 SAA 10.25-14' dry, crumbly when pushed, light brown, clayey-silt with occasional whitish-grayish clay loam and lenses, non-plastic, mildly cohesive	10'	0.8
11						
12					12'	0.5
13						
14				14-15' brown, dry, cohesive, hard clay; brittle	14'	0.8
15				15-17' refusal 15-16' same as 10.25-14' [dry, crumbly when pushed, light brown, clayey-silt with occasional whitish-grayish clay laminal lenses, non-plastic, mildly cohesive]		
16				16-17' brown, dry, cohesive, brittle silty-clay; rare light green clay lenses. TD=17'	16'	1.1
17					17'	1.1

Trihydro Corporation

Lithology Log Sheet 1 of 1

LOCID

Project Name French Drain	Project Number 697-104-001		Borehole ID FD-BH-8
Drilling Company Cascade	Driller Richard Pawlowski and Bianca	Ground Elevation	Total Drilled Depth __ ft bgs
Drilling Equipment Geoprobe 7720	Drilling Method Direct Push	Borehole Diameter 2 inch	Date/Time Drilling Started 10/20/2022 14:15
			Date/Time Stopped 10/20/2022 15:20
Type of Sampling Device 5' Continuous Core		Water Level (bgs) --- ft bgs	Final 19.8
PID/FID (make, model, serial no.) PID Honeywell MiniRAE Lite (590-909154)		Geologist K. Hoppes	Checked by/Date
Location Description (include sketch in field logbook)		Weather Conditions warm, breezy, sunny, clear	

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft-bgs)	PID (ppm)
0				0-5' 2' recovery 0-2' brown, damp, soft sandy-silty-clay; non-plastic, mildly cohesive to non-cohesive, no odor; loamy with regular fragmentations	0'	0.8
1						
2					2'	1.1
3						
4						
5				5-10' 5-6' brown sandy-gravelly-silty-clay; moderately cohesive and plastic, damp		
6				6-6.5' brown, clayey-silty sand, mildly cohesive, soft	6'	1.9
7				6.5-8.5' brown, moderately firm silty-clay, damp, cohesive; moderately plastic		
8					8'	2.3
9				8.5-10' moist brown, odor which becomes strong HC odor by 9.5'; silty-clay with occasional sand; highly plastic and cohesive; moderately soft; some gray HC starting from 9.5-10'		
10					10'	374.4
11				10-15' 10-11' brown, moderately firm clay with trace sand up to VF; highly plastic and cohesive; HC odor faint from 10-10.25' otherwise no odor; damp		
12				12-15' brown, stiff/hard, highly cohesive and plastic clay	12'	3.1
13						
14					14'	1.4
15				15-19.8' refusal brown, very hard clay; highly plastic and cohesive; no odor. TD=19.8'		
16					16'	7.2
17						
18					18'	5.1
19					18.8'	4.3
20					19.8'	4.3

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Lithology Log Sheet 1 of 1

LOCID

Project Name	Project Number	Borehole ID
French Drain	697-104-001	FD-BH-9

Drilling Company	Driller	Ground Elevation	Total Drilled Depth
Cascade	Richard Pawlowski		14.75 ft bgs

Drilling Equipment	Drilling Method	Borehole Diameter	Date/Time Drilling Started	Date/Time Stopped
Geoprobe 7720	Direct Push	2 inch	10/20/2022 12:38	10/20/2022

Type of Sampling Device	Water Level (bgs)	Final
5' Continuous Core	7.5 ft bgs	

PID/FID (make, model, serial no.)	Geologist	Checked by/Date
PID Honeywell MiniRAE Lite (590-909154)	K. Hoppes	

Location Description (include sketch in field logbook)	Weather Conditions
	sunny, clear, warm

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft-bgs)	PID (ppm)
0				0-5' 4' recovery, no odor due to compression → since disturbed, no geotech sample possible	0'	1.6
				0-3' brown damp, gravelly-sandy-clay; cohesive; sand up to M, poorly sorted; moderate stiffness		
1						
2					2'	2.0
3				3-4' brown, very moist, soft, very cohesive and plastic silty-clay; some vegetation matter		
4					4'	1.5
				4-5' brown, hard silty-sandy clay; damp, very cohesive and plastic		
5						
				5-10' saturated 7.5-8.5' with slight odor and occasional dark gray HC staining 5-10' brown silty-clay and clay; soft in saturated zone otherwise moderately firm; highly plastic and cohesive		
6					6'	4.1
					6.5'	51.6
7						
					7.5'	51.6
8					8'	71.5
9						
10					10'	4.7
				10-14.75' 10-14.25' brown, damp, hard/stiff clay; highly plastic and cohesive		
11						
12					12'	1.8
13						
					13.75	1.9
14					14'	1.9
				14.25-14.75' ← refusal when hit, chert rock we couldn't get past gravelly SAA. TD=14.75'		
					14.75	1.9
15						

Trihydro Corporation

Lithology Log

Sheet 1 of 1

LOCID

Project Name: French Drain	Project Number: 697-104-001		Borehole ID: FD-BH-10
Drilling Company: Cascade	Driller: Richard Pawlowski and Bianca	Ground Elevation:	Total Drilled Depth: 20 ft bgs
Drilling Equipment: Geoprobe 7720	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 10/20/2022 15:50
			Date/Time Stopped: 10/21/2022 08:50
Type of Sampling Device: 5' Continuous Core		Water Level (bgs): 6.2 ft bgs	Final
PID/FID (make, model, serial no.): PID Honeywell MiniRAE Lite (590-909154)		Geologist: K. Hoppes	Checked by/Date
Location Description (include sketch in field logbook)		Weather Conditions: warm, slight breese, sunny	

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft-bgs)	PID (ppm)
0				0-5' 2.5' recovery	0'	2.3
				0-1' brown, loose, gravelly-sand (F-VC, poorly-sorted); no odor, damp		
1				1-2' brown, soft, damp sandy (VF well-sorted) clay grading to silty-clay at base; highly plastic and cohesive; no odor		
2					2'	7.2
				2-2.3' sandstone		
				2.3-2.5' strong HC odor, moist, mildly cohesive, silty-sand; sand VF-VC, poorly-sorted; some light gray HC staining	2.3'	686.4
					2.5'	686.4
3						not eough volume for sample but wanted to screen due to odor
4					4'	
5				5-10' 4' recovery due to compression; very strong HC odor throughout; saturation at 6.2'	5.2'	432.6
				5-7' SAA but clayey/gravelly and saturated at 6.2'		
6					6.2'	432.6
7				7-7.5' mildly cohesive, brown, saturated clayey-sand; sand VF-M, moderately sorted; soft		
				7.5-10' moist-damp silty-clay, brown, very cohesive and plastic; medium stiffness at top to firm at base		
8					8'	4.8
				PAUSE AT 16:20 FOR DAY RESUME 10/21/22 07:57		
9						
10					10'	5.6
				10-15'		
				10-12' brown, highly plastic and cohesive, firm clay with rare dark gray HC staining and HC odor		
11						
12					12'	14.3
				12-15' SAA but no staining		
13						
14					14'	168.8
15				15-20' refusal		
				HC odor throughout; brown, moderately stiff, highly cohesive and plastic; clay with rare 3" intervals that contain gravel/sand;		
16				very stiff at base. TD=20'	16'	367.5
17						
18					18'	437.2
19						
20					20'	150.4

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Lithology Log Sheet 1 of 1

LOCID

Project Name: French Drain	Project Number: 697-104-001		Borehole ID: FD-BH-11
Drilling Company: Cascade	Driller: Richard Pawlowski and Bianca	Ground Elevation:	Total Drilled Depth: 19 ft bgs
Drilling Equipment: Geoprobe 7720	Drilling Method: Direct Push	Borehole Diameter: 2 inch	Date/Time Drilling Started: 10/21/2022 10:35
Date/Time Stopped: 10/21/2022 11:20			
Type of Sampling Device: 5' Continuous Core		Water Level (bgs): --- ft bgs	Final
PID/FID (make, model, serial no.): PID Honeywell MiniRAE Lite (590-909154)		Geologist: K. Hoppes	Checked by/Date
Location Description (include sketch in field logbook)		Weather Conditions: cool, slightly breezy, sunny	

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft-bgl)	PID (ppm)
0				0-5' 3.5' recovery; no odor 0-2' sandy-clay, brown, damp, mildly cohesive somewhat plastic; sand VF-F, well sorted	0'	1.2
2				2-2.5' silty-clay, brown, damp, cohesive, soft, moderate plasticity 2.5-3.5' brown, damp, soft, moderately cohesive clayey-silty-sand (VF, well-sorted; roots throughout)	2'	1.2
5				5-10' 5-5.5' SAA 5.5-8' damp, loose sand (F-C, poorly-sorted) grading down to silty gravel and sand (dry) at base	6'	4.6
8				8-10' tan, partially consolidated (but easily broken into wafers) silty-sand (VF-F, well sorted; occasional roots, dry)	8'	4.8
10				10-15' no odor 10-10.2' SAA but sandy-silt 10.2-12.5' light tan, dry, silty-sand (VF-F, well sorted); easily crumbles but partially consolidated-looking (wafered) before pressure applied	10'	4.8
12				12.5-13.5' slightly more cohesive than above; brown clayey-sand (VF-F, well-sorted); wafers	12'	8.0
13				13.5-14' brown clay, moderately firm, somewhat plastic cohesive, dry		
14				14-15' same as 10.2-12.5' [light tan, dry, silty-sand (VF-F, well sorted); easily crumbles but partially consolidated-looking (wafered) before pressure applied]	14'	7.9
15				15-19' refusal at gravel rock 15-16' SAA		
16				16-16.5' loose sand and gravel, tan, damp	16'	40.3
17				16.5-18' consistently graded material starting with brown, cohesive, plastic soft clay at top down to loose sand and gravel at base (whitish, VF-VC, poorly sorted)		
18				18-19' same as base of last interval but damp and HC odor [down to loose sand and gravel at base (whitish, VF-VC, poorly sorted)] TD=19'	18'	1388
19					19'	1388

Trihydro CORPORATION

Lithology Log

Sheet 1 of 1

LOCID

Project Name	Project Number	Borehole ID
French Drain	697-104-001	FD-BH-12

Drilling Company	Driller	Ground Elevation	Total Drilled Depth
Cascade	Richard Pawlowski and Bianca		14 ft bgs

Drilling Equipment	Drilling Method	Borehole Diameter	Date/Time Drilling Started	Date/Time Stopped
Geoprobe 7720	Direct Push	2 inch	10/21/2022 09:10	10/21/2022 10:21

Type of Sampling Device	Water Level (bgs)	Final
5' Continuous Core	GW NOT ENCOUNTERED	

PID/FID (make, model, serial no.)	Geologist	Checked by/Date
PID Honeywell MiniRAE Lite (590-909154)	K. Hoppes	

Location Description (include sketch in field logbook)	Weather Conditions
	cool, slightly breezy, sunny

Depth	Interval	Recovery	Blow Counts	Description (Include lithology, grain size, sorting, angularity, Munsell color name & notation, minerology, bedding, plasticity, density, consistency, etc., as applicable)	Screened Interval (ft-bgs)	PID (ppm)
0				0-5' 4' recovery, no odor, unconsolidated, not cohesive 0-2' brown sand clay grading down to sand at base; sand VF-M, moderate sorting; damp	0'	1.3
1						
2				2-4.5' brown gravelly-clayey sand; damp; sand F-VC poorly sorted	2'	3.2
3						
4					4'	3.3
				4.5-5' brown clayey-silty sand; sand SAA		
5				5-10' 5-7.2' brown saturated (perched water due to being at a low spot in dainage ditch), loose, soft, clayey-sand (VF-C, poorly sorted)		
6					6'	0.6
7						
				7.2-9.5' brown, clayey-gravelly-sand, VF-VC, poorly sorted; no odor, moderate firmenss, damp		
8					8'	18
9						
				9.5-10' brown, damp, firm sandy (FV-F, well sorted) -clay; no odor, cohesive, minorly plastic		
10					10'	8.2
				10-14' refusal; only recovered the top foot of material 10-10.5' SAA	10.5'	64
				10.5-11' Same as 7.2-9.5' [brown, clayey-gravelly-sand, VF-VC, poorly sorted; no odor, moderate firmenss, damp]		
11				TD=11'	11'	64

Appendix B – Laboratory Analytical Reports

Laboratory Report for

Trihydro Corporation

French Drain; Project # 697-104-001, 0001

November 3, 2022

DBS&A
Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company

DBS&A
Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company

November 3, 2022

Emily Conkling
Trihydro Corporation
1252 Commerce Drive
Laramie, WY 82070
(970) 712-4201

Re: DBS&A Laboratory Report for French Drain; Project # 697-104-001, 0001

Dear Emily Conkling:

Enclosed is the report for the French Drain; Project # 697-104-001, 000 sample testing. Please review this report and provide any comments as samples will be held for a maximum of 30 days. After 30 days samples will be returned or disposed of in an appropriate manner.

All testing results were evaluated subjectively for consistency and reasonableness, and the results appear to be reasonably representative of the material tested. However, DBS&A does not assume any responsibility for interpretations or analyses based on the data enclosed, nor can we guarantee that these data are fully representative of the undisturbed materials at the field site. We recommend that careful evaluation of these laboratory results be made for your particular application.

The testing utilized to generate the enclosed report employs methods that are standard for the industry. The results do not constitute a professional opinion by DBS&A, nor can the results affect any professional or expert opinions rendered with respect thereto by DBS&A. You have acknowledged that all the testing undertaken by us, and the report provided, constitutes mere test results using standardized methods, and cannot be used to disqualify DBS&A from rendering any professional or expert opinion, having waived any claim of conflict of interest by DBS&A.

We are pleased to provide this service and look forward to future laboratory testing on other projects. If you have any questions about the enclosed data, please do not hesitate to call.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.
SOIL TESTING & RESEARCH LABORATORY

Joleen Hines
Laboratory Manager

Summaries

Released to Imaging: 3/28/2023 4:52:11 PM

Received by OCD: 3/28/2023 4:44:58 PM

Summary of Tests Performed

Laboratory Sample Number	Initial Soil Properties[1]			Saturated Hydraulic Conductivity[2]			Moisture Characteristics[3]								Particle Size[4]			Specific Gravity[5]		Air Perm-eability	Atterberg Limits	Proctor Compaction
	G	VM	VD	CH	FH	FW	HC	PP	FP	DPP	RH	EP	WHC	K_{unsat}	DS	WS	H	F	C			
FD-BH-4 (18.5'-18.75')	X	X																				
FD-BH-5 (12.25'-12.5')	X	X																				
FD-BH-6 (15.75'-16')	X	X																				
FD-BH-6 (18.5'-18.75')	X	X																				
FD-BH-7 (16.5'-16.75')	X	X																				
FD-BH-8 (10'-10.25')	X	X																				
FD-BH-8 (19'-19.25')	X	X																				
FD-BH-9 (7.5'-7.75')	X	X																				
FD-BH-9 (7.75'-8')	X	X																				
FD-BH-9 (13.5'-13.75')	X	X																				
FD-BH-10 (8.25'-8.5')	X	X																				
FD-BH-10 (19.25'-19.5')	X	X																				
FD-BH-11 (15.5'-15.75')	X	X																				
FD-BH-12 (9.25'-9.5')	X	X																				

[1] G = Gravimetric Moisture Content, VM = Volume Measurement Method, VD = Volume Displacement Method

[2] CH = Constant Head Rigid Wall, FH = Falling Head Rigid Wall, FW = Falling Head Rising Tail Flexible Wall

[3] HC = Hanging Column, PP = Pressure Plate, FP = Filter Paper, DPP = Dew Point Potentiometer, RH = Relative Humidity Box, EP = Effective Porosity, WHC = Water Holding Capacity, Kunsat = Calculated Unsaturated Hydraulic Conductivity

[4] DS = Dry Sieve, WS = Wet Sieve, H = Hydrometer

[5] F = Fine (<4.75mm), C = Coarse (>4.75mm)

Notes

Sample Receipt:
Fourteen samples were received on October 25, 2022. Each approximately 1.5” diameter x 3” to 4” length core was packaged inside a plastic bottle or glass jar with a screw top lid sealed with tape. Most cores were wrapped in foil. The bottles and jar were packaged in a cooler with ice and packing material. All samples appear to have arrived in good order.

Sample Preparation and Testing Notes:
Each sample was subjected to initial properties analysis (initial density, moisture content, and calculated total porosity). Intact specimens were obtained by trimming the original cores or by gently advancing a ring into an intact portion of the sample. The volume was measured using a 3-D scanner or caliper if a ring was used. Porosity calculations are based on the use of an assumed specific gravity value of 2.75.

Released to Imaging: 3/28/2023 4:52:11 PM
Received by OCD: 3/28/2023 4:44:58 PM

Summary of Initial Moisture Content, Dry Bulk Density Wet Bulk Density and Calculated Porosity

Sample Number	Moisture Content				Dry Bulk Density (g/cm^3)	Wet Bulk Density (g/cm^3)	Calculated Porosity (%)
	As Received		Remolded				
	Gravimetric (%, g/g)	Volumetric (%, cm^3/cm^3)	Gravimetric (%, g/g)	Volumetric (%, cm^3/cm^3)			
FD-BH-4 (18.5'-18.75')	17.8	31.4	---	---	1.76	2.08	35.9
FD-BH-5 (12.25'-12.5')	12.7	17.9	---	---	1.41	1.59	48.6
FD-BH-6 (15.75'-16')	22.4	31.6	---	---	1.41	1.73	48.7
FD-BH-6 (18.5'-18.75')	20.8	34.7	---	---	1.67	2.01	39.4
FD-BH-7 (16.5'-16.75')	16.9	29.2	---	---	1.72	2.01	37.4
FD-BH-8 (10'-10.25')	24.4	40.2	---	---	1.64	2.05	40.2
FD-BH-8 (19'-19.25')	26.0	41.9	---	---	1.61	2.03	41.3
FD-BH-9 (7.5'-7.75')	16.4	28.6	---	---	1.74	2.03	36.6
FD-BH-9 (7.75'-8')	16.3	28.2	---	---	1.73	2.01	37.1
FD-BH-9 (13.5'-13.75')	26.1	41.7	---	---	1.60	2.02	41.8
FD-BH-10 (8.25'-8.5')	27.7	41.5	---	---	1.50	1.91	45.6
FD-BH-10 (19.25'-19.5')	20.1	34.8	---	---	1.73	2.08	37.0
FD-BH-11 (15.5'-15.75')	15.4	23.2	---	---	1.51	1.74	45.1
FD-BH-12 (9.25'-9.5')	16.9	29.9	---	---	1.77	2.07	35.6

--- = This sample was not remolded

Initial Properties

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-4 (18.5'-18.75')
Date/Time Sampled: 10/19/2022 1200
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	118.79	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.47	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	94.49	
Sample volume (cm^3)*:*	53.61	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	17.8
Volumetric Moisture Content (% vol)*:*	31.4
Dry bulk density (g/cm^3)*:*	1.76
Wet bulk density (g/cm^3)*:*	2.08
Calculated Porosity (% vol)*:*	35.9
Percent Saturation:	87.4

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-5 (12.25'-12.5')
Date/Time Sampled: 10/19/2022 1610
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	77.11	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.54	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	61.73	
Sample volume (cm^3)*:*	43.70	
Assumed particle density (g/cm^3)*:*	2.75	
Gravimetric Moisture Content (% g/g)*:*	12.7	
Volumetric Moisture Content (% vol)*:*	17.9	
Dry bulk density (g/cm^3)*:*	1.41	
Wet bulk density (g/cm^3)*:*	1.59	
Calculated Porosity (% vol)*:*	48.6	
Percent Saturation:	36.9	

Laboratory analysis by: O'Dowd
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-6 (15.75'-16')
Date/Time Sampled: 10/20/2022 1115
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	83.00	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.53	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	61.65	
Sample volume (cm^3)*:*	43.70	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	22.4
Volumetric Moisture Content (% vol)*:*	31.6
Dry bulk density (g/cm^3)*:*	1.41
Wet bulk density (g/cm^3)*:*	1.73
Calculated Porosity (% vol)*:*	48.7
Percent Saturation:	64.9

Laboratory analysis by: O'Dowd
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-6 (18.5'-18.75')
Date/Time Sampled: 10/20/2023 1116
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	51.26	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.45	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	36.26	
Sample volume (cm^3)*:*	21.78	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	20.8
Volumetric Moisture Content (% vol)*:*	34.7
Dry bulk density (g/cm^3)*:*	1.67
Wet bulk density (g/cm^3)*:*	2.01
Calculated Porosity (% vol)*:*	39.4
Percent Saturation:	87.9

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-7 (16.5'-16.75')
Date/Time Sampled: 10/20/2022 1010
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	88.21	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.52	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	69.00	
Sample volume (cm^3)*:*	40.06	
Assumed particle density (g/cm^3)*:*	2.75	
Gravimetric Moisture Content (% g/g)*:*	16.9	
Volumetric Moisture Content (% vol)*:*	29.2	
Dry bulk density (g/cm^3)*:*	1.72	
Wet bulk density (g/cm^3)*:*	2.01	
Calculated Porosity (% vol)*:*	37.4	
Percent Saturation:	78.1	

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-8 (10'-10.25')
Date/Time Sampled: 10/20/2022 1505
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	64.25	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.49	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	45.61	
Sample volume (cm^3)*:*	27.75	
Assumed particle density (g/cm^3)*:*	2.75	
Gravimetric Moisture Content (% g/g)*:*	24.4	
Volumetric Moisture Content (% vol)*:*	40.2	
Dry bulk density (g/cm^3)*:*	1.64	
Wet bulk density (g/cm^3)*:*	2.05	
Calculated Porosity (% vol)*:*	40.2	
Percent Saturation:	99.9	

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-8 (19'-19.25')
Date/Time Sampled: 10/20/2022 1534
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	64.68	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.49	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	45.40	
Sample volume (cm^3)*:*	28.14	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	26.0
Volumetric Moisture Content (% vol)*:*	41.9
Dry bulk density (g/cm^3)*:*	1.61
Wet bulk density (g/cm^3)*:*	2.03
Calculated Porosity (% vol)*:*	41.3
Percent Saturation:	101.4

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-9 (7.5'-7.75')
Date/Time Sampled: 10/20/2022 1432
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	47.51	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.53	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	34.35	
Sample volume (cm^3)*:*	19.72	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	16.4
Volumetric Moisture Content (% vol)*:*	28.6
Dry bulk density (g/cm^3)*:*	1.74
Wet bulk density (g/cm^3)*:*	2.03
Calculated Porosity (% vol)*:*	36.6
Percent Saturation:	77.9

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-9 (7.75'-8')
Date/Time Sampled: 10/20/2022 1433
Project Name: French Drain

	As Received	Remolded
Test Date:	2-Nov-22	---
Field weight of sample* (g)*:*	77.94	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.50	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	60.55	
Sample volume (cm^3)*:*	35.01	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	16.3
Volumetric Moisture Content (% vol)*:*	28.2
Dry bulk density (g/cm^3)*:*	1.73
Wet bulk density (g/cm^3)*:*	2.01
Calculated Porosity (% vol)*:*	37.1
Percent Saturation:	76.1

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-9 (13.5'-13.75')
Date/Time Sampled: 10/20/2024 1330
Project Name: French Drain

	As Received	Remolded
Test Date:	2-Nov-22	---
Field weight of sample* (g)*:*	60.44	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.51	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	41.99	
Sample volume (cm^3)*:*	26.25	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	26.1
Volumetric Moisture Content (% vol)*:*	41.7
Dry bulk density (g/cm^3)*:*	1.60
Wet bulk density (g/cm^3)*:*	2.02
Calculated Porosity (% vol)*:*	41.8
Percent Saturation:	99.7

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-10 (8.25'-8.5')
Date/Time Sampled: 10/20/2022 1620
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	90.92	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.43	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	65.37	
Sample volume (cm^3)*:*	43.70	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	27.7
Volumetric Moisture Content (% vol)*:*	41.5
Dry bulk density (g/cm^3)*:*	1.50
Wet bulk density (g/cm^3)*:*	1.91
Calculated Porosity (% vol)*:*	45.6
Percent Saturation:	90.9

Laboratory analysis by: O'Dowd
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-10 (19.25'-19.5')
Date/Time Sampled: 10/21/2024 850
Project Name: French Drain

	As Received	Remolded
Test Date:	2-Nov-22	---
Field weight of sample* (g)*:*	78.35	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.50	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	58.99	
Sample volume (cm^3)*:*	34.04	
Assumed particle density (g/cm^3)*:*	2.75	

Gravimetric Moisture Content (% g/g)*:*	20.1
Volumetric Moisture Content (% vol)*:*	34.8
Dry bulk density (g/cm^3)*:*	1.73
Wet bulk density (g/cm^3)*:*	2.08
Calculated Porosity (% vol)*:*	37.0
Percent Saturation:	94.2

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-11 (15.5'-15.75')
Date/Time Sampled: 10/21/2022 1120
Project Name: French Drain

	As Received	Remolded
Test Date:	1-Nov-22	---
Field weight of sample* (g)*:*	83.53	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.42	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	65.98	
Sample volume (cm^3)*:*	43.70	
Assumed particle density (g/cm^3)*:*	2.75	
Gravimetric Moisture Content (% g/g)*:*	15.4	
Volumetric Moisture Content (% vol)*:*	23.2	
Dry bulk density (g/cm^3)*:*	1.51	
Wet bulk density (g/cm^3)*:*	1.74	
Calculated Porosity (% vol)*:*	45.1	
Percent Saturation:	51.4	

Laboratory analysis by: O'Dowd
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Daniel B. Stephens & Associates, Inc.

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: Trihydro Corporation
Job Number: DB22.1365.00
Sample Number: FD-BH-12 (9.25'-9.5')
Date/Time Sampled: 10/21/2023 1010
Project Name: French Drain

	As Received	Remolded
Test Date:	2-Nov-22	---
Field weight of sample* (g)*:*	89.07	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	7.46	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	69.81	
Sample volume (cm^3)*:*	39.43	
Assumed particle density (g/cm^3)*:*	2.75	
Gravimetric Moisture Content (% g/g)*:*	16.9	
Volumetric Moisture Content (% vol)*:*	29.9	
Dry bulk density (g/cm^3)*:*	1.77	
Wet bulk density (g/cm^3)*:*	2.07	
Calculated Porosity (% vol)*:*	35.6	
Percent Saturation:	84.0	

Laboratory analysis by: C. Firkins
Data entered by: C. Firkins
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Laboratory Tests and Methods

Tests and Methods

Dry Bulk Density:	ASTM D7263
Moisture Content:	ASTM D7263, ASTM D2216
Calculated Porosity:	ASTM D7263

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 29, 2022

Emily Conkling

Marathon
92 Giant Crossing Rd
Gallup, NM 87301
TEL: (505) 722-3833
FAX:

RE: French Drain OrderNo.: 2210B61

Dear Emily Conkling:

Hall Environmental Analysis Laboratory received 24 sample(s) on 10/21/2022 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 10, 2022.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FB01-101922
Project: French Drain **Collection Date:** 10/19/2022 11:30:00 AM
Lab ID: 2210B61-001 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/24/2022 11:15:40 PM	71028
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/24/2022 11:15:40 PM	71028
Surr: DNOP	76.2	43.2-147		%Rec	1	10/24/2022 11:15:40 PM	71028
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/27/2022 4:00:51 AM	C92099
Surr: BFB	96.4	70-130		%Rec	1	10/27/2022 4:00:51 AM	C92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Acenaphthylene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Aniline	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Anthracene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Azobenzene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Benz(a)anthracene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
Benzo(a)pyrene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Benzo(b)fluoranthene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
Benzo(k)fluoranthene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Benzoic acid	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
Benzyl alcohol	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Butyl benzyl phthalate	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Carbazole	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
4-Chloroaniline	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2-Chloronaphthalene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
2-Chlorophenol	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Chrysene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Di-n-butyl phthalate	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Di-n-octyl phthalate	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Dibenzofuran	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
1,2-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
1,3-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB01-101922
Project: French Drain
Collection Date: 10/19/2022 11:30:00 AM
Lab ID: 2210B61-001 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
3,3´-Dichlorobenzidine	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Diethyl phthalate	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Dimethyl phthalate	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
2,4-Dichlorophenol	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2,4-Dimethylphenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
2,4-Dinitrophenol	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
2,4-Dinitrotoluene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2,6-Dinitrotoluene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Fluoranthene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Fluorene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Hexachlorobenzene	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
Hexachlorobutadiene	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
Hexachlorocyclopentadiene	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
Hexachloroethane	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Isophorone	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
1-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2-Methylphenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
3+4-Methylphenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
N-Nitrosodimethylamine	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Naphthalene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2-Nitroaniline	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
3-Nitroaniline	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
4-Nitroaniline	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
Nitrobenzene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2-Nitrophenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
4-Nitrophenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Pentachlorophenol	ND	40		µg/L	1	10/31/2022 11:53:13 AM	71071
Phenanthrene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Phenol	ND	20		µg/L	1	10/31/2022 11:53:13 AM	71071
Pyrene	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Pyridine	ND	40		µg/L	1	10/31/2022 11:53:13 AM	71071
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	10/31/2022 11:53:13 AM	71071
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FB01-101922
Project: French Drain **Collection Date:** 10/19/2022 11:30:00 AM
Lab ID: 2210B61-001 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/31/2022 11:53:13 AM	71071
Surr: 2-Fluorophenol	57.8	15-84.5		%Rec	1	10/31/2022 11:53:13 AM	71071
Surr: Phenol-d5	41.4	15-67		%Rec	1	10/31/2022 11:53:13 AM	71071
Surr: 2,4,6-Tribromophenol	74.3	15-108		%Rec	1	10/31/2022 11:53:13 AM	71071
Surr: Nitrobenzene-d5	68.2	16.8-112		%Rec	1	10/31/2022 11:53:13 AM	71071
Surr: 2-Fluorobiphenyl	67.3	15-101		%Rec	1	10/31/2022 11:53:13 AM	71071
Surr: 4-Terphenyl-d14	89.2	34.4-134		%Rec	1	10/31/2022 11:53:13 AM	71071
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
Benzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Toluene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Ethylbenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Naphthalene	ND	2.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
2-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Acetone	ND	10		µg/L	1	10/28/2022 4:11:10 PM	R92188
Bromobenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Bromodichloromethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Bromoform	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Bromomethane	ND	3.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
2-Butanone	ND	10		µg/L	1	10/28/2022 4:11:10 PM	R92188
Carbon disulfide	ND	10		µg/L	1	10/28/2022 4:11:10 PM	R92188
Carbon Tetrachloride	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Chlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Chloroethane	ND	2.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Chloroform	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Chloromethane	ND	3.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
2-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
4-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
cis-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Dibromochloromethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Dibromomethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FB01-101922
Project: French Drain **Collection Date:** 10/19/2022 11:30:00 AM
Lab ID: 2210B61-001 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,1-Dichloroethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,1-Dichloroethene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,3-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
2,2-Dichloropropane	ND	2.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,1-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Hexachlorobutadiene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
2-Hexanone	ND	10		µg/L	1	10/28/2022 4:11:10 PM	R92188
Isopropylbenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
4-Isopropyltoluene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
4-Methyl-2-pentanone	ND	10		µg/L	1	10/28/2022 4:11:10 PM	R92188
Methylene Chloride	ND	3.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
n-Butylbenzene	ND	3.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
n-Propylbenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
sec-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Styrene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
tert-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
trans-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Trichlorofluoromethane	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Vinyl chloride	ND	1.0		µg/L	1	10/28/2022 4:11:10 PM	R92188
Xylenes, Total	ND	1.5		µg/L	1	10/28/2022 4:11:10 PM	R92188
Surr: 1,2-Dichloroethane-d4	89.7	70-130		%Rec	1	10/28/2022 4:11:10 PM	R92188
Surr: 4-Bromofluorobenzene	95.7	70-130		%Rec	1	10/28/2022 4:11:10 PM	R92188
Surr: Dibromofluoromethane	106	70-130		%Rec	1	10/28/2022 4:11:10 PM	R92188
Surr: Toluene-d8	111	70-130		%Rec	1	10/28/2022 4:11:10 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-101922
Project: French Drain **Collection Date:** 10/19/2022 12:30:00 PM
Lab ID: 2210B61-002 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/24/2022 11:28:28 PM	71028
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/24/2022 11:28:28 PM	71028
Surr: DNOP	70.7	43.2-147		%Rec	1	10/24/2022 11:28:28 PM	71028
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/27/2022 5:11:28 AM	C92099
Surr: BFB	95.2	70-130		%Rec	1	10/27/2022 5:11:28 AM	C92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Acenaphthylene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Aniline	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Anthracene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Azobenzene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Benz(a)anthracene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
Benzo(a)pyrene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Benzo(b)fluoranthene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
Benzo(k)fluoranthene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Benzoic acid	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
Benzyl alcohol	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Butyl benzyl phthalate	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Carbazole	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
4-Chloroaniline	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2-Chloronaphthalene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
2-Chlorophenol	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Chrysene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Di-n-butyl phthalate	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Di-n-octyl phthalate	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Dibenzofuran	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
1,2-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
1,3-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
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J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB01-101922
Project: French Drain
Collection Date: 10/19/2022 12:30:00 PM
Lab ID: 2210B61-002 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
3,3´-Dichlorobenzidine	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Diethyl phthalate	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Dimethyl phthalate	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
2,4-Dichlorophenol	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2,4-Dimethylphenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
2,4-Dinitrophenol	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
2,4-Dinitrotoluene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2,6-Dinitrotoluene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Fluoranthene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Fluorene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Hexachlorobenzene	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
Hexachlorobutadiene	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
Hexachlorocyclopentadiene	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
Hexachloroethane	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Isophorone	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
1-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2-Methylphenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
3+4-Methylphenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
N-Nitrosodimethylamine	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Naphthalene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2-Nitroaniline	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
3-Nitroaniline	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
4-Nitroaniline	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
Nitrobenzene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2-Nitrophenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
4-Nitrophenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Pentachlorophenol	ND	40		µg/L	1	10/31/2022 12:34:33 PM	71071
Phenanthrene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Phenol	ND	20		µg/L	1	10/31/2022 12:34:33 PM	71071
Pyrene	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Pyridine	ND	40		µg/L	1	10/31/2022 12:34:33 PM	71071
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	10/31/2022 12:34:33 PM	71071
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-101922
Project: French Drain **Collection Date:** 10/19/2022 12:30:00 PM
Lab ID: 2210B61-002 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/31/2022 12:34:33 PM	71071
Surr: 2-Fluorophenol	48.1	15-84.5		%Rec	1	10/31/2022 12:34:33 PM	71071
Surr: Phenol-d5	34.9	15-67		%Rec	1	10/31/2022 12:34:33 PM	71071
Surr: 2,4,6-Tribromophenol	67.2	15-108		%Rec	1	10/31/2022 12:34:33 PM	71071
Surr: Nitrobenzene-d5	60.4	16.8-112		%Rec	1	10/31/2022 12:34:33 PM	71071
Surr: 2-Fluorobiphenyl	57.9	15-101		%Rec	1	10/31/2022 12:34:33 PM	71071
Surr: 4-Terphenyl-d14	97.6	34.4-134		%Rec	1	10/31/2022 12:34:33 PM	71071
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
Benzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Toluene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Ethylbenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Naphthalene	ND	2.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
2-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Acetone	ND	10		µg/L	1	10/28/2022 4:38:03 PM	R92188
Bromobenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Bromodichloromethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Bromoform	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Bromomethane	ND	3.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
2-Butanone	ND	10		µg/L	1	10/28/2022 4:38:03 PM	R92188
Carbon disulfide	ND	10		µg/L	1	10/28/2022 4:38:03 PM	R92188
Carbon Tetrachloride	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Chlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Chloroethane	ND	2.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Chloroform	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Chloromethane	ND	3.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
2-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
4-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
cis-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Dibromochloromethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Dibromomethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-101922
Project: French Drain **Collection Date:** 10/19/2022 12:30:00 PM
Lab ID: 2210B61-002 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,1-Dichloroethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,1-Dichloroethene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,3-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
2,2-Dichloropropane	ND	2.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,1-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Hexachlorobutadiene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
2-Hexanone	ND	10		µg/L	1	10/28/2022 4:38:03 PM	R92188
Isopropylbenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
4-Isopropyltoluene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
4-Methyl-2-pentanone	ND	10		µg/L	1	10/28/2022 4:38:03 PM	R92188
Methylene Chloride	ND	3.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
n-Butylbenzene	ND	3.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
n-Propylbenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
sec-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Styrene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
tert-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
trans-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Trichlorofluoromethane	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Vinyl chloride	ND	1.0		µg/L	1	10/28/2022 4:38:03 PM	R92188
Xylenes, Total	ND	1.5		µg/L	1	10/28/2022 4:38:03 PM	R92188
Surr: 1,2-Dichloroethane-d4	96.3	70-130		%Rec	1	10/28/2022 4:38:03 PM	R92188
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	10/28/2022 4:38:03 PM	R92188
Surr: Dibromofluoromethane	109	70-130		%Rec	1	10/28/2022 4:38:03 PM	R92188
Surr: Toluene-d8	107	70-130		%Rec	1	10/28/2022 4:38:03 PM	R92188

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-101922
Project: French Drain **Collection Date:** 10/19/2022
Lab ID: 2210B61-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 12:02:46 PM	71197
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 12:02:46 PM	71197
Surr: DNOP	95.2	21-129		%Rec	1	11/2/2022 12:02:46 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	10/26/2022 12:51:21 AM	R92062
Surr: BFB	91.7	37.7-212		%Rec	1	10/26/2022 12:51:21 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Acenaphthylene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Aniline	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Anthracene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Azobenzene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Benz(a)anthracene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Benzo(g,h,i)perylene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Benzoic acid	ND	0.98		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Benzyl alcohol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Bis(2-chloroethoxy)methane	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Bis(2-chloroethyl)ether	ND	0.29		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Bis(2-chloroisopropyl)ether	ND	0.29		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	11/7/2022 10:27:16 PM	71142
4-Bromophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Butyl benzyl phthalate	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Carbazole	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	11/7/2022 10:27:16 PM	71142
4-Chloroaniline	ND	0.49		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2-Chloronaphthalene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2-Chlorophenol	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
4-Chlorophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Chrysene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Di-n-butyl phthalate	ND	0.98		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Dibenzofuran	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
1,2-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
1,3-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-101922
Project: French Drain **Collection Date:** 10/19/2022
Lab ID: 2210B61-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
3,3´-Dichlorobenzidine	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Diethyl phthalate	ND	2.9		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Dimethyl phthalate	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2,4-Dimethylphenol	ND	0.29		mg/Kg	1	11/7/2022 10:27:16 PM	71142
4,6-Dinitro-2-methylphenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2,4-Dinitrophenol	ND	0.49		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Fluorene	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Hexachlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Hexachlorobutadiene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Hexachloroethane	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Isophorone	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
1-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2-Methylphenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
3+4-Methylphenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
N-Nitrosodi-n-propylamine	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
N-Nitrosodimethylamine	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Naphthalene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2-Nitroaniline	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
3-Nitroaniline	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
4-Nitroaniline	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Nitrobenzene	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2-Nitrophenol	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
4-Nitrophenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Pentachlorophenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Phenanthrene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Phenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Pyrene	ND	0.20		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Pyridine	ND	2.0		mg/Kg	1	11/7/2022 10:27:16 PM	71142
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142
2,4,5-Trichlorophenol	ND	0.24		mg/Kg	1	11/7/2022 10:27:16 PM	71142

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-101922
Project: French Drain **Collection Date:** 10/19/2022
Lab ID: 2210B61-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.39		mg/Kg	1	11/7/2022 10:27:16 PM	71142
Surr: 2-Fluorophenol	54.3	23.5-70.2		%Rec	1	11/7/2022 10:27:16 PM	71142
Surr: Phenol-d5	58.3	28.3-80		%Rec	1	11/7/2022 10:27:16 PM	71142
Surr: 2,4,6-Tribromophenol	61.6	33.8-106		%Rec	1	11/7/2022 10:27:16 PM	71142
Surr: Nitrobenzene-d5	53.6	19.5-72.3		%Rec	1	11/7/2022 10:27:16 PM	71142
Surr: 2-Fluorobiphenyl	53.9	21.1-76.5		%Rec	1	11/7/2022 10:27:16 PM	71142
Surr: 4-Terphenyl-d14	69.1	70-109	S	%Rec	1	11/7/2022 10:27:16 PM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.016		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Toluene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Ethylbenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2,4-Trimethylbenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,3,5-Trimethylbenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Naphthalene	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1-Methylnaphthalene	ND	0.13		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
2-Methylnaphthalene	ND	0.13		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Acetone	ND	0.48		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Bromobenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Bromodichloromethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Bromoform	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Bromomethane	ND	0.096		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
2-Butanone	ND	0.32		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Carbon disulfide	ND	0.32		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Carbon tetrachloride	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Chlorobenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Chloroethane	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Chloroform	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Chloromethane	ND	0.096		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
2-Chlorotoluene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
4-Chlorotoluene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
cis-1,2-DCE	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
cis-1,3-Dichloropropene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Dibromochloromethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Dibromomethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2-Dichlorobenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-101922
Project: French Drain **Collection Date:** 10/19/2022
Lab ID: 2210B61-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,4-Dichlorobenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Dichlorodifluoromethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,1-Dichloroethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,1-Dichloroethene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2-Dichloropropane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,3-Dichloropropane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
2,2-Dichloropropane	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,1-Dichloropropene	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Hexachlorobutadiene	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
2-Hexanone	ND	0.32		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Isopropylbenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
4-Isopropyltoluene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
4-Methyl-2-pentanone	ND	0.32		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Methylene chloride	ND	0.096		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
n-Butylbenzene	ND	0.096		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
n-Propylbenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
sec-Butylbenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Styrene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
tert-Butylbenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Tetrachloroethene (PCE)	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
trans-1,2-DCE	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
trans-1,3-Dichloropropene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2,3-Trichlorobenzene	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2,4-Trichlorobenzene	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,1,1-Trichloroethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,1,2-Trichloroethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Trichloroethene (TCE)	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Trichlorofluoromethane	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
1,2,3-Trichloropropane	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Vinyl chloride	ND	0.032		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Xylenes, Total	ND	0.064		mg/Kg	1	10/25/2022 6:27:52 PM	R92067
Surr: Dibromofluoromethane	116	70-130		%Rec	1	10/25/2022 6:27:52 PM	R92067
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	10/25/2022 6:27:52 PM	R92067
Surr: Toluene-d8	113	70-130		%Rec	1	10/25/2022 6:27:52 PM	R92067
Surr: 4-Bromofluorobenzene	87.0	70-130		%Rec	1	10/25/2022 6:27:52 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BD01-101922
Project: French Drain
Collection Date: 10/19/2022
Lab ID: 2210B61-003
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.29			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FB01-102022
Project: French Drain **Collection Date:** 10/20/2022 2:45:00 PM
Lab ID: 2210B61-004 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/25/2022 3:01:26 PM	71028
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/25/2022 3:01:26 PM	71028
Surr: DNOP	93.8	43.2-147		%Rec	1	10/25/2022 3:01:26 PM	71028
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/28/2022 12:38:10 AM	C92145
Surr: BFB	93.3	70-130		%Rec	1	10/28/2022 12:38:10 AM	C92145
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Acenaphthylene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Aniline	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Anthracene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Azobenzene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Benz(a)anthracene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
Benzo(a)pyrene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Benzo(b)fluoranthene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
Benzo(k)fluoranthene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Benzoic acid	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
Benzyl alcohol	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Butyl benzyl phthalate	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Carbazole	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
4-Chloroaniline	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2-Chloronaphthalene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
2-Chlorophenol	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Chrysene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Di-n-butyl phthalate	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Di-n-octyl phthalate	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Dibenzofuran	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
1,2-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
1,3-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FB01-102022
Project: French Drain
Collection Date: 10/20/2022 2:45:00 PM
Lab ID: 2210B61-004 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
3,3´-Dichlorobenzidine	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Diethyl phthalate	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Dimethyl phthalate	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
2,4-Dichlorophenol	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2,4-Dimethylphenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
2,4-Dinitrophenol	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
2,4-Dinitrotoluene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2,6-Dinitrotoluene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Fluoranthene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Fluorene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Hexachlorobenzene	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
Hexachlorobutadiene	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
Hexachlorocyclopentadiene	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
Hexachloroethane	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Isophorone	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
1-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2-Methylphenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
3+4-Methylphenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
N-Nitrosodimethylamine	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Naphthalene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2-Nitroaniline	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
3-Nitroaniline	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
4-Nitroaniline	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
Nitrobenzene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2-Nitrophenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
4-Nitrophenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Pentachlorophenol	ND	40		µg/L	1	10/31/2022 1:15:55 PM	71071
Phenanthrene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Phenol	ND	20		µg/L	1	10/31/2022 1:15:55 PM	71071
Pyrene	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Pyridine	ND	40		µg/L	1	10/31/2022 1:15:55 PM	71071
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:15:55 PM	71071
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FB01-102022
Project: French Drain **Collection Date:** 10/20/2022 2:45:00 PM
Lab ID: 2210B61-004 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/31/2022 1:15:55 PM	71071
Surr: 2-Fluorophenol	41.1	15-84.5		%Rec	1	10/31/2022 1:15:55 PM	71071
Surr: Phenol-d5	30.0	15-67		%Rec	1	10/31/2022 1:15:55 PM	71071
Surr: 2,4,6-Tribromophenol	57.1	15-108		%Rec	1	10/31/2022 1:15:55 PM	71071
Surr: Nitrobenzene-d5	52.8	16.8-112		%Rec	1	10/31/2022 1:15:55 PM	71071
Surr: 2-Fluorobiphenyl	49.4	15-101		%Rec	1	10/31/2022 1:15:55 PM	71071
Surr: 4-Terphenyl-d14	89.9	34.4-134		%Rec	1	10/31/2022 1:15:55 PM	71071
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
Benzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Toluene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Ethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Naphthalene	ND	2.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
2-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Acetone	ND	10		µg/L	1	10/28/2022 5:04:58 PM	R92188
Bromobenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Bromodichloromethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Bromoform	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Bromomethane	ND	3.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
2-Butanone	ND	10		µg/L	1	10/28/2022 5:04:58 PM	R92188
Carbon disulfide	ND	10		µg/L	1	10/28/2022 5:04:58 PM	R92188
Carbon Tetrachloride	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Chlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Chloroethane	ND	2.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Chloroform	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Chloromethane	ND	3.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
2-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
4-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
cis-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Dibromochloromethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Dibromomethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FB01-102022
Project: French Drain **Collection Date:** 10/20/2022 2:45:00 PM
Lab ID: 2210B61-004 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,1-Dichloroethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,1-Dichloroethene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,3-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
2,2-Dichloropropane	ND	2.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,1-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Hexachlorobutadiene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
2-Hexanone	ND	10		µg/L	1	10/28/2022 5:04:58 PM	R92188
Isopropylbenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
4-Isopropyltoluene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
4-Methyl-2-pentanone	ND	10		µg/L	1	10/28/2022 5:04:58 PM	R92188
Methylene Chloride	ND	3.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
n-Butylbenzene	ND	3.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
n-Propylbenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
sec-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Styrene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
tert-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
trans-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Trichlorofluoromethane	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Vinyl chloride	ND	1.0		µg/L	1	10/28/2022 5:04:58 PM	R92188
Xylenes, Total	ND	1.5		µg/L	1	10/28/2022 5:04:58 PM	R92188
Surr: 1,2-Dichloroethane-d4	85.7	70-130		%Rec	1	10/28/2022 5:04:58 PM	R92188
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	10/28/2022 5:04:58 PM	R92188
Surr: Dibromofluoromethane	100	70-130		%Rec	1	10/28/2022 5:04:58 PM	R92188
Surr: Toluene-d8	108	70-130		%Rec	1	10/28/2022 5:04:58 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-102022
Project: French Drain **Collection Date:** 10/20/2022 3:45:00 PM
Lab ID: 2210B61-005 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/24/2022 11:53:54 PM	71028
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/24/2022 11:53:54 PM	71028
Surr: DNOP	78.2	43.2-147		%Rec	1	10/24/2022 11:53:54 PM	71028
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/28/2022 1:48:38 AM	C92145
Surr: BFB	99.4	70-130		%Rec	1	10/28/2022 1:48:38 AM	C92145
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Acenaphthylene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Aniline	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Anthracene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Azobenzene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Benz(a)anthracene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
Benzo(a)pyrene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Benzo(b)fluoranthene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
Benzo(k)fluoranthene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Benzoic acid	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
Benzyl alcohol	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Butyl benzyl phthalate	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Carbazole	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
4-Chloroaniline	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2-Chloronaphthalene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
2-Chlorophenol	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Chrysene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Di-n-butyl phthalate	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Di-n-octyl phthalate	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Dibenzofuran	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
1,2-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
1,3-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB01-102022
Project: French Drain
Collection Date: 10/20/2022 3:45:00 PM
Lab ID: 2210B61-005 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
3,3´-Dichlorobenzidine	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Diethyl phthalate	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Dimethyl phthalate	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
2,4-Dichlorophenol	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2,4-Dimethylphenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
2,4-Dinitrophenol	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
2,4-Dinitrotoluene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2,6-Dinitrotoluene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Fluoranthene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Fluorene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Hexachlorobenzene	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
Hexachlorobutadiene	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
Hexachlorocyclopentadiene	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
Hexachloroethane	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Isophorone	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
1-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2-Methylphenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
3+4-Methylphenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
N-Nitrosodimethylamine	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Naphthalene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2-Nitroaniline	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
3-Nitroaniline	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
4-Nitroaniline	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
Nitrobenzene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2-Nitrophenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
4-Nitrophenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Pentachlorophenol	ND	40		µg/L	1	10/31/2022 1:57:20 PM	71071
Phenanthrene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Phenol	ND	20		µg/L	1	10/31/2022 1:57:20 PM	71071
Pyrene	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Pyridine	ND	40		µg/L	1	10/31/2022 1:57:20 PM	71071
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	10/31/2022 1:57:20 PM	71071
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-102022
Project: French Drain **Collection Date:** 10/20/2022 3:45:00 PM
Lab ID: 2210B61-005 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/31/2022 1:57:20 PM	71071
Surr: 2-Fluorophenol	42.3	15-84.5		%Rec	1	10/31/2022 1:57:20 PM	71071
Surr: Phenol-d5	30.1	15-67		%Rec	1	10/31/2022 1:57:20 PM	71071
Surr: 2,4,6-Tribromophenol	52.7	15-108		%Rec	1	10/31/2022 1:57:20 PM	71071
Surr: Nitrobenzene-d5	52.6	16.8-112		%Rec	1	10/31/2022 1:57:20 PM	71071
Surr: 2-Fluorobiphenyl	49.8	15-101		%Rec	1	10/31/2022 1:57:20 PM	71071
Surr: 4-Terphenyl-d14	79.5	34.4-134		%Rec	1	10/31/2022 1:57:20 PM	71071
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
Benzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Toluene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Ethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Naphthalene	ND	2.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
2-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Acetone	ND	10		µg/L	1	10/28/2022 5:31:51 PM	R92188
Bromobenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Bromodichloromethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Bromoform	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Bromomethane	ND	3.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
2-Butanone	ND	10		µg/L	1	10/28/2022 5:31:51 PM	R92188
Carbon disulfide	ND	10		µg/L	1	10/28/2022 5:31:51 PM	R92188
Carbon Tetrachloride	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Chlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Chloroethane	ND	2.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Chloroform	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Chloromethane	ND	3.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
2-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
4-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
cis-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Dibromochloromethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Dibromomethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-102022
Project: French Drain **Collection Date:** 10/20/2022 3:45:00 PM
Lab ID: 2210B61-005 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,1-Dichloroethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,1-Dichloroethene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,3-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
2,2-Dichloropropane	ND	2.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,1-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Hexachlorobutadiene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
2-Hexanone	ND	10		µg/L	1	10/28/2022 5:31:51 PM	R92188
Isopropylbenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
4-Isopropyltoluene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
4-Methyl-2-pentanone	ND	10		µg/L	1	10/28/2022 5:31:51 PM	R92188
Methylene Chloride	ND	3.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
n-Butylbenzene	ND	3.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
n-Propylbenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
sec-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Styrene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
tert-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
trans-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Trichlorofluoromethane	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Vinyl chloride	ND	1.0		µg/L	1	10/28/2022 5:31:51 PM	R92188
Xylenes, Total	ND	1.5		µg/L	1	10/28/2022 5:31:51 PM	R92188
Surr: 1,2-Dichloroethane-d4	84.5	70-130		%Rec	1	10/28/2022 5:31:51 PM	R92188
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	10/28/2022 5:31:51 PM	R92188
Surr: Dibromofluoromethane	96.5	70-130		%Rec	1	10/28/2022 5:31:51 PM	R92188
Surr: Toluene-d8	107	70-130		%Rec	1	10/28/2022 5:31:51 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-102022
Project: French Drain **Collection Date:** 10/20/2022
Lab ID: 2210B61-006 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	11/2/2022 1:15:43 PM	71197
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/2/2022 1:15:43 PM	71197
Surr: DNOP	97.3	21-129		%Rec	1	11/2/2022 1:15:43 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	4.4	2.5		mg/Kg	1	10/26/2022 2:48:50 AM	R92062
Surr: BFB	142	37.7-212		%Rec	1	10/26/2022 2:48:50 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Acenaphthylene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Aniline	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Anthracene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Azobenzene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Benz(a)anthracene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Benzo(a)pyrene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Benzo(b)fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Benzo(g,h,i)perylene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Benzo(k)fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Benzoic acid	ND	0.95		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Benzyl alcohol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Bis(2-chloroethoxy)methane	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Bis(2-chloroethyl)ether	ND	0.28		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Bis(2-chloroisopropyl)ether	ND	0.28		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Bis(2-ethylhexyl)phthalate	ND	0.47		mg/Kg	1	11/7/2022 11:08:16 PM	71142
4-Bromophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Butyl benzyl phthalate	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Carbazole	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
4-Chloro-3-methylphenol	ND	0.47		mg/Kg	1	11/7/2022 11:08:16 PM	71142
4-Chloroaniline	ND	0.47		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2-Chloronaphthalene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2-Chlorophenol	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
4-Chlorophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Chrysene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Di-n-butyl phthalate	ND	0.95		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Di-n-octyl phthalate	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Dibenz(a,h)anthracene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Dibenzofuran	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
1,2-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
1,3-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-102022
Project: French Drain **Collection Date:** 10/20/2022
Lab ID: 2210B61-006 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
3,3´-Dichlorobenzidine	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Diethyl phthalate	ND	2.8		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Dimethyl phthalate	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2,4-Dichlorophenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2,4-Dimethylphenol	ND	0.28		mg/Kg	1	11/7/2022 11:08:16 PM	71142
4,6-Dinitro-2-methylphenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2,4-Dinitrophenol	ND	0.47		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2,4-Dinitrotoluene	ND	0.47		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2,6-Dinitrotoluene	ND	0.47		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Fluorene	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Hexachlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Hexachlorobutadiene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Hexachlorocyclopentadiene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Hexachloroethane	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Indeno(1,2,3-cd)pyrene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Isophorone	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
1-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2-Methylphenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
3+4-Methylphenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
N-Nitrosodi-n-propylamine	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
N-Nitrosodimethylamine	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
N-Nitrosodiphenylamine	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Naphthalene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2-Nitroaniline	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
3-Nitroaniline	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
4-Nitroaniline	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Nitrobenzene	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2-Nitrophenol	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
4-Nitrophenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Pentachlorophenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Phenanthrene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Phenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Pyrene	ND	0.19		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Pyridine	ND	1.9		mg/Kg	1	11/7/2022 11:08:16 PM	71142
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142
2,4,5-Trichlorophenol	ND	0.24		mg/Kg	1	11/7/2022 11:08:16 PM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-102022
Project: French Drain **Collection Date:** 10/20/2022
Lab ID: 2210B61-006 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.38		mg/Kg	1	11/7/2022 11:08:16 PM	71142
Surr: 2-Fluorophenol	37.1	23.5-70.2		%Rec	1	11/7/2022 11:08:16 PM	71142
Surr: Phenol-d5	42.8	28.3-80		%Rec	1	11/7/2022 11:08:16 PM	71142
Surr: 2,4,6-Tribromophenol	50.8	33.8-106		%Rec	1	11/7/2022 11:08:16 PM	71142
Surr: Nitrobenzene-d5	39.7	19.5-72.3		%Rec	1	11/7/2022 11:08:16 PM	71142
Surr: 2-Fluorobiphenyl	41.4	21.1-76.5		%Rec	1	11/7/2022 11:08:16 PM	71142
Surr: 4-Terphenyl-d14	58.0	70-109	S	%Rec	1	11/7/2022 11:08:16 PM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.013		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Toluene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Ethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2,4-Trimethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,3,5-Trimethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Naphthalene	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1-Methylnaphthalene	ND	0.10		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
2-Methylnaphthalene	ND	0.10		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Acetone	ND	0.38		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Bromobenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Bromodichloromethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Bromoform	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Bromomethane	ND	0.076		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
2-Butanone	ND	0.25		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Carbon disulfide	ND	0.25		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Carbon tetrachloride	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Chlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Chloroethane	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Chloroform	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Chloromethane	ND	0.076		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
2-Chlorotoluene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
4-Chlorotoluene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
cis-1,2-DCE	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
cis-1,3-Dichloropropene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Dibromochloromethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Dibromomethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** BD01-102022
Project: French Drain **Collection Date:** 10/20/2022
Lab ID: 2210B61-006 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,4-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Dichlorodifluoromethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,1-Dichloroethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,1-Dichloroethene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2-Dichloropropane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,3-Dichloropropane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
2,2-Dichloropropane	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Hexachlorobutadiene	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
2-Hexanone	ND	0.25		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Isopropylbenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
4-Isopropyltoluene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
4-Methyl-2-pentanone	ND	0.25		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Methylene chloride	ND	0.076		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
n-Butylbenzene	ND	0.076		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
n-Propylbenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
sec-Butylbenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Styrene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
tert-Butylbenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Tetrachloroethene (PCE)	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
trans-1,2-DCE	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
trans-1,3-Dichloropropene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2,4-Trichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,1,1-Trichloroethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,1,2-Trichloroethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Trichloroethene (TCE)	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Trichlorofluoromethane	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
1,2,3-Trichloropropane	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Vinyl chloride	ND	0.025		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Xylenes, Total	ND	0.050		mg/Kg	1	10/25/2022 6:55:02 PM	R92067
Surr: Dibromofluoromethane	121	70-130		%Rec	1	10/25/2022 6:55:02 PM	R92067
Surr: 1,2-Dichloroethane-d4	118	70-130		%Rec	1	10/25/2022 6:55:02 PM	R92067
Surr: Toluene-d8	107	70-130		%Rec	1	10/25/2022 6:55:02 PM	R92067
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	10/25/2022 6:55:02 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: BD01-102022
Project: French Drain
Collection Date: 10/20/2022
Lab ID: 2210B61-006
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.79			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (20-21')
Project: French Drain **Collection Date:** 10/19/2022 1:20:00 PM
Lab ID: 2210B61-007 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	12		mg/Kg	1	11/2/2022 1:40:20 PM	71197
Motor Oil Range Organics (MRO)	ND	40		mg/Kg	1	11/2/2022 1:40:20 PM	71197
Surr: DNOP	102	21-129		%Rec	1	11/2/2022 1:40:20 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	6.2	2.7		mg/Kg	1	10/26/2022 3:12:22 AM	R92062
Surr: BFB	109	37.7-212		%Rec	1	10/26/2022 3:12:22 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Acenaphthylene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Aniline	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Anthracene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Azobenzene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Benz(a)anthracene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Benzo(g,h,i)perylene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Benzoic acid	ND	0.99		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Benzyl alcohol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Bis(2-chloroethoxy)methane	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Bis(2-chloroethyl)ether	ND	0.30		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Bis(2-chloroisopropyl)ether	ND	0.30		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	11/7/2022 11:49:53 PM	71142
4-Bromophenyl phenyl ether	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Butyl benzyl phthalate	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Carbazole	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	11/7/2022 11:49:53 PM	71142
4-Chloroaniline	ND	0.49		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2-Chlorophenol	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
4-Chlorophenyl phenyl ether	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Chrysene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Di-n-butyl phthalate	ND	0.99		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Dibenzofuran	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
1,2-Dichlorobenzene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
1,3-Dichlorobenzene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (20-21')
Project: French Drain **Collection Date:** 10/19/2022 1:20:00 PM
Lab ID: 2210B61-007 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
3,3´-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Diethyl phthalate	ND	3.0		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Dimethyl phthalate	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/7/2022 11:49:53 PM	71142
4,6-Dinitro-2-methylphenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2,4-Dinitrophenol	ND	0.49		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Fluorene	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Hexachlorobenzene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Hexachlorobutadiene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Hexachloroethane	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Isophorone	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
1-Methylnaphthalene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2-Methylphenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
3+4-Methylphenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
N-Nitrosodi-n-propylamine	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
N-Nitrosodimethylamine	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Naphthalene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2-Nitroaniline	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
3-Nitroaniline	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
4-Nitroaniline	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Nitrobenzene	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2-Nitrophenol	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
4-Nitrophenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Pentachlorophenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Phenanthrene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Phenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Pyrene	ND	0.20		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Pyridine	ND	2.0		mg/Kg	1	11/7/2022 11:49:53 PM	71142
1,2,4-Trichlorobenzene	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142
2,4,5-Trichlorophenol	ND	0.25		mg/Kg	1	11/7/2022 11:49:53 PM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (20-21')
Project: French Drain **Collection Date:** 10/19/2022 1:20:00 PM
Lab ID: 2210B61-007 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.40		mg/Kg	1	11/7/2022 11:49:53 PM	71142
Surr: 2-Fluorophenol	40.6	23.5-70.2		%Rec	1	11/7/2022 11:49:53 PM	71142
Surr: Phenol-d5	46.6	28.3-80		%Rec	1	11/7/2022 11:49:53 PM	71142
Surr: 2,4,6-Tribromophenol	55.4	33.8-106		%Rec	1	11/7/2022 11:49:53 PM	71142
Surr: Nitrobenzene-d5	44.2	19.5-72.3		%Rec	1	11/7/2022 11:49:53 PM	71142
Surr: 2-Fluorobiphenyl	46.4	21.1-76.5		%Rec	1	11/7/2022 11:49:53 PM	71142
Surr: 4-Terphenyl-d14	63.2	70-109	S	%Rec	1	11/7/2022 11:49:53 PM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.014		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Toluene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Ethylbenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2,4-Trimethylbenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,3,5-Trimethylbenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Naphthalene	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1-Methylnaphthalene	ND	0.11		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
2-Methylnaphthalene	ND	0.11		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Acetone	ND	0.41		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Bromobenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Bromodichloromethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Bromoform	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Bromomethane	ND	0.082		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
2-Butanone	ND	0.27		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Carbon disulfide	ND	0.27		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Carbon tetrachloride	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Chlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Chloroethane	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Chloroform	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Chloromethane	ND	0.082		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
2-Chlorotoluene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
4-Chlorotoluene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
cis-1,2-DCE	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
cis-1,3-Dichloropropene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Dibromochloromethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Dibromomethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2-Dichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (20-21')
Project: French Drain **Collection Date:** 10/19/2022 1:20:00 PM
Lab ID: 2210B61-007 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,4-Dichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Dichlorodifluoromethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,1-Dichloroethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,1-Dichloroethene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2-Dichloropropane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,3-Dichloropropane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
2,2-Dichloropropane	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,1-Dichloropropene	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Hexachlorobutadiene	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
2-Hexanone	ND	0.27		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Isopropylbenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
4-Isopropyltoluene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
4-Methyl-2-pentanone	ND	0.27		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Methylene chloride	ND	0.082		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
n-Butylbenzene	ND	0.082		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
n-Propylbenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
sec-Butylbenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Styrene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
tert-Butylbenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Tetrachloroethene (PCE)	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
trans-1,2-DCE	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
trans-1,3-Dichloropropene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2,3-Trichlorobenzene	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2,4-Trichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,1,1-Trichloroethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,1,2-Trichloroethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Trichloroethene (TCE)	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Trichlorofluoromethane	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
1,2,3-Trichloropropane	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Vinyl chloride	ND	0.027		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Xylenes, Total	ND	0.055		mg/Kg	1	10/25/2022 7:22:02 PM	R92067
Surr: Dibromofluoromethane	108	70-130		%Rec	1	10/25/2022 7:22:02 PM	R92067
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	10/25/2022 7:22:02 PM	R92067
Surr: Toluene-d8	104	70-130		%Rec	1	10/25/2022 7:22:02 PM	R92067
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	10/25/2022 7:22:02 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-4 (20-21')
Project: French Drain
Collection Date: 10/19/2022 1:20:00 PM
Lab ID: 2210B61-007
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.87			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (24-25')
Project: French Drain **Collection Date:** 10/19/2022 1:25:00 PM
Lab ID: 2210B61-008 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 2:04:41 PM	71197
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/2/2022 2:04:41 PM	71197
Surr: DNOP	92.4	21-129		%Rec	1	11/2/2022 2:04:41 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	10/26/2022 3:35:54 AM	R92062
Surr: BFB	94.5	37.7-212		%Rec	1	10/26/2022 3:35:54 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Acenaphthylene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Aniline	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Anthracene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Azobenzene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Benz(a)anthracene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Benzo(g,h,i)perylene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Benzoic acid	ND	0.99		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Benzyl alcohol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Bis(2-chloroethoxy)methane	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Bis(2-chloroethyl)ether	ND	0.30		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.30		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	11/8/2022 12:30:41 AM	71142
4-Bromophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Butyl benzyl phthalate	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Carbazole	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	11/8/2022 12:30:41 AM	71142
4-Chloroaniline	ND	0.49		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2-Chlorophenol	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
4-Chlorophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Chrysene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Di-n-butyl phthalate	ND	0.99		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Dibenzofuran	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
1,2-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
1,3-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (24-25')
Project: French Drain **Collection Date:** 10/19/2022 1:25:00 PM
Lab ID: 2210B61-008 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
3,3´-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Diethyl phthalate	ND	3.0		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Dimethyl phthalate	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/8/2022 12:30:41 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2,4-Dinitrophenol	ND	0.49		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Fluorene	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Hexachlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Hexachlorobutadiene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Hexachloroethane	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Isophorone	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
1-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2-Methylphenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
3+4-Methylphenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
N-Nitrosodi-n-propylamine	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
N-Nitrosodimethylamine	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Naphthalene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2-Nitroaniline	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
3-Nitroaniline	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
4-Nitroaniline	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Nitrobenzene	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2-Nitrophenol	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
4-Nitrophenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Pentachlorophenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Phenanthrene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Phenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Pyrene	ND	0.20		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Pyridine	ND	2.0		mg/Kg	1	11/8/2022 12:30:41 AM	71142
1,2,4-Trichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142
2,4,5-Trichlorophenol	ND	0.25		mg/Kg	1	11/8/2022 12:30:41 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (24-25')
Project: French Drain **Collection Date:** 10/19/2022 1:25:00 PM
Lab ID: 2210B61-008 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.40		mg/Kg	1	11/8/2022 12:30:41 AM	71142
Surr: 2-Fluorophenol	50.0	23.5-70.2		%Rec	1	11/8/2022 12:30:41 AM	71142
Surr: Phenol-d5	58.2	28.3-80		%Rec	1	11/8/2022 12:30:41 AM	71142
Surr: 2,4,6-Tribromophenol	61.2	33.8-106		%Rec	1	11/8/2022 12:30:41 AM	71142
Surr: Nitrobenzene-d5	55.9	19.5-72.3		%Rec	1	11/8/2022 12:30:41 AM	71142
Surr: 2-Fluorobiphenyl	56.7	21.1-76.5		%Rec	1	11/8/2022 12:30:41 AM	71142
Surr: 4-Terphenyl-d14	73.9	70-109		%Rec	1	11/8/2022 12:30:41 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.015		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Toluene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Ethylbenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2,4-Trimethylbenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,3,5-Trimethylbenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Naphthalene	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
2-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Acetone	ND	0.46		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Bromobenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Bromodichloromethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Bromoform	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Bromomethane	ND	0.092		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
2-Butanone	ND	0.31		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Carbon disulfide	ND	0.31		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Carbon tetrachloride	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Chlorobenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Chloroethane	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Chloroform	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Chloromethane	ND	0.092		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
2-Chlorotoluene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
4-Chlorotoluene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
cis-1,2-DCE	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
cis-1,3-Dichloropropene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Dibromochloromethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Dibromomethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2-Dichlorobenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-4 (24-25')
Project: French Drain **Collection Date:** 10/19/2022 1:25:00 PM
Lab ID: 2210B61-008 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,4-Dichlorobenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Dichlorodifluoromethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,1-Dichloroethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,1-Dichloroethene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2-Dichloropropane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,3-Dichloropropane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
2,2-Dichloropropane	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,1-Dichloropropene	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Hexachlorobutadiene	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
2-Hexanone	ND	0.31		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Isopropylbenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
4-Isopropyltoluene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
4-Methyl-2-pentanone	ND	0.31		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Methylene chloride	ND	0.092		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
n-Butylbenzene	ND	0.092		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
n-Propylbenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
sec-Butylbenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Styrene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
tert-Butylbenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Tetrachloroethene (PCE)	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
trans-1,2-DCE	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
trans-1,3-Dichloropropene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2,3-Trichlorobenzene	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2,4-Trichlorobenzene	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,1,1-Trichloroethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,1,2-Trichloroethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Trichloroethene (TCE)	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Trichlorofluoromethane	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
1,2,3-Trichloropropane	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Vinyl chloride	ND	0.031		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Xylenes, Total	ND	0.061		mg/Kg	1	10/25/2022 7:48:55 PM	R92067
Surr: Dibromofluoromethane	114	70-130		%Rec	1	10/25/2022 7:48:55 PM	R92067
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	10/25/2022 7:48:55 PM	R92067
Surr: Toluene-d8	114	70-130		%Rec	1	10/25/2022 7:48:55 PM	R92067
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	10/25/2022 7:48:55 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-4 (24-25')
Project: French Drain
Collection Date: 10/19/2022 1:25:00 PM
Lab ID: 2210B61-008
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	9.58			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-5 (12.5-13.5')
Project: French Drain **Collection Date:** 10/19/2022 4:05:00 PM
Lab ID: 2210B61-009 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	10/26/2022 9:27:10 PM	71044
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	10/26/2022 9:27:10 PM	71044
Surr: DNOP	90.1	21-129		%Rec	1	10/26/2022 9:27:10 PM	71044
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	10/26/2022 3:59:22 AM	R92062
Surr: BFB	92.2	37.7-212		%Rec	1	10/26/2022 3:59:22 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Acenaphthylene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Aniline	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Anthracene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Azobenzene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Benz(a)anthracene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Benzo(g,h,i)perylene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Benzoic acid	ND	0.99		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Benzyl alcohol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Bis(2-chloroethoxy)methane	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Bis(2-chloroethyl)ether	ND	0.30		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.30		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	11/8/2022 1:12:08 AM	71142
4-Bromophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Butyl benzyl phthalate	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Carbazole	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	11/8/2022 1:12:08 AM	71142
4-Chloroaniline	ND	0.50		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2-Chlorophenol	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
4-Chlorophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Chrysene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Di-n-butyl phthalate	ND	0.99		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Dibenzofuran	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
1,2-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
1,3-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-5 (12.5-13.5')
Project: French Drain **Collection Date:** 10/19/2022 4:05:00 PM
Lab ID: 2210B61-009 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
3,3´-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Diethyl phthalate	ND	3.0		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Dimethyl phthalate	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/8/2022 1:12:08 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2,4-Dinitrophenol	ND	0.50		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Fluorene	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Hexachlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Hexachlorobutadiene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Hexachloroethane	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Isophorone	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
1-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2-Methylphenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
3+4-Methylphenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
N-Nitrosodi-n-propylamine	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
N-Nitrosodimethylamine	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Naphthalene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2-Nitroaniline	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
3-Nitroaniline	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
4-Nitroaniline	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Nitrobenzene	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2-Nitrophenol	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
4-Nitrophenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Pentachlorophenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Phenanthrene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Phenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Pyrene	ND	0.20		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Pyridine	ND	2.0		mg/Kg	1	11/8/2022 1:12:08 AM	71142
1,2,4-Trichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142
2,4,5-Trichlorophenol	ND	0.25		mg/Kg	1	11/8/2022 1:12:08 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-5 (12.5-13.5')
Project: French Drain **Collection Date:** 10/19/2022 4:05:00 PM
Lab ID: 2210B61-009 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.40		mg/Kg	1	11/8/2022 1:12:08 AM	71142
Surr: 2-Fluorophenol	41.7	23.5-70.2		%Rec	1	11/8/2022 1:12:08 AM	71142
Surr: Phenol-d5	49.0	28.3-80		%Rec	1	11/8/2022 1:12:08 AM	71142
Surr: 2,4,6-Tribromophenol	59.9	33.8-106		%Rec	1	11/8/2022 1:12:08 AM	71142
Surr: Nitrobenzene-d5	45.0	19.5-72.3		%Rec	1	11/8/2022 1:12:08 AM	71142
Surr: 2-Fluorobiphenyl	47.9	21.1-76.5		%Rec	1	11/8/2022 1:12:08 AM	71142
Surr: 4-Terphenyl-d14	70.7	70-109		%Rec	1	11/8/2022 1:12:08 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.016		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Toluene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Ethylbenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2,4-Trimethylbenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,3,5-Trimethylbenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Naphthalene	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1-Methylnaphthalene	ND	0.13		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
2-Methylnaphthalene	ND	0.13		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Acetone	ND	0.49		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Bromobenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Bromodichloromethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Bromoform	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Bromomethane	ND	0.098		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
2-Butanone	ND	0.33		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Carbon disulfide	ND	0.33		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Carbon tetrachloride	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Chlorobenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Chloroethane	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Chloroform	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Chloromethane	ND	0.098		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
2-Chlorotoluene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
4-Chlorotoluene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
cis-1,2-DCE	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
cis-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Dibromochloromethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Dibromomethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2-Dichlorobenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-5 (12.5-13.5')
Project: French Drain **Collection Date:** 10/19/2022 4:05:00 PM
Lab ID: 2210B61-009 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,4-Dichlorobenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Dichlorodifluoromethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,1-Dichloroethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,1-Dichloroethene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2-Dichloropropane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,3-Dichloropropane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
2,2-Dichloropropane	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,1-Dichloropropene	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Hexachlorobutadiene	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
2-Hexanone	ND	0.33		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Isopropylbenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
4-Isopropyltoluene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
4-Methyl-2-pentanone	ND	0.33		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Methylene chloride	ND	0.098		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
n-Butylbenzene	ND	0.098		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
n-Propylbenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
sec-Butylbenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Styrene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
tert-Butylbenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Tetrachloroethene (PCE)	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
trans-1,2-DCE	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
trans-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2,3-Trichlorobenzene	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2,4-Trichlorobenzene	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,1,1-Trichloroethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,1,2-Trichloroethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Trichloroethene (TCE)	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Trichlorofluoromethane	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
1,2,3-Trichloropropane	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Vinyl chloride	ND	0.033		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Xylenes, Total	ND	0.065		mg/Kg	1	10/25/2022 8:15:57 PM	R92067
Surr: Dibromofluoromethane	104	70-130		%Rec	1	10/25/2022 8:15:57 PM	R92067
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	10/25/2022 8:15:57 PM	R92067
Surr: Toluene-d8	110	70-130		%Rec	1	10/25/2022 8:15:57 PM	R92067
Surr: 4-Bromofluorobenzene	87.4	70-130		%Rec	1	10/25/2022 8:15:57 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-5 (12.5-13.5')
Project: French Drain
Collection Date: 10/19/2022 4:05:00 PM
Lab ID: 2210B61-009
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.30			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-7 (16-17')
Project: French Drain **Collection Date:** 10/20/2022 10:15:00 AM
Lab ID: 2210B61-010 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 2:28:51 PM	71197
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 2:28:51 PM	71197
Surr: DNOP	97.3	21-129		%Rec	1	11/2/2022 2:28:51 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.0		mg/Kg	1	10/26/2022 4:22:52 AM	R92062
Surr: BFB	92.9	37.7-212		%Rec	1	10/26/2022 4:22:52 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Acenaphthylene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Aniline	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Anthracene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Azobenzene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Benz(a)anthracene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Benzo(a)pyrene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Benzo(b)fluoranthene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Benzo(g,h,i)perylene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Benzo(k)fluoranthene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Benzoic acid	ND	0.91		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Benzyl alcohol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Bis(2-chloroethoxy)methane	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Bis(2-chloroethyl)ether	ND	0.27		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.27		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.45		mg/Kg	1	11/8/2022 1:52:48 AM	71142
4-Bromophenyl phenyl ether	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Butyl benzyl phthalate	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Carbazole	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
4-Chloro-3-methylphenol	ND	0.45		mg/Kg	1	11/8/2022 1:52:48 AM	71142
4-Chloroaniline	ND	0.45		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2-Chloronaphthalene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2-Chlorophenol	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
4-Chlorophenyl phenyl ether	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Chrysene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Di-n-butyl phthalate	ND	0.91		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Di-n-octyl phthalate	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Dibenz(a,h)anthracene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Dibenzofuran	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
1,2-Dichlorobenzene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
1,3-Dichlorobenzene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-7 (16-17')
Project: French Drain **Collection Date:** 10/20/2022 10:15:00 AM
Lab ID: 2210B61-010 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
3,3´-Dichlorobenzidine	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Diethyl phthalate	ND	2.7		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Dimethyl phthalate	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2,4-Dichlorophenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2,4-Dimethylphenol	ND	0.27		mg/Kg	1	11/8/2022 1:52:48 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2,4-Dinitrophenol	ND	0.45		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2,4-Dinitrotoluene	ND	0.45		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2,6-Dinitrotoluene	ND	0.45		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Fluoranthene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Fluorene	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Hexachlorobenzene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Hexachlorobutadiene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Hexachlorocyclopentadiene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Hexachloroethane	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Isophorone	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
1-Methylnaphthalene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2-Methylnaphthalene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2-Methylphenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
3+4-Methylphenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
N-Nitrosodi-n-propylamine	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
N-Nitrosodimethylamine	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
N-Nitrosodiphenylamine	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Naphthalene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2-Nitroaniline	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
3-Nitroaniline	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
4-Nitroaniline	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Nitrobenzene	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2-Nitrophenol	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
4-Nitrophenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Pentachlorophenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Phenanthrene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Phenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Pyrene	ND	0.18		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Pyridine	ND	1.8		mg/Kg	1	11/8/2022 1:52:48 AM	71142
1,2,4-Trichlorobenzene	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142
2,4,5-Trichlorophenol	ND	0.23		mg/Kg	1	11/8/2022 1:52:48 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-7 (16-17')
Project: French Drain **Collection Date:** 10/20/2022 10:15:00 AM
Lab ID: 2210B61-010 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.36		mg/Kg	1	11/8/2022 1:52:48 AM	71142
Surr: 2-Fluorophenol	70.5	23.5-70.2	S	%Rec	1	11/8/2022 1:52:48 AM	71142
Surr: Phenol-d5	80.5	28.3-80	S	%Rec	1	11/8/2022 1:52:48 AM	71142
Surr: 2,4,6-Tribromophenol	76.2	33.8-106		%Rec	1	11/8/2022 1:52:48 AM	71142
Surr: Nitrobenzene-d5	71.3	19.5-72.3		%Rec	1	11/8/2022 1:52:48 AM	71142
Surr: 2-Fluorobiphenyl	73.9	21.1-76.5		%Rec	1	11/8/2022 1:52:48 AM	71142
Surr: 4-Terphenyl-d14	86.7	70-109		%Rec	1	11/8/2022 1:52:48 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.015		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Toluene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Ethylbenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2,4-Trimethylbenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,3,5-Trimethylbenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Naphthalene	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
2-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Acetone	ND	0.46		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Bromobenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Bromodichloromethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Bromoform	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Bromomethane	ND	0.091		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
2-Butanone	ND	0.30		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Carbon disulfide	ND	0.30		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Carbon tetrachloride	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Chlorobenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Chloroethane	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Chloroform	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Chloromethane	ND	0.091		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
2-Chlorotoluene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
4-Chlorotoluene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
cis-1,2-DCE	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
cis-1,3-Dichloropropene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Dibromochloromethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Dibromomethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2-Dichlorobenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-7 (16-17')
Project: French Drain **Collection Date:** 10/20/2022 10:15:00 AM
Lab ID: 2210B61-010 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,4-Dichlorobenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Dichlorodifluoromethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,1-Dichloroethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,1-Dichloroethene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2-Dichloropropane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,3-Dichloropropane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
2,2-Dichloropropane	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,1-Dichloropropene	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Hexachlorobutadiene	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
2-Hexanone	ND	0.30		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Isopropylbenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
4-Isopropyltoluene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
4-Methyl-2-pentanone	ND	0.30		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Methylene chloride	ND	0.091		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
n-Butylbenzene	ND	0.091		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
n-Propylbenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
sec-Butylbenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Styrene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
tert-Butylbenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Tetrachloroethene (PCE)	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
trans-1,2-DCE	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
trans-1,3-Dichloropropene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2,3-Trichlorobenzene	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2,4-Trichlorobenzene	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,1,1-Trichloroethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,1,2-Trichloroethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Trichloroethene (TCE)	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Trichlorofluoromethane	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
1,2,3-Trichloropropane	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Vinyl chloride	ND	0.030		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Xylenes, Total	ND	0.061		mg/Kg	1	10/25/2022 8:43:03 PM	R92067
Surr: Dibromofluoromethane	121	70-130		%Rec	1	10/25/2022 8:43:03 PM	R92067
Surr: 1,2-Dichloroethane-d4	115	70-130		%Rec	1	10/25/2022 8:43:03 PM	R92067
Surr: Toluene-d8	106	70-130		%Rec	1	10/25/2022 8:43:03 PM	R92067
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	10/25/2022 8:43:03 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-7 (16-17')
Project: French Drain
Collection Date: 10/20/2022 10:15:00 AM
Lab ID: 2210B61-010
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.57			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (6.5-7.5')
Project: French Drain **Collection Date:** 10/20/2022 1:10:00 PM
Lab ID: 2210B61-011 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 2:53:06 PM	71197
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/2/2022 2:53:06 PM	71197
Surr: DNOP	98.5	21-129		%Rec	1	11/2/2022 2:53:06 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	10	2.5		mg/Kg	1	10/26/2022 4:46:23 AM	R92062
Surr: BFB	236	37.7-212	S	%Rec	1	10/26/2022 4:46:23 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Acenaphthylene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Aniline	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Anthracene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Azobenzene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Benz(a)anthracene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Benzo(a)pyrene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Benzo(b)fluoranthene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Benzo(g,h,i)perylene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Benzo(k)fluoranthene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Benzoic acid	ND	0.90		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Benzyl alcohol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Bis(2-chloroethoxy)methane	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Bis(2-chloroethyl)ether	ND	0.27		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.27		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.45		mg/Kg	1	11/8/2022 2:34:09 AM	71142
4-Bromophenyl phenyl ether	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Butyl benzyl phthalate	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Carbazole	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
4-Chloro-3-methylphenol	ND	0.45		mg/Kg	1	11/8/2022 2:34:09 AM	71142
4-Chloroaniline	ND	0.45		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2-Chloronaphthalene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2-Chlorophenol	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
4-Chlorophenyl phenyl ether	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Chrysene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Di-n-butyl phthalate	ND	0.90		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Di-n-octyl phthalate	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Dibenz(a,h)anthracene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Dibenzofuran	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
1,2-Dichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
1,3-Dichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (6.5-7.5')
Project: French Drain **Collection Date:** 10/20/2022 1:10:00 PM
Lab ID: 2210B61-011 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
3,3´-Dichlorobenzidine	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Diethyl phthalate	ND	2.7		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Dimethyl phthalate	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2,4-Dichlorophenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2,4-Dimethylphenol	ND	0.27		mg/Kg	1	11/8/2022 2:34:09 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2,4-Dinitrophenol	ND	0.45		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2,4-Dinitrotoluene	ND	0.45		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2,6-Dinitrotoluene	ND	0.45		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Fluoranthene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Fluorene	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Hexachlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Hexachlorobutadiene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Hexachlorocyclopentadiene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Hexachloroethane	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Isophorone	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
1-Methylnaphthalene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2-Methylnaphthalene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2-Methylphenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
3+4-Methylphenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
N-Nitrosodi-n-propylamine	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
N-Nitrosodimethylamine	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
N-Nitrosodiphenylamine	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Naphthalene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2-Nitroaniline	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
3-Nitroaniline	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
4-Nitroaniline	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Nitrobenzene	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2-Nitrophenol	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
4-Nitrophenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Pentachlorophenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Phenanthrene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Phenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Pyrene	ND	0.18		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Pyridine	ND	1.8		mg/Kg	1	11/8/2022 2:34:09 AM	71142
1,2,4-Trichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142
2,4,5-Trichlorophenol	ND	0.22		mg/Kg	1	11/8/2022 2:34:09 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (6.5-7.5')
Project: French Drain **Collection Date:** 10/20/2022 1:10:00 PM
Lab ID: 2210B61-011 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.36		mg/Kg	1	11/8/2022 2:34:09 AM	71142
Surr: 2-Fluorophenol	41.0	23.5-70.2		%Rec	1	11/8/2022 2:34:09 AM	71142
Surr: Phenol-d5	45.8	28.3-80		%Rec	1	11/8/2022 2:34:09 AM	71142
Surr: 2,4,6-Tribromophenol	44.3	33.8-106		%Rec	1	11/8/2022 2:34:09 AM	71142
Surr: Nitrobenzene-d5	44.0	19.5-72.3		%Rec	1	11/8/2022 2:34:09 AM	71142
Surr: 2-Fluorobiphenyl	43.5	21.1-76.5		%Rec	1	11/8/2022 2:34:09 AM	71142
Surr: 4-Terphenyl-d14	57.4	70-109	S	%Rec	1	11/8/2022 2:34:09 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.012		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Toluene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Ethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2,4-Trimethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,3,5-Trimethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Naphthalene	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1-Methylnaphthalene	ND	0.099		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
2-Methylnaphthalene	ND	0.099		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Acetone	ND	0.37		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Bromobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Bromodichloromethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Bromoform	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Bromomethane	ND	0.074		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
2-Butanone	ND	0.25		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Carbon disulfide	ND	0.25		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Carbon tetrachloride	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Chlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Chloroethane	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Chloroform	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Chloromethane	ND	0.074		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
2-Chlorotoluene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
4-Chlorotoluene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
cis-1,2-DCE	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
cis-1,3-Dichloropropene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Dibromochloromethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Dibromomethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (6.5-7.5')
Project: French Drain **Collection Date:** 10/20/2022 1:10:00 PM
Lab ID: 2210B61-011 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,4-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Dichlorodifluoromethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,1-Dichloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,1-Dichloroethene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2-Dichloropropane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,3-Dichloropropane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
2,2-Dichloropropane	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Hexachlorobutadiene	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
2-Hexanone	ND	0.25		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Isopropylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
4-Isopropyltoluene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
4-Methyl-2-pentanone	ND	0.25		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Methylene chloride	ND	0.074		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
n-Butylbenzene	ND	0.074		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
n-Propylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
sec-Butylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Styrene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
tert-Butylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Tetrachloroethene (PCE)	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
trans-1,2-DCE	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
trans-1,3-Dichloropropene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2,4-Trichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,1,1-Trichloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,1,2-Trichloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Trichloroethene (TCE)	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Trichlorofluoromethane	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
1,2,3-Trichloropropane	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Vinyl chloride	ND	0.025		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Xylenes, Total	ND	0.050		mg/Kg	1	10/25/2022 9:09:59 PM	R92067
Surr: Dibromofluoromethane	106	70-130		%Rec	1	10/25/2022 9:09:59 PM	R92067
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	1	10/25/2022 9:09:59 PM	R92067
Surr: Toluene-d8	109	70-130		%Rec	1	10/25/2022 9:09:59 PM	R92067
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	10/25/2022 9:09:59 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-9 (6.5-7.5')
Project: French Drain
Collection Date: 10/20/2022 1:10:00 PM
Lab ID: 2210B61-011
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.80			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (7.5-8.5')
Project: French Drain **Collection Date:** 10/20/2022 1:02:00 PM
Lab ID: 2210B61-012 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 3:17:21 PM	71197
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 3:17:21 PM	71197
Surr: DNOP	97.4	21-129		%Rec	1	11/2/2022 3:17:21 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	19	2.5		mg/Kg	1	10/26/2022 5:09:53 AM	R92062
Surr: BFB	303	37.7-212	S	%Rec	1	10/26/2022 5:09:53 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Acenaphthylene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Aniline	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Anthracene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Azobenzene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Benz(a)anthracene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Benzo(a)pyrene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Benzo(b)fluoranthene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Benzo(g,h,i)perylene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Benzo(k)fluoranthene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Benzoic acid	ND	0.87		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Benzyl alcohol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Bis(2-chloroethoxy)methane	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Bis(2-chloroethyl)ether	ND	0.26		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.26		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.44		mg/Kg	1	11/8/2022 3:14:41 AM	71142
4-Bromophenyl phenyl ether	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Butyl benzyl phthalate	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Carbazole	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
4-Chloro-3-methylphenol	ND	0.44		mg/Kg	1	11/8/2022 3:14:41 AM	71142
4-Chloroaniline	ND	0.44		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2-Chloronaphthalene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2-Chlorophenol	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
4-Chlorophenyl phenyl ether	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Chrysene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Di-n-butyl phthalate	ND	0.87		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Di-n-octyl phthalate	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Dibenz(a,h)anthracene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Dibenzofuran	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
1,2-Dichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
1,3-Dichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-9 (7.5-8.5')
Project: French Drain
Collection Date: 10/20/2022 1:02:00 PM
Lab ID: 2210B61-012
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
3,3´-Dichlorobenzidine	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Diethyl phthalate	ND	2.6		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Dimethyl phthalate	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2,4-Dichlorophenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2,4-Dimethylphenol	ND	0.26		mg/Kg	1	11/8/2022 3:14:41 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2,4-Dinitrophenol	ND	0.44		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2,4-Dinitrotoluene	ND	0.44		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2,6-Dinitrotoluene	ND	0.44		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Fluoranthene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Fluorene	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Hexachlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Hexachlorobutadiene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Hexachlorocyclopentadiene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Hexachloroethane	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Isophorone	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
1-Methylnaphthalene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2-Methylnaphthalene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2-Methylphenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
3+4-Methylphenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
N-Nitrosodi-n-propylamine	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
N-Nitrosodimethylamine	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
N-Nitrosodiphenylamine	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Naphthalene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2-Nitroaniline	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
3-Nitroaniline	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
4-Nitroaniline	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Nitrobenzene	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2-Nitrophenol	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
4-Nitrophenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Pentachlorophenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Phenanthrene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Phenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Pyrene	ND	0.17		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Pyridine	ND	1.7		mg/Kg	1	11/8/2022 3:14:41 AM	71142
1,2,4-Trichlorobenzene	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142
2,4,5-Trichlorophenol	ND	0.22		mg/Kg	1	11/8/2022 3:14:41 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (7.5-8.5')
Project: French Drain **Collection Date:** 10/20/2022 1:02:00 PM
Lab ID: 2210B61-012 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.35		mg/Kg	1	11/8/2022 3:14:41 AM	71142
Surr: 2-Fluorophenol	35.6	23.5-70.2		%Rec	1	11/8/2022 3:14:41 AM	71142
Surr: Phenol-d5	41.4	28.3-80		%Rec	1	11/8/2022 3:14:41 AM	71142
Surr: 2,4,6-Tribromophenol	47.3	33.8-106		%Rec	1	11/8/2022 3:14:41 AM	71142
Surr: Nitrobenzene-d5	38.6	19.5-72.3		%Rec	1	11/8/2022 3:14:41 AM	71142
Surr: 2-Fluorobiphenyl	41.9	21.1-76.5		%Rec	1	11/8/2022 3:14:41 AM	71142
Surr: 4-Terphenyl-d14	63.0	70-109	S	%Rec	1	11/8/2022 3:14:41 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.012		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Toluene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Ethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2,4-Trimethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,3,5-Trimethylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Naphthalene	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1-Methylnaphthalene	ND	0.099		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
2-Methylnaphthalene	ND	0.099		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Acetone	ND	0.37		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Bromobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Bromodichloromethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Bromoform	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Bromomethane	ND	0.074		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
2-Butanone	ND	0.25		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Carbon disulfide	ND	0.25		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Carbon tetrachloride	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Chlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Chloroethane	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Chloroform	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Chloromethane	ND	0.074		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
2-Chlorotoluene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
4-Chlorotoluene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
cis-1,2-DCE	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
cis-1,3-Dichloropropene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Dibromochloromethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Dibromomethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (7.5-8.5')
Project: French Drain **Collection Date:** 10/20/2022 1:02:00 PM
Lab ID: 2210B61-012 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,4-Dichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Dichlorodifluoromethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,1-Dichloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,1-Dichloroethene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2-Dichloropropane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,3-Dichloropropane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
2,2-Dichloropropane	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Hexachlorobutadiene	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
2-Hexanone	ND	0.25		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Isopropylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
4-Isopropyltoluene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
4-Methyl-2-pentanone	ND	0.25		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Methylene chloride	ND	0.074		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
n-Butylbenzene	ND	0.074		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
n-Propylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
sec-Butylbenzene	0.035	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Styrene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
tert-Butylbenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Tetrachloroethene (PCE)	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
trans-1,2-DCE	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
trans-1,3-Dichloropropene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2,3-Trichlorobenzene	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2,4-Trichlorobenzene	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,1,1-Trichloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,1,2-Trichloroethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Trichloroethene (TCE)	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Trichlorofluoromethane	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
1,2,3-Trichloropropane	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Vinyl chloride	ND	0.025		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Xylenes, Total	ND	0.050		mg/Kg	1	10/25/2022 9:36:50 PM	R92067
Surr: Dibromofluoromethane	104	70-130		%Rec	1	10/25/2022 9:36:50 PM	R92067
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	10/25/2022 9:36:50 PM	R92067
Surr: Toluene-d8	115	70-130		%Rec	1	10/25/2022 9:36:50 PM	R92067
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	10/25/2022 9:36:50 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-9 (7.5-8.5')
Project: French Drain
Collection Date: 10/20/2022 1:02:00 PM
Lab ID: 2210B61-012
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.68			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-9 (13.75-14.75')
Project: French Drain
Collection Date: 10/20/2022 1:26:00 PM
Lab ID: 2210B61-013
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 3:41:43 PM	71197
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 3:41:43 PM	71197
Surr: DNOP	100	21-129		%Rec	1	11/2/2022 3:41:43 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	2.7		mg/Kg	1	10/26/2022 11:41:50 PM	B92099
Surr: BFB	89.5	37.7-212		%Rec	1	10/26/2022 11:41:50 PM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Acenaphthylene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Aniline	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Anthracene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Azobenzene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Benz(a)anthracene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Benzo(g,h,i)perylene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Benzoic acid	ND	0.98		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Benzyl alcohol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Bis(2-chloroethoxy)methane	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Bis(2-chloroethyl)ether	ND	0.30		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.30		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	11/8/2022 3:56:08 AM	71142
4-Bromophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Butyl benzyl phthalate	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Carbazole	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	11/8/2022 3:56:08 AM	71142
4-Chloroaniline	ND	0.49		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2-Chlorophenol	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
4-Chlorophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Chrysene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Di-n-butyl phthalate	ND	0.98		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Dibenzofuran	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
1,2-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
1,3-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-9 (13.75-14.75')
Project: French Drain
Collection Date: 10/20/2022 1:26:00 PM
Lab ID: 2210B61-013
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
3,3´-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Diethyl phthalate	ND	3.0		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Dimethyl phthalate	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	11/8/2022 3:56:08 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2,4-Dinitrophenol	ND	0.49		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Fluorene	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Hexachlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Hexachlorobutadiene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Hexachloroethane	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Isophorone	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
1-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2-Methylphenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
3+4-Methylphenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
N-Nitrosodi-n-propylamine	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
N-Nitrosodimethylamine	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Naphthalene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2-Nitroaniline	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
3-Nitroaniline	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
4-Nitroaniline	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Nitrobenzene	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2-Nitrophenol	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
4-Nitrophenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Pentachlorophenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Phenanthrene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Phenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Pyrene	ND	0.20		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Pyridine	ND	2.0		mg/Kg	1	11/8/2022 3:56:08 AM	71142
1,2,4-Trichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142
2,4,5-Trichlorophenol	ND	0.25		mg/Kg	1	11/8/2022 3:56:08 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (13.75-14.75')
Project: French Drain **Collection Date:** 10/20/2022 1:26:00 PM
Lab ID: 2210B61-013 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.39		mg/Kg	1	11/8/2022 3:56:08 AM	71142
Surr: 2-Fluorophenol	33.9	23.5-70.2		%Rec	1	11/8/2022 3:56:08 AM	71142
Surr: Phenol-d5	37.7	28.3-80		%Rec	1	11/8/2022 3:56:08 AM	71142
Surr: 2,4,6-Tribromophenol	41.6	33.8-106		%Rec	1	11/8/2022 3:56:08 AM	71142
Surr: Nitrobenzene-d5	38.2	19.5-72.3		%Rec	1	11/8/2022 3:56:08 AM	71142
Surr: 2-Fluorobiphenyl	36.9	21.1-76.5		%Rec	1	11/8/2022 3:56:08 AM	71142
Surr: 4-Terphenyl-d14	58.4	70-109	S	%Rec	1	11/8/2022 3:56:08 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.014		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Toluene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Ethylbenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2,4-Trimethylbenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,3,5-Trimethylbenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Naphthalene	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1-Methylnaphthalene	ND	0.11		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
2-Methylnaphthalene	ND	0.11		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Acetone	ND	0.41		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Bromobenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Bromodichloromethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Bromoform	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Bromomethane	ND	0.082		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
2-Butanone	ND	0.27		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Carbon disulfide	ND	0.27		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Carbon tetrachloride	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Chlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Chloroethane	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Chloroform	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Chloromethane	ND	0.082		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
2-Chlorotoluene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
4-Chlorotoluene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
cis-1,2-DCE	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
cis-1,3-Dichloropropene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Dibromochloromethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Dibromomethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2-Dichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-9 (13.75-14.75')
Project: French Drain **Collection Date:** 10/20/2022 1:26:00 PM
Lab ID: 2210B61-013 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,4-Dichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Dichlorodifluoromethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,1-Dichloroethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,1-Dichloroethene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2-Dichloropropane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,3-Dichloropropane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
2,2-Dichloropropane	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,1-Dichloropropene	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Hexachlorobutadiene	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
2-Hexanone	ND	0.27		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Isopropylbenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
4-Isopropyltoluene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
4-Methyl-2-pentanone	ND	0.27		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Methylene chloride	ND	0.082		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
n-Butylbenzene	ND	0.082		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
n-Propylbenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
sec-Butylbenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Styrene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
tert-Butylbenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Tetrachloroethene (PCE)	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
trans-1,2-DCE	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
trans-1,3-Dichloropropene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2,3-Trichlorobenzene	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2,4-Trichlorobenzene	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,1,1-Trichloroethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,1,2-Trichloroethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Trichloroethene (TCE)	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Trichlorofluoromethane	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
1,2,3-Trichloropropane	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Vinyl chloride	ND	0.027		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Xylenes, Total	ND	0.055		mg/Kg	1	10/25/2022 10:03:40 PM	R92067
Surr: Dibromofluoromethane	115	70-130		%Rec	1	10/25/2022 10:03:40 PM	R92067
Surr: 1,2-Dichloroethane-d4	120	70-130		%Rec	1	10/25/2022 10:03:40 PM	R92067
Surr: Toluene-d8	115	70-130		%Rec	1	10/25/2022 10:03:40 PM	R92067
Surr: 4-Bromofluorobenzene	91.9	70-130		%Rec	1	10/25/2022 10:03:40 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-9 (13.75-14.75')
Project: French Drain
Collection Date: 10/20/2022 1:26:00 PM
Lab ID: 2210B61-013
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	9.09			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (15-16')
Project: French Drain **Collection Date:** 10/20/2022 11:10:00 AM
Lab ID: 2210B61-014 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	11/2/2022 4:05:52 PM	71197
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/2/2022 4:05:52 PM	71197
Surr: DNOP	107	21-129		%Rec	1	11/2/2022 4:05:52 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	2.9		mg/Kg	1	10/27/2022 12:52:26 AM	B92099
Surr: BFB	97.2	37.7-212		%Rec	1	10/27/2022 12:52:26 AM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Acenaphthylene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Aniline	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Anthracene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Azobenzene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Benz(a)anthracene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Benzo(a)pyrene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Benzo(b)fluoranthene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Benzo(g,h,i)perylene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Benzo(k)fluoranthene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Benzoic acid	ND	0.97		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Benzyl alcohol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Bis(2-chloroethoxy)methane	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Bis(2-chloroethyl)ether	ND	0.29		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.29		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.48		mg/Kg	1	11/8/2022 4:36:41 AM	71142
4-Bromophenyl phenyl ether	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Butyl benzyl phthalate	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Carbazole	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
4-Chloro-3-methylphenol	ND	0.48		mg/Kg	1	11/8/2022 4:36:41 AM	71142
4-Chloroaniline	ND	0.48		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2-Chloronaphthalene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2-Chlorophenol	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
4-Chlorophenyl phenyl ether	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Chrysene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Di-n-butyl phthalate	ND	0.97		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Dibenz(a,h)anthracene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Dibenzofuran	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
1,2-Dichlorobenzene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
1,3-Dichlorobenzene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (15-16')
Project: French Drain **Collection Date:** 10/20/2022 11:10:00 AM
Lab ID: 2210B61-014 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
3,3´-Dichlorobenzidine	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Diethyl phthalate	ND	2.9		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Dimethyl phthalate	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2,4-Dimethylphenol	ND	0.29		mg/Kg	1	11/8/2022 4:36:41 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2,4-Dinitrophenol	ND	0.48		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2,4-Dinitrotoluene	ND	0.48		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2,6-Dinitrotoluene	ND	0.48		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Fluoranthene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Fluorene	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Hexachlorobenzene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Hexachlorobutadiene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Hexachlorocyclopentadiene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Hexachloroethane	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Isophorone	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
1-Methylnaphthalene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2-Methylnaphthalene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2-Methylphenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
3+4-Methylphenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
N-Nitrosodi-n-propylamine	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
N-Nitrosodimethylamine	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
N-Nitrosodiphenylamine	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Naphthalene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2-Nitroaniline	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
3-Nitroaniline	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
4-Nitroaniline	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Nitrobenzene	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2-Nitrophenol	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
4-Nitrophenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Pentachlorophenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Phenanthrene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Phenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Pyrene	ND	0.19		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Pyridine	ND	1.9		mg/Kg	1	11/8/2022 4:36:41 AM	71142
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142
2,4,5-Trichlorophenol	ND	0.24		mg/Kg	1	11/8/2022 4:36:41 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (15-16')
Project: French Drain **Collection Date:** 10/20/2022 11:10:00 AM
Lab ID: 2210B61-014 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.39		mg/Kg	1	11/8/2022 4:36:41 AM	71142
Surr: 2-Fluorophenol	53.0	23.5-70.2		%Rec	1	11/8/2022 4:36:41 AM	71142
Surr: Phenol-d5	60.5	28.3-80		%Rec	1	11/8/2022 4:36:41 AM	71142
Surr: 2,4,6-Tribromophenol	62.7	33.8-106		%Rec	1	11/8/2022 4:36:41 AM	71142
Surr: Nitrobenzene-d5	53.3	19.5-72.3		%Rec	1	11/8/2022 4:36:41 AM	71142
Surr: 2-Fluorobiphenyl	55.7	21.1-76.5		%Rec	1	11/8/2022 4:36:41 AM	71142
Surr: 4-Terphenyl-d14	75.6	70-109		%Rec	1	11/8/2022 4:36:41 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.015		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Toluene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Ethylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2,4-Trimethylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,3,5-Trimethylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Naphthalene	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
2-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Acetone	ND	0.44		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Bromobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Bromodichloromethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Bromoform	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Bromomethane	ND	0.087		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
2-Butanone	ND	0.29		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Carbon disulfide	ND	0.29		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Carbon tetrachloride	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Chlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Chloroethane	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Chloroform	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Chloromethane	ND	0.087		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
2-Chlorotoluene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
4-Chlorotoluene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
cis-1,2-DCE	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
cis-1,3-Dichloropropene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Dibromochloromethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Dibromomethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2-Dichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (15-16')
Project: French Drain **Collection Date:** 10/20/2022 11:10:00 AM
Lab ID: 2210B61-014 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,4-Dichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Dichlorodifluoromethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,1-Dichloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,1-Dichloroethene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2-Dichloropropane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,3-Dichloropropane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
2,2-Dichloropropane	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,1-Dichloropropene	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Hexachlorobutadiene	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
2-Hexanone	ND	0.29		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Isopropylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
4-Isopropyltoluene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
4-Methyl-2-pentanone	ND	0.29		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Methylene chloride	ND	0.087		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
n-Butylbenzene	ND	0.087		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
n-Propylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
sec-Butylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Styrene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
tert-Butylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Tetrachloroethene (PCE)	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
trans-1,2-DCE	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
trans-1,3-Dichloropropene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2,3-Trichlorobenzene	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2,4-Trichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,1,1-Trichloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,1,2-Trichloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Trichloroethene (TCE)	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Trichlorofluoromethane	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
1,2,3-Trichloropropane	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Vinyl chloride	ND	0.029		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Xylenes, Total	ND	0.058		mg/Kg	1	10/25/2022 10:30:33 PM	R92067
Surr: Dibromofluoromethane	107	70-130		%Rec	1	10/25/2022 10:30:33 PM	R92067
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	10/25/2022 10:30:33 PM	R92067
Surr: Toluene-d8	106	70-130		%Rec	1	10/25/2022 10:30:33 PM	R92067
Surr: 4-Bromofluorobenzene	92.5	70-130		%Rec	1	10/25/2022 10:30:33 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-6 (15-16')
Project: French Drain
Collection Date: 10/20/2022 11:10:00 AM
Lab ID: 2210B61-014
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.32			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (18-19')
Project: French Drain **Collection Date:** 10/20/2022 11:11:00 AM
Lab ID: 2210B61-015 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	15		mg/Kg	1	11/2/2022 4:30:07 PM	71197
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/2/2022 4:30:07 PM	71197
Surr: DNOP	100	21-129		%Rec	1	11/2/2022 4:30:07 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	2.9		mg/Kg	1	10/27/2022 1:16:00 AM	B92099
Surr: BFB	96.5	37.7-212		%Rec	1	10/27/2022 1:16:00 AM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Acenaphthylene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Aniline	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Anthracene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Azobenzene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Benz(a)anthracene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Benzo(g,h,i)perylene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Benzoic acid	ND	0.98		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Benzyl alcohol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Bis(2-chloroethoxy)methane	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Bis(2-chloroethyl)ether	ND	0.29		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.29		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	11/8/2022 5:17:53 AM	71142
4-Bromophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Butyl benzyl phthalate	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Carbazole	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	11/8/2022 5:17:53 AM	71142
4-Chloroaniline	ND	0.49		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2-Chloronaphthalene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2-Chlorophenol	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
4-Chlorophenyl phenyl ether	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Chrysene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Di-n-butyl phthalate	ND	0.98		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Dibenzofuran	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
1,2-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
1,3-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (18-19')
Project: French Drain **Collection Date:** 10/20/2022 11:11:00 AM
Lab ID: 2210B61-015 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
3,3´-Dichlorobenzidine	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Diethyl phthalate	ND	2.9		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Dimethyl phthalate	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2,4-Dimethylphenol	ND	0.29		mg/Kg	1	11/8/2022 5:17:53 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2,4-Dinitrophenol	ND	0.49		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Fluoranthene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Fluorene	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Hexachlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Hexachlorobutadiene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Hexachloroethane	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Isophorone	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
1-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2-Methylnaphthalene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2-Methylphenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
3+4-Methylphenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
N-Nitrosodi-n-propylamine	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
N-Nitrosodimethylamine	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Naphthalene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2-Nitroaniline	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
3-Nitroaniline	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
4-Nitroaniline	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Nitrobenzene	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2-Nitrophenol	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
4-Nitrophenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Pentachlorophenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Phenanthrene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Phenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Pyrene	ND	0.20		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Pyridine	ND	2.0		mg/Kg	1	11/8/2022 5:17:53 AM	71142
1,2,4-Trichlorobenzene	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142
2,4,5-Trichlorophenol	ND	0.25		mg/Kg	1	11/8/2022 5:17:53 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (18-19')
Project: French Drain **Collection Date:** 10/20/2022 11:11:00 AM
Lab ID: 2210B61-015 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.39		mg/Kg	1	11/8/2022 5:17:53 AM	71142
Surr: 2-Fluorophenol	51.9	23.5-70.2		%Rec	1	11/8/2022 5:17:53 AM	71142
Surr: Phenol-d5	63.5	28.3-80		%Rec	1	11/8/2022 5:17:53 AM	71142
Surr: 2,4,6-Tribromophenol	67.9	33.8-106		%Rec	1	11/8/2022 5:17:53 AM	71142
Surr: Nitrobenzene-d5	55.2	19.5-72.3		%Rec	1	11/8/2022 5:17:53 AM	71142
Surr: 2-Fluorobiphenyl	59.3	21.1-76.5		%Rec	1	11/8/2022 5:17:53 AM	71142
Surr: 4-Terphenyl-d14	84.8	70-109		%Rec	1	11/8/2022 5:17:53 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.014		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Toluene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Ethylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2,4-Trimethylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,3,5-Trimethylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Naphthalene	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
2-Methylnaphthalene	ND	0.12		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Acetone	ND	0.43		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Bromobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Bromodichloromethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Bromoform	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Bromomethane	ND	0.086		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
2-Butanone	ND	0.29		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Carbon disulfide	ND	0.29		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Carbon tetrachloride	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Chlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Chloroethane	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Chloroform	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Chloromethane	ND	0.086		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
2-Chlorotoluene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
4-Chlorotoluene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
cis-1,2-DCE	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
cis-1,3-Dichloropropene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Dibromochloromethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Dibromomethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2-Dichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-6 (18-19')
Project: French Drain **Collection Date:** 10/20/2022 11:11:00 AM
Lab ID: 2210B61-015 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,4-Dichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Dichlorodifluoromethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,1-Dichloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,1-Dichloroethene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2-Dichloropropane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,3-Dichloropropane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
2,2-Dichloropropane	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,1-Dichloropropene	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Hexachlorobutadiene	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
2-Hexanone	ND	0.29		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Isopropylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
4-Isopropyltoluene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
4-Methyl-2-pentanone	ND	0.29		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Methylene chloride	ND	0.086		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
n-Butylbenzene	ND	0.086		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
n-Propylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
sec-Butylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Styrene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
tert-Butylbenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Tetrachloroethene (PCE)	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
trans-1,2-DCE	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
trans-1,3-Dichloropropene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2,3-Trichlorobenzene	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2,4-Trichlorobenzene	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,1,1-Trichloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,1,2-Trichloroethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Trichloroethene (TCE)	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Trichlorofluoromethane	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
1,2,3-Trichloropropane	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Vinyl chloride	ND	0.029		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Xylenes, Total	ND	0.058		mg/Kg	1	10/25/2022 10:57:31 PM	R92067
Surr: Dibromofluoromethane	113	70-130		%Rec	1	10/25/2022 10:57:31 PM	R92067
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	1	10/25/2022 10:57:31 PM	R92067
Surr: Toluene-d8	111	70-130		%Rec	1	10/25/2022 10:57:31 PM	R92067
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	10/25/2022 10:57:31 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-6 (18-19')
Project: French Drain
Collection Date: 10/20/2022 11:11:00 AM
Lab ID: 2210B61-015
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.59			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-8 (9-10')
Project: French Drain **Collection Date:** 10/20/2022 2:30:00 PM
Lab ID: 2210B61-016 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	11/2/2022 4:54:21 PM	71197
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	11/2/2022 4:54:21 PM	71197
Surr: DNOP	102	21-129		%Rec	1	11/2/2022 4:54:21 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	53	2.6		mg/Kg	1	10/27/2022 1:39:31 AM	B92099
Surr: BFB	588	37.7-212	S	%Rec	1	10/27/2022 1:39:31 AM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Acenaphthylene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Aniline	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Anthracene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Azobenzene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Benz(a)anthracene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Benzo(a)pyrene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Benzo(b)fluoranthene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Benzo(g,h,i)perylene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Benzo(k)fluoranthene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Benzoic acid	ND	0.86		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Benzyl alcohol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Bis(2-chloroethoxy)methane	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Bis(2-chloroethyl)ether	ND	0.26		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.26		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.43		mg/Kg	1	11/8/2022 5:58:24 AM	71142
4-Bromophenyl phenyl ether	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Butyl benzyl phthalate	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Carbazole	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
4-Chloro-3-methylphenol	ND	0.43		mg/Kg	1	11/8/2022 5:58:24 AM	71142
4-Chloroaniline	ND	0.43		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2-Chloronaphthalene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2-Chlorophenol	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
4-Chlorophenyl phenyl ether	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Chrysene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Di-n-butyl phthalate	ND	0.86		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Di-n-octyl phthalate	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Dibenz(a,h)anthracene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Dibenzofuran	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
1,2-Dichlorobenzene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
1,3-Dichlorobenzene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-8 (9-10')
Project: French Drain **Collection Date:** 10/20/2022 2:30:00 PM
Lab ID: 2210B61-016 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
3,3´-Dichlorobenzidine	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Diethyl phthalate	ND	2.6		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Dimethyl phthalate	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2,4-Dichlorophenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2,4-Dimethylphenol	ND	0.26		mg/Kg	1	11/8/2022 5:58:24 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2,4-Dinitrophenol	ND	0.43		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2,4-Dinitrotoluene	ND	0.43		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2,6-Dinitrotoluene	ND	0.43		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Fluoranthene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Fluorene	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Hexachlorobenzene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Hexachlorobutadiene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Hexachlorocyclopentadiene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Hexachloroethane	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Isophorone	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
1-Methylnaphthalene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2-Methylnaphthalene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2-Methylphenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
3+4-Methylphenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
N-Nitrosodi-n-propylamine	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
N-Nitrosodimethylamine	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
N-Nitrosodiphenylamine	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Naphthalene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2-Nitroaniline	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
3-Nitroaniline	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
4-Nitroaniline	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Nitrobenzene	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2-Nitrophenol	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
4-Nitrophenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Pentachlorophenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Phenanthrene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Phenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Pyrene	ND	0.17		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Pyridine	ND	1.7		mg/Kg	1	11/8/2022 5:58:24 AM	71142
1,2,4-Trichlorobenzene	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142
2,4,5-Trichlorophenol	ND	0.21		mg/Kg	1	11/8/2022 5:58:24 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-8 (9-10')
Project: French Drain **Collection Date:** 10/20/2022 2:30:00 PM
Lab ID: 2210B61-016 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.34		mg/Kg	1	11/8/2022 5:58:24 AM	71142
Surr: 2-Fluorophenol	41.9	23.5-70.2		%Rec	1	11/8/2022 5:58:24 AM	71142
Surr: Phenol-d5	47.0	28.3-80		%Rec	1	11/8/2022 5:58:24 AM	71142
Surr: 2,4,6-Tribromophenol	46.9	33.8-106		%Rec	1	11/8/2022 5:58:24 AM	71142
Surr: Nitrobenzene-d5	44.9	19.5-72.3		%Rec	1	11/8/2022 5:58:24 AM	71142
Surr: 2-Fluorobiphenyl	43.6	21.1-76.5		%Rec	1	11/8/2022 5:58:24 AM	71142
Surr: 4-Terphenyl-d14	56.9	70-109	S	%Rec	1	11/8/2022 5:58:24 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	0.059	0.013		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Toluene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Ethylbenzene	0.28	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2,4-Trimethylbenzene	0.89	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,3,5-Trimethylbenzene	0.33	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Naphthalene	0.058	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1-Methylnaphthalene	ND	0.10		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
2-Methylnaphthalene	ND	0.10		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Acetone	ND	0.39		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Bromobenzene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Bromodichloromethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Bromoform	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Bromomethane	ND	0.077		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
2-Butanone	ND	0.26		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Carbon disulfide	ND	0.26		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Carbon tetrachloride	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Chlorobenzene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Chloroethane	ND	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Chloroform	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Chloromethane	ND	0.077		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
2-Chlorotoluene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
4-Chlorotoluene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
cis-1,2-DCE	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
cis-1,3-Dichloropropene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Dibromochloromethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Dibromomethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2-Dichlorobenzene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-8 (9-10')
Project: French Drain **Collection Date:** 10/20/2022 2:30:00 PM
Lab ID: 2210B61-016 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,4-Dichlorobenzene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Dichlorodifluoromethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,1-Dichloroethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,1-Dichloroethene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2-Dichloropropane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,3-Dichloropropane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
2,2-Dichloropropane	ND	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,1-Dichloropropene	ND	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Hexachlorobutadiene	ND	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
2-Hexanone	ND	0.26		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Isopropylbenzene	0.11	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
4-Isopropyltoluene	0.073	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
4-Methyl-2-pentanone	ND	0.26		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Methylene chloride	ND	0.077		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
n-Butylbenzene	0.086	0.077		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
n-Propylbenzene	0.17	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
sec-Butylbenzene	0.077	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Styrene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
tert-Butylbenzene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Tetrachloroethene (PCE)	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
trans-1,2-DCE	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
trans-1,3-Dichloropropene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2,3-Trichlorobenzene	ND	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2,4-Trichlorobenzene	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,1,1-Trichloroethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,1,2-Trichloroethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Trichloroethene (TCE)	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Trichlorofluoromethane	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
1,2,3-Trichloropropane	ND	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Vinyl chloride	ND	0.026		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Xylenes, Total	1.7	0.051		mg/Kg	1	10/25/2022 11:24:34 PM	R92067
Surr: Dibromofluoromethane	98.0	70-130		%Rec	1	10/25/2022 11:24:34 PM	R92067
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	10/25/2022 11:24:34 PM	R92067
Surr: Toluene-d8	112	70-130		%Rec	1	10/25/2022 11:24:34 PM	R92067
Surr: 4-Bromofluorobenzene	132	70-130	S	%Rec	1	10/25/2022 11:24:34 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-8 (9-10')
Project: French Drain
Collection Date: 10/20/2022 2:30:00 PM
Lab ID: 2210B61-016
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.65			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-8 (19-19.8')
Project: French Drain **Collection Date:** 10/20/2022 3:32:00 PM
Lab ID: 2210B61-017 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	13		mg/Kg	1	11/2/2022 5:18:44 PM	71197
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/2/2022 5:18:44 PM	71197
Surr: DNOP	105	21-129		%Rec	1	11/2/2022 5:18:44 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	2.4		mg/Kg	1	10/27/2022 2:03:02 AM	B92099
Surr: BFB	106	37.7-212		%Rec	1	10/27/2022 2:03:02 AM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Acenaphthylene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Aniline	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Anthracene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Azobenzene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Benz(a)anthracene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Benzo(a)pyrene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Benzo(b)fluoranthene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Benzo(g,h,i)perylene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Benzo(k)fluoranthene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Benzoic acid	ND	1.4		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Benzyl alcohol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Bis(2-chloroethoxy)methane	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Bis(2-chloroethyl)ether	ND	0.43		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Bis(2-chloroisopropyl)ether	ND	0.43		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Bis(2-ethylhexyl)phthalate	ND	0.72		mg/Kg	1	11/8/2022 6:39:37 AM	71142
4-Bromophenyl phenyl ether	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Butyl benzyl phthalate	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Carbazole	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
4-Chloro-3-methylphenol	ND	0.72		mg/Kg	1	11/8/2022 6:39:37 AM	71142
4-Chloroaniline	ND	0.72		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2-Chloronaphthalene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2-Chlorophenol	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
4-Chlorophenyl phenyl ether	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Chrysene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Di-n-butyl phthalate	ND	1.4		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Di-n-octyl phthalate	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Dibenz(a,h)anthracene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Dibenzofuran	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
1,2-Dichlorobenzene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
1,3-Dichlorobenzene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-8 (19-19.8')
Project: French Drain
Collection Date: 10/20/2022 3:32:00 PM
Lab ID: 2210B61-017
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
3,3´-Dichlorobenzidine	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Diethyl phthalate	ND	4.3		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Dimethyl phthalate	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2,4-Dichlorophenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2,4-Dimethylphenol	ND	0.43		mg/Kg	1	11/8/2022 6:39:37 AM	71142
4,6-Dinitro-2-methylphenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2,4-Dinitrophenol	ND	0.72		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2,4-Dinitrotoluene	ND	0.72		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2,6-Dinitrotoluene	ND	0.72		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Fluoranthene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Fluorene	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Hexachlorobenzene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Hexachlorobutadiene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Hexachlorocyclopentadiene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Hexachloroethane	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Indeno(1,2,3-cd)pyrene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Isophorone	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
1-Methylnaphthalene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2-Methylnaphthalene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2-Methylphenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
3+4-Methylphenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
N-Nitrosodi-n-propylamine	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
N-Nitrosodimethylamine	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
N-Nitrosodiphenylamine	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Naphthalene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2-Nitroaniline	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
3-Nitroaniline	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
4-Nitroaniline	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Nitrobenzene	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2-Nitrophenol	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
4-Nitrophenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Pentachlorophenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Phenanthrene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Phenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Pyrene	ND	0.29		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Pyridine	ND	2.9		mg/Kg	1	11/8/2022 6:39:37 AM	71142
1,2,4-Trichlorobenzene	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142
2,4,5-Trichlorophenol	ND	0.36		mg/Kg	1	11/8/2022 6:39:37 AM	71142

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-8 (19-19.8')
Project: French Drain **Collection Date:** 10/20/2022 3:32:00 PM
Lab ID: 2210B61-017 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.57		mg/Kg	1	11/8/2022 6:39:37 AM	71142
Surr: 2-Fluorophenol	56.7	23.5-70.2		%Rec	1	11/8/2022 6:39:37 AM	71142
Surr: Phenol-d5	60.8	28.3-80		%Rec	1	11/8/2022 6:39:37 AM	71142
Surr: 2,4,6-Tribromophenol	61.5	33.8-106		%Rec	1	11/8/2022 6:39:37 AM	71142
Surr: Nitrobenzene-d5	57.0	19.5-72.3		%Rec	1	11/8/2022 6:39:37 AM	71142
Surr: 2-Fluorobiphenyl	55.4	21.1-76.5		%Rec	1	11/8/2022 6:39:37 AM	71142
Surr: 4-Terphenyl-d14	69.1	70-109	S	%Rec	1	11/8/2022 6:39:37 AM	71142
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.012		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Toluene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Ethylbenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2,4-Trimethylbenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,3,5-Trimethylbenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2-Dichloroethane (EDC)	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2-Dibromoethane (EDB)	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Naphthalene	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1-Methylnaphthalene	ND	0.096		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
2-Methylnaphthalene	ND	0.096		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Acetone	ND	0.36		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Bromobenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Bromodichloromethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Bromoform	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Bromomethane	ND	0.072		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
2-Butanone	ND	0.24		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Carbon disulfide	ND	0.24		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Carbon tetrachloride	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Chlorobenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Chloroethane	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Chloroform	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Chloromethane	ND	0.072		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
2-Chlorotoluene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
4-Chlorotoluene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
cis-1,2-DCE	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
cis-1,3-Dichloropropene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2-Dibromo-3-chloropropane	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Dibromochloromethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Dibromomethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2-Dichlorobenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-8 (19-19.8')
Project: French Drain **Collection Date:** 10/20/2022 3:32:00 PM
Lab ID: 2210B61-017 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,4-Dichlorobenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Dichlorodifluoromethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,1-Dichloroethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,1-Dichloroethene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2-Dichloropropane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,3-Dichloropropane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
2,2-Dichloropropane	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,1-Dichloropropene	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Hexachlorobutadiene	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
2-Hexanone	ND	0.24		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Isopropylbenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
4-Isopropyltoluene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
4-Methyl-2-pentanone	ND	0.24		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Methylene chloride	ND	0.072		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
n-Butylbenzene	ND	0.072		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
n-Propylbenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
sec-Butylbenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Styrene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
tert-Butylbenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,1,1,2-Tetrachloroethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,1,2,2-Tetrachloroethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Tetrachloroethene (PCE)	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
trans-1,2-DCE	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
trans-1,3-Dichloropropene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2,3-Trichlorobenzene	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2,4-Trichlorobenzene	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,1,1-Trichloroethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,1,2-Trichloroethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Trichloroethene (TCE)	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Trichlorofluoromethane	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
1,2,3-Trichloropropane	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Vinyl chloride	ND	0.024		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Xylenes, Total	ND	0.048		mg/Kg	1	10/25/2022 11:51:32 PM	R92067
Surr: Dibromofluoromethane	110	70-130		%Rec	1	10/25/2022 11:51:32 PM	R92067
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	10/25/2022 11:51:32 PM	R92067
Surr: Toluene-d8	110	70-130		%Rec	1	10/25/2022 11:51:32 PM	R92067
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	10/25/2022 11:51:32 PM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-8 (19-19.8')
Project: French Drain
Collection Date: 10/20/2022 3:32:00 PM
Lab ID: 2210B61-017
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	9.14			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-102122
Project: French Drain **Collection Date:** 10/21/2022 11:58:00 AM
Lab ID: 2210B61-018 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/25/2022 12:06:35 AM	71028
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/25/2022 12:06:35 AM	71028
Surr: DNOP	77.5	43.2-147		%Rec	1	10/25/2022 12:06:35 AM	71028
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/28/2022 2:12:12 AM	C92145
Surr: BFB	92.3	70-130		%Rec	1	10/28/2022 2:12:12 AM	C92145
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Acenaphthylene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Aniline	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Anthracene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Azobenzene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Benz(a)anthracene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
Benzo(a)pyrene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Benzo(b)fluoranthene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Benzo(g,h,i)perylene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
Benzo(k)fluoranthene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Benzoic acid	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
Benzyl alcohol	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Bis(2-chloroisopropyl)ether	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Butyl benzyl phthalate	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Carbazole	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
4-Chloro-3-methylphenol	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
4-Chloroaniline	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2-Chloronaphthalene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
2-Chlorophenol	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Chrysene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Di-n-butyl phthalate	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Di-n-octyl phthalate	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Dibenzofuran	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
1,2-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
1,3-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB01-102122
Project: French Drain
Collection Date: 10/21/2022 11:58:00 AM
Lab ID: 2210B61-018 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
3,3´-Dichlorobenzidine	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Diethyl phthalate	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Dimethyl phthalate	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
2,4-Dichlorophenol	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2,4-Dimethylphenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
4,6-Dinitro-2-methylphenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
2,4-Dinitrophenol	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
2,4-Dinitrotoluene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2,6-Dinitrotoluene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Fluoranthene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Fluorene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Hexachlorobenzene	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
Hexachlorobutadiene	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
Hexachlorocyclopentadiene	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
Hexachloroethane	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Isophorone	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
1-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2-Methylnaphthalene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2-Methylphenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
3+4-Methylphenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
N-Nitrosodi-n-propylamine	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
N-Nitrosodimethylamine	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Naphthalene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2-Nitroaniline	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
3-Nitroaniline	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
4-Nitroaniline	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
Nitrobenzene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2-Nitrophenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
4-Nitrophenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Pentachlorophenol	ND	40		µg/L	1	10/31/2022 2:39:11 PM	71071
Phenanthrene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Phenol	ND	20		µg/L	1	10/31/2022 2:39:11 PM	71071
Pyrene	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Pyridine	ND	40		µg/L	1	10/31/2022 2:39:11 PM	71071
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	10/31/2022 2:39:11 PM	71071
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** EB01-102122
Project: French Drain **Collection Date:** 10/21/2022 11:58:00 AM
Lab ID: 2210B61-018 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/31/2022 2:39:11 PM	71071
Surr: 2-Fluorophenol	41.9	15-84.5		%Rec	1	10/31/2022 2:39:11 PM	71071
Surr: Phenol-d5	31.9	15-67		%Rec	1	10/31/2022 2:39:11 PM	71071
Surr: 2,4,6-Tribromophenol	64.2	15-108		%Rec	1	10/31/2022 2:39:11 PM	71071
Surr: Nitrobenzene-d5	56.1	16.8-112		%Rec	1	10/31/2022 2:39:11 PM	71071
Surr: 2-Fluorobiphenyl	52.6	15-101		%Rec	1	10/31/2022 2:39:11 PM	71071
Surr: 4-Terphenyl-d14	76.2	34.4-134		%Rec	1	10/31/2022 2:39:11 PM	71071
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
Benzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Toluene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Ethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Naphthalene	ND	2.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
2-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Acetone	ND	10		µg/L	1	10/28/2022 5:58:54 PM	R92188
Bromobenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Bromodichloromethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Bromoform	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Bromomethane	ND	3.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
2-Butanone	ND	10		µg/L	1	10/28/2022 5:58:54 PM	R92188
Carbon disulfide	ND	10		µg/L	1	10/28/2022 5:58:54 PM	R92188
Carbon Tetrachloride	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Chlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Chloroethane	ND	2.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Chloroform	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Chloromethane	ND	3.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
2-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
4-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
cis-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Dibromochloromethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Dibromomethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: EB01-102122
Project: French Drain
Collection Date: 10/21/2022 11:58:00 AM
Lab ID: 2210B61-018 **Matrix:** AQUEOUS **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,1-Dichloroethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,1-Dichloroethene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,3-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
2,2-Dichloropropane	ND	2.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,1-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Hexachlorobutadiene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
2-Hexanone	ND	10		µg/L	1	10/28/2022 5:58:54 PM	R92188
Isopropylbenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
4-Isopropyltoluene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
4-Methyl-2-pentanone	ND	10		µg/L	1	10/28/2022 5:58:54 PM	R92188
Methylene Chloride	ND	3.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
n-Butylbenzene	ND	3.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
n-Propylbenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
sec-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Styrene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
tert-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
trans-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Trichlorofluoromethane	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Vinyl chloride	ND	1.0		µg/L	1	10/28/2022 5:58:54 PM	R92188
Xylenes, Total	ND	1.5		µg/L	1	10/28/2022 5:58:54 PM	R92188
Surr: 1,2-Dichloroethane-d4	87.2	70-130		%Rec	1	10/28/2022 5:58:54 PM	R92188
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	10/28/2022 5:58:54 PM	R92188
Surr: Dibromofluoromethane	102	70-130		%Rec	1	10/28/2022 5:58:54 PM	R92188
Surr: Toluene-d8	106	70-130		%Rec	1	10/28/2022 5:58:54 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-10 (5.2-6.2')
Project: French Drain **Collection Date:** 10/20/2022 4:10:00 PM
Lab ID: 2210B61-019 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	21	13		mg/Kg	1	11/2/2022 5:42:57 PM	71197
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	11/2/2022 5:42:57 PM	71197
Surr: DNOP	95.6	21-129		%Rec	1	11/2/2022 5:42:57 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	740	15		mg/Kg	5	10/26/2022 2:01:45 AM	R92062
Surr: BFB	817	37.7-212	S	%Rec	5	10/26/2022 2:01:45 AM	R92062
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Acenaphthylene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Aniline	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Anthracene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Azobenzene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Benz(a)anthracene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Benzo(a)pyrene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Benzo(g,h,i)perylene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Benzoic acid	ND	0.98		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Benzyl alcohol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Bis(2-chloroethoxy)methane	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Bis(2-chloroethyl)ether	ND	0.29		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Bis(2-chloroisopropyl)ether	ND	0.29		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	11/7/2022 4:46:26 PM	71240
4-Bromophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Butyl benzyl phthalate	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Carbazole	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	11/7/2022 4:46:26 PM	71240
4-Chloroaniline	ND	0.49		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2-Chloronaphthalene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2-Chlorophenol	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
4-Chlorophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Chrysene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Di-n-butyl phthalate	ND	0.98		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Dibenzofuran	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
1,2-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
1,3-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-10 (5.2-6.2')
Project: French Drain
Collection Date: 10/20/2022 4:10:00 PM
Lab ID: 2210B61-019
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
3,3´-Dichlorobenzidine	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Diethyl phthalate	ND	2.9		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Dimethyl phthalate	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2,4-Dimethylphenol	ND	0.29		mg/Kg	1	11/7/2022 4:46:26 PM	71240
4,6-Dinitro-2-methylphenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2,4-Dinitrophenol	ND	0.49		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Fluoranthene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Fluorene	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Hexachlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Hexachlorobutadiene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Hexachloroethane	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Isophorone	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
1-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2-Methylphenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
3+4-Methylphenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
N-Nitrosodi-n-propylamine	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
N-Nitrosodimethylamine	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Naphthalene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2-Nitroaniline	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
3-Nitroaniline	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
4-Nitroaniline	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Nitrobenzene	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2-Nitrophenol	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
4-Nitrophenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Pentachlorophenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Phenanthrene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Phenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Pyrene	ND	0.20		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Pyridine	ND	2.0		mg/Kg	1	11/7/2022 4:46:26 PM	71240
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240
2,4,5-Trichlorophenol	ND	0.24		mg/Kg	1	11/7/2022 4:46:26 PM	71240

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-10 (5.2-6.2')
Project: French Drain **Collection Date:** 10/20/2022 4:10:00 PM
Lab ID: 2210B61-019 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.39		mg/Kg	1	11/7/2022 4:46:26 PM	71240
Surr: 2-Fluorophenol	62.8	23.5-70.2		%Rec	1	11/7/2022 4:46:26 PM	71240
Surr: Phenol-d5	74.3	28.3-80		%Rec	1	11/7/2022 4:46:26 PM	71240
Surr: 2,4,6-Tribromophenol	81.4	33.8-106		%Rec	1	11/7/2022 4:46:26 PM	71240
Surr: Nitrobenzene-d5	62.0	19.5-72.3		%Rec	1	11/7/2022 4:46:26 PM	71240
Surr: 2-Fluorobiphenyl	65.8	21.1-76.5		%Rec	1	11/7/2022 4:46:26 PM	71240
Surr: 4-Terphenyl-d14	81.1	70-109		%Rec	1	11/7/2022 4:46:26 PM	71240
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	0.97	0.077	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Toluene	7.8	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Ethylbenzene	4.5	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2,4-Trimethylbenzene	8.5	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,3,5-Trimethylbenzene	3.1	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2-Dichloroethane (EDC)	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2-Dibromoethane (EDB)	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Naphthalene	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1-Methylnaphthalene	ND	0.61	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
2-Methylnaphthalene	ND	0.61	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Acetone	ND	2.3	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Bromobenzene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Bromodichloromethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Bromoform	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Bromomethane	ND	0.46	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
2-Butanone	ND	1.5	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Carbon disulfide	ND	1.5	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Carbon tetrachloride	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Chlorobenzene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Chloroethane	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Chloroform	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Chloromethane	ND	0.46	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
2-Chlorotoluene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
4-Chlorotoluene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
cis-1,2-DCE	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
cis-1,3-Dichloropropene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2-Dibromo-3-chloropropane	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Dibromochloromethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Dibromomethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2-Dichlorobenzene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-10 (5.2-6.2')
Project: French Drain **Collection Date:** 10/20/2022 4:10:00 PM
Lab ID: 2210B61-019 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,4-Dichlorobenzene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Dichlorodifluoromethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,1-Dichloroethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,1-Dichloroethene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2-Dichloropropane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,3-Dichloropropane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
2,2-Dichloropropane	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,1-Dichloropropene	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Hexachlorobutadiene	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
2-Hexanone	ND	1.5	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Isopropylbenzene	1.6	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
4-Isopropyltoluene	0.68	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
4-Methyl-2-pentanone	ND	1.5	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Methylene chloride	ND	0.46	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
n-Butylbenzene	0.71	0.46	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
n-Propylbenzene	2.2	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
sec-Butylbenzene	0.80	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Styrene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
tert-Butylbenzene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,1,1,2-Tetrachloroethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,1,2,2-Tetrachloroethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Tetrachloroethene (PCE)	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
trans-1,2-DCE	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
trans-1,3-Dichloropropene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2,3-Trichlorobenzene	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2,4-Trichlorobenzene	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,1,1-Trichloroethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,1,2-Trichloroethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Trichloroethene (TCE)	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Trichlorofluoromethane	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
1,2,3-Trichloropropane	ND	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Vinyl chloride	ND	0.15	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Xylenes, Total	25	0.31	D	mg/Kg	5	10/26/2022 12:18:21 AM	R92067
Surr: Dibromofluoromethane	84.7	70-130	D	%Rec	5	10/26/2022 12:18:21 AM	R92067
Surr: 1,2-Dichloroethane-d4	91.2	70-130	D	%Rec	5	10/26/2022 12:18:21 AM	R92067
Surr: Toluene-d8	118	70-130	D	%Rec	5	10/26/2022 12:18:21 AM	R92067
Surr: 4-Bromofluorobenzene	128	70-130	D	%Rec	5	10/26/2022 12:18:21 AM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-10 (5.2-6.2')
Project: French Drain
Collection Date: 10/20/2022 4:10:00 PM
Lab ID: 2210B61-019
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	9.42			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-10 (19-20')
Project: French Drain **Collection Date:** 10/21/2022 8:46:00 AM
Lab ID: 2210B61-020 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	11		mg/Kg	1	11/2/2022 6:07:27 PM	71197
Motor Oil Range Organics (MRO)	ND	36		mg/Kg	1	11/2/2022 6:07:27 PM	71197
Surr: DNOP	105	21-129		%Rec	1	11/2/2022 6:07:27 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	10	2.4		mg/Kg	1	10/27/2022 2:26:23 AM	B92099
Surr: BFB	140	37.7-212		%Rec	1	10/27/2022 2:26:23 AM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Acenaphthylene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Aniline	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Anthracene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Azobenzene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Benz(a)anthracene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Benzo(a)pyrene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Benzo(b)fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Benzo(g,h,i)perylene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Benzo(k)fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Benzoic acid	ND	0.97		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Benzyl alcohol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Bis(2-chloroethoxy)methane	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Bis(2-chloroethyl)ether	ND	0.29		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Bis(2-chloroisopropyl)ether	ND	0.29		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Bis(2-ethylhexyl)phthalate	ND	0.48		mg/Kg	1	11/7/2022 6:50:46 PM	71240
4-Bromophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Butyl benzyl phthalate	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Carbazole	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
4-Chloro-3-methylphenol	ND	0.48		mg/Kg	1	11/7/2022 6:50:46 PM	71240
4-Chloroaniline	ND	0.48		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2-Chloronaphthalene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2-Chlorophenol	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
4-Chlorophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Chrysene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Di-n-butyl phthalate	ND	0.97		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Dibenz(a,h)anthracene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Dibenzofuran	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
1,2-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
1,3-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-10 (19-20')
Project: French Drain **Collection Date:** 10/21/2022 8:46:00 AM
Lab ID: 2210B61-020 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
3,3´-Dichlorobenzidine	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Diethyl phthalate	ND	2.9		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Dimethyl phthalate	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2,4-Dimethylphenol	ND	0.29		mg/Kg	1	11/7/2022 6:50:46 PM	71240
4,6-Dinitro-2-methylphenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2,4-Dinitrophenol	ND	0.48		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2,4-Dinitrotoluene	ND	0.48		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2,6-Dinitrotoluene	ND	0.48		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Fluorene	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Hexachlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Hexachlorobutadiene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Hexachlorocyclopentadiene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Hexachloroethane	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Indeno(1,2,3-cd)pyrene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Isophorone	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
1-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2-Methylphenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
3+4-Methylphenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
N-Nitrosodi-n-propylamine	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
N-Nitrosodimethylamine	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
N-Nitrosodiphenylamine	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Naphthalene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2-Nitroaniline	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
3-Nitroaniline	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
4-Nitroaniline	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Nitrobenzene	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2-Nitrophenol	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
4-Nitrophenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Pentachlorophenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Phenanthrene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Phenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Pyrene	ND	0.19		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Pyridine	ND	1.9		mg/Kg	1	11/7/2022 6:50:46 PM	71240
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240
2,4,5-Trichlorophenol	ND	0.24		mg/Kg	1	11/7/2022 6:50:46 PM	71240

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-10 (19-20')
Project: French Drain **Collection Date:** 10/21/2022 8:46:00 AM
Lab ID: 2210B61-020 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.39		mg/Kg	1	11/7/2022 6:50:46 PM	71240
Surr: 2-Fluorophenol	36.6	23.5-70.2		%Rec	1	11/7/2022 6:50:46 PM	71240
Surr: Phenol-d5	39.7	28.3-80		%Rec	1	11/7/2022 6:50:46 PM	71240
Surr: 2,4,6-Tribromophenol	50.0	33.8-106		%Rec	1	11/7/2022 6:50:46 PM	71240
Surr: Nitrobenzene-d5	38.9	19.5-72.3		%Rec	1	11/7/2022 6:50:46 PM	71240
Surr: 2-Fluorobiphenyl	35.4	21.1-76.5		%Rec	1	11/7/2022 6:50:46 PM	71240
Surr: 4-Terphenyl-d14	53.3	70-109	S	%Rec	1	11/7/2022 6:50:46 PM	71240
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	0.021	0.012		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Toluene	0.079	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Ethylbenzene	0.058	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2,4-Trimethylbenzene	0.11	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,3,5-Trimethylbenzene	0.044	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2-Dichloroethane (EDC)	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2-Dibromoethane (EDB)	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Naphthalene	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1-Methylnaphthalene	ND	0.097		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
2-Methylnaphthalene	ND	0.097		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Acetone	ND	0.36		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Bromobenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Bromodichloromethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Bromoform	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Bromomethane	ND	0.073		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
2-Butanone	ND	0.24		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Carbon disulfide	ND	0.24		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Carbon tetrachloride	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Chlorobenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Chloroethane	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Chloroform	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Chloromethane	ND	0.073		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
2-Chlorotoluene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
4-Chlorotoluene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
cis-1,2-DCE	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
cis-1,3-Dichloropropene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2-Dibromo-3-chloropropane	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Dibromochloromethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Dibromomethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2-Dichlorobenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-10 (19-20')
Project: French Drain **Collection Date:** 10/21/2022 8:46:00 AM
Lab ID: 2210B61-020 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,4-Dichlorobenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Dichlorodifluoromethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,1-Dichloroethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,1-Dichloroethene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2-Dichloropropane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,3-Dichloropropane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
2,2-Dichloropropane	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,1-Dichloropropene	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Hexachlorobutadiene	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
2-Hexanone	ND	0.24		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Isopropylbenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
4-Isopropyltoluene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
4-Methyl-2-pentanone	ND	0.24		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Methylene chloride	ND	0.073		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
n-Butylbenzene	ND	0.073		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
n-Propylbenzene	0.028	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
sec-Butylbenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Styrene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
tert-Butylbenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,1,1,2-Tetrachloroethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,1,2,2-Tetrachloroethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Tetrachloroethene (PCE)	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
trans-1,2-DCE	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
trans-1,3-Dichloropropene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2,3-Trichlorobenzene	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2,4-Trichlorobenzene	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,1,1-Trichloroethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,1,2-Trichloroethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Trichloroethene (TCE)	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Trichlorofluoromethane	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
1,2,3-Trichloropropane	ND	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Vinyl chloride	ND	0.024		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Xylenes, Total	0.33	0.049		mg/Kg	1	10/26/2022 12:45:21 AM	R92067
Surr: Dibromofluoromethane	101	70-130		%Rec	1	10/26/2022 12:45:21 AM	R92067
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	10/26/2022 12:45:21 AM	R92067
Surr: Toluene-d8	106	70-130		%Rec	1	10/26/2022 12:45:21 AM	R92067
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	10/26/2022 12:45:21 AM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Lab Order **2210B61**
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-10 (19-20')
Project: French Drain
Collection Date: 10/21/2022 8:46:00 AM
Lab ID: 2210B61-020
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	9.36			pH Units	1	11/22/2022 4:05:00 PM	R92777

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Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-12 (10-11')
Project: French Drain **Collection Date:** 10/21/2022 10:15:00 AM
Lab ID: 2210B61-021 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 6:31:40 PM	71197
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/2/2022 6:31:40 PM	71197
Surr: DNOP	106	21-129		%Rec	1	11/2/2022 6:31:40 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	10/27/2022 2:49:55 AM	B92099
Surr: BFB	103	37.7-212		%Rec	1	10/27/2022 2:49:55 AM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Acenaphthylene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Aniline	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Anthracene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Azobenzene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Benz(a)anthracene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Benzo(a)pyrene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Benzo(b)fluoranthene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Benzo(g,h,i)perylene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Benzo(k)fluoranthene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Benzoic acid	ND	9.8	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Benzyl alcohol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Bis(2-chloroethoxy)methane	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Bis(2-chloroethyl)ether	ND	2.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Bis(2-chloroisopropyl)ether	ND	2.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Bis(2-ethylhexyl)phthalate	ND	4.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
4-Bromophenyl phenyl ether	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Butyl benzyl phthalate	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Carbazole	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
4-Chloro-3-methylphenol	ND	4.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
4-Chloroaniline	ND	4.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2-Chloronaphthalene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2-Chlorophenol	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
4-Chlorophenyl phenyl ether	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Chrysene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Di-n-butyl phthalate	ND	9.8	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Di-n-octyl phthalate	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Dibenz(a,h)anthracene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Dibenzofuran	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
1,2-Dichlorobenzene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
1,3-Dichlorobenzene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240

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Lab ID: 2210B61-021 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
3,3´-Dichlorobenzidine	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Diethyl phthalate	ND	29	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Dimethyl phthalate	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2,4-Dichlorophenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2,4-Dimethylphenol	ND	2.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
4,6-Dinitro-2-methylphenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2,4-Dinitrophenol	ND	4.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2,4-Dinitrotoluene	ND	4.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2,6-Dinitrotoluene	ND	4.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Fluoranthene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Fluorene	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Hexachlorobenzene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Hexachlorobutadiene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Hexachlorocyclopentadiene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Hexachloroethane	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Indeno(1,2,3-cd)pyrene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Isophorone	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
1-Methylnaphthalene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2-Methylnaphthalene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2-Methylphenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
3+4-Methylphenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
N-Nitrosodi-n-propylamine	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
N-Nitrosodimethylamine	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
N-Nitrosodiphenylamine	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Naphthalene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2-Nitroaniline	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
3-Nitroaniline	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
4-Nitroaniline	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Nitrobenzene	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2-Nitrophenol	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
4-Nitrophenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Pentachlorophenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Phenanthrene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Phenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Pyrene	ND	2.0	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Pyridine	ND	20	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
1,2,4-Trichlorobenzene	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
2,4,5-Trichlorophenol	ND	2.4	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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CLIENT: Marathon **Client Sample ID:** FD-BH-12 (10-11')
Project: French Drain **Collection Date:** 10/21/2022 10:15:00 AM
Lab ID: 2210B61-021 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	3.9	D	mg/Kg	10	11/7/2022 7:32:17 PM	71240
Surr: 2-Fluorophenol	0	23.5-70.2	SD	%Rec	10	11/7/2022 7:32:17 PM	71240
Surr: Phenol-d5	0	28.3-80	SD	%Rec	10	11/7/2022 7:32:17 PM	71240
Surr: 2,4,6-Tribromophenol	0	33.8-106	SD	%Rec	10	11/7/2022 7:32:17 PM	71240
Surr: Nitrobenzene-d5	0	19.5-72.3	SD	%Rec	10	11/7/2022 7:32:17 PM	71240
Surr: 2-Fluorobiphenyl	0	21.1-76.5	SD	%Rec	10	11/7/2022 7:32:17 PM	71240
Surr: 4-Terphenyl-d14	0	70-109	SD	%Rec	10	11/7/2022 7:32:17 PM	71240
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.015		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Toluene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Ethylbenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2,4-Trimethylbenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,3,5-Trimethylbenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2-Dichloroethane (EDC)	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2-Dibromoethane (EDB)	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Naphthalene	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1-Methylnaphthalene	ND	0.12		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
2-Methylnaphthalene	ND	0.12		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Acetone	ND	0.46		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Bromobenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Bromodichloromethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Bromoform	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Bromomethane	ND	0.092		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
2-Butanone	ND	0.31		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Carbon disulfide	ND	0.31		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Carbon tetrachloride	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Chlorobenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Chloroethane	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Chloroform	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Chloromethane	ND	0.092		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
2-Chlorotoluene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
4-Chlorotoluene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
cis-1,2-DCE	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
cis-1,3-Dichloropropene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2-Dibromo-3-chloropropane	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Dibromochloromethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Dibromomethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2-Dichlorobenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067

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Lab ID: 2210B61-021 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

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EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,4-Dichlorobenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Dichlorodifluoromethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,1-Dichloroethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,1-Dichloroethene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2-Dichloropropane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,3-Dichloropropane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
2,2-Dichloropropane	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,1-Dichloropropene	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Hexachlorobutadiene	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
2-Hexanone	ND	0.31		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Isopropylbenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
4-Isopropyltoluene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
4-Methyl-2-pentanone	ND	0.31		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Methylene chloride	ND	0.092		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
n-Butylbenzene	ND	0.092		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
n-Propylbenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
sec-Butylbenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Styrene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
tert-Butylbenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,1,1,2-Tetrachloroethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,1,2,2-Tetrachloroethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Tetrachloroethene (PCE)	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
trans-1,2-DCE	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
trans-1,3-Dichloropropene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2,3-Trichlorobenzene	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2,4-Trichlorobenzene	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,1,1-Trichloroethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,1,2-Trichloroethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Trichloroethene (TCE)	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Trichlorofluoromethane	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
1,2,3-Trichloropropane	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Vinyl chloride	ND	0.031		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Xylenes, Total	ND	0.062		mg/Kg	1	10/26/2022 1:12:12 AM	R92067
Surr: Dibromofluoromethane	121	70-130		%Rec	1	10/26/2022 1:12:12 AM	R92067
Surr: 1,2-Dichloroethane-d4	116	70-130		%Rec	1	10/26/2022 1:12:12 AM	R92067
Surr: Toluene-d8	108	70-130		%Rec	1	10/26/2022 1:12:12 AM	R92067
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	10/26/2022 1:12:12 AM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-12 (10-11')
Project: French Drain
Collection Date: 10/21/2022 10:15:00 AM
Lab ID: 2210B61-021
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	8.86			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-11 (18-19')
Project: French Drain **Collection Date:** 10/21/2022 11:16:00 AM
Lab ID: 2210B61-022 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**	
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/2/2022 6:56:03 PM	71197
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/2/2022 6:56:03 PM	71197
Surr: DNOP	102	21-129		%Rec	1	11/2/2022 6:56:03 PM	71197
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	47	17		mg/Kg	5	10/27/2022 3:13:37 AM	B92099
Surr: BFB	160	37.7-212		%Rec	5	10/27/2022 3:13:37 AM	B92099
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
Acenaphthene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Acenaphthylene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Aniline	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Anthracene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Azobenzene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Benz(a)anthracene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Benzo(a)pyrene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Benzo(b)fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Benzo(g,h,i)perylene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Benzo(k)fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Benzoic acid	ND	0.96		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Benzyl alcohol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Bis(2-chloroethoxy)methane	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Bis(2-chloroethyl)ether	ND	0.29		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Bis(2-chloroisopropyl)ether	ND	0.29		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Bis(2-ethylhexyl)phthalate	ND	0.48		mg/Kg	1	11/7/2022 8:13:37 PM	71240
4-Bromophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Butyl benzyl phthalate	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Carbazole	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
4-Chloro-3-methylphenol	ND	0.48		mg/Kg	1	11/7/2022 8:13:37 PM	71240
4-Chloroaniline	ND	0.48		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2-Chloronaphthalene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2-Chlorophenol	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
4-Chlorophenyl phenyl ether	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Chrysene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Di-n-butyl phthalate	ND	0.96		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Di-n-octyl phthalate	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Dibenz(a,h)anthracene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Dibenzofuran	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
1,2-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
1,3-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-11 (18-19')
Project: French Drain **Collection Date:** 10/21/2022 11:16:00 AM
Lab ID: 2210B61-022 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
1,4-Dichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
3,3´-Dichlorobenzidine	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Diethyl phthalate	ND	2.9		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Dimethyl phthalate	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2,4-Dichlorophenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2,4-Dimethylphenol	ND	0.29		mg/Kg	1	11/7/2022 8:13:37 PM	71240
4,6-Dinitro-2-methylphenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2,4-Dinitrophenol	ND	0.48		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2,4-Dinitrotoluene	ND	0.48		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2,6-Dinitrotoluene	ND	0.48		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Fluoranthene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Fluorene	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Hexachlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Hexachlorobutadiene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Hexachlorocyclopentadiene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Hexachloroethane	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Indeno(1,2,3-cd)pyrene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Isophorone	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
1-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2-Methylnaphthalene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2-Methylphenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
3+4-Methylphenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
N-Nitrosodi-n-propylamine	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
N-Nitrosodimethylamine	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
N-Nitrosodiphenylamine	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Naphthalene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2-Nitroaniline	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
3-Nitroaniline	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
4-Nitroaniline	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Nitrobenzene	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2-Nitrophenol	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
4-Nitrophenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Pentachlorophenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Phenanthrene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Phenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Pyrene	ND	0.19		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Pyridine	ND	1.9		mg/Kg	1	11/7/2022 8:13:37 PM	71240
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240
2,4,5-Trichlorophenol	ND	0.24		mg/Kg	1	11/7/2022 8:13:37 PM	71240

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-11 (18-19')
Project: French Drain **Collection Date:** 10/21/2022 11:16:00 AM
Lab ID: 2210B61-022 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JME**	
2,4,6-Trichlorophenol	ND	0.38		mg/Kg	1	11/7/2022 8:13:37 PM	71240
Surr: 2-Fluorophenol	75.2	23.5-70.2	S	%Rec	1	11/7/2022 8:13:37 PM	71240
Surr: Phenol-d5	84.0	28.3-80	S	%Rec	1	11/7/2022 8:13:37 PM	71240
Surr: 2,4,6-Tribromophenol	88.2	33.8-106		%Rec	1	11/7/2022 8:13:37 PM	71240
Surr: Nitrobenzene-d5	70.6	19.5-72.3		%Rec	1	11/7/2022 8:13:37 PM	71240
Surr: 2-Fluorobiphenyl	75.0	21.1-76.5		%Rec	1	11/7/2022 8:13:37 PM	71240
Surr: 4-Terphenyl-d14	94.8	70-109		%Rec	1	11/7/2022 8:13:37 PM	71240
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.084	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Toluene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Ethylbenzene	0.23	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2,4-Trimethylbenzene	0.77	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,3,5-Trimethylbenzene	0.30	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2-Dichloroethane (EDC)	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2-Dibromoethane (EDB)	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Naphthalene	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1-Methylnaphthalene	ND	0.68	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
2-Methylnaphthalene	ND	0.68	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Acetone	ND	2.5	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Bromobenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Bromodichloromethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Bromoform	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Bromomethane	ND	0.51	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
2-Butanone	ND	1.7	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Carbon disulfide	ND	1.7	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Carbon tetrachloride	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Chlorobenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Chloroethane	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Chloroform	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Chloromethane	ND	0.51	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
2-Chlorotoluene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
4-Chlorotoluene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
cis-1,2-DCE	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
cis-1,3-Dichloropropene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2-Dibromo-3-chloropropane	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Dibromochloromethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Dibromomethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2-Dichlorobenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** FD-BH-11 (18-19')
Project: French Drain **Collection Date:** 10/21/2022 11:16:00 AM
Lab ID: 2210B61-022 **Matrix:** MEOH (SOIL) **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,3-Dichlorobenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,4-Dichlorobenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Dichlorodifluoromethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,1-Dichloroethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,1-Dichloroethene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2-Dichloropropane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,3-Dichloropropane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
2,2-Dichloropropane	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,1-Dichloropropene	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Hexachlorobutadiene	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
2-Hexanone	ND	1.7	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Isopropylbenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
4-Isopropyltoluene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
4-Methyl-2-pentanone	ND	1.7	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Methylene chloride	ND	0.51	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
n-Butylbenzene	ND	0.51	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
n-Propylbenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
sec-Butylbenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Styrene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
tert-Butylbenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,1,1,2-Tetrachloroethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,1,2,2-Tetrachloroethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Tetrachloroethene (PCE)	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
trans-1,2-DCE	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
trans-1,3-Dichloropropene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2,3-Trichlorobenzene	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2,4-Trichlorobenzene	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,1,1-Trichloroethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,1,2-Trichloroethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Trichloroethene (TCE)	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Trichlorofluoromethane	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
1,2,3-Trichloropropane	ND	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Vinyl chloride	ND	0.17	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Xylenes, Total	1.5	0.34	D	mg/Kg	5	10/26/2022 3:26:54 AM	R92067
Surr: Dibromofluoromethane	101	70-130	D	%Rec	5	10/26/2022 3:26:54 AM	R92067
Surr: 1,2-Dichloroethane-d4	108	70-130	D	%Rec	5	10/26/2022 3:26:54 AM	R92067
Surr: Toluene-d8	104	70-130	D	%Rec	5	10/26/2022 3:26:54 AM	R92067
Surr: 4-Bromofluorobenzene	101	70-130	D	%Rec	5	10/26/2022 3:26:54 AM	R92067
SM4500H+B/EPA 9040C						Analyst: **SNS**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon
Client Sample ID: FD-BH-11 (18-19')
Project: French Drain
Collection Date: 10/21/2022 11:16:00 AM
Lab ID: 2210B61-022
Matrix: MEOH (SOIL)
Received Date: 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM4500H+B/EPA 9040C						Analyst: **SNS**	
pH	9.14			pH Units	1	11/22/2022 4:05:00 PM	R92777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** Trip Blank
Project: French Drain **Collection Date:**
Lab ID: 2210B61-023 **Matrix:** TRIP BLANK **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
Benzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Toluene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Ethylbenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Naphthalene	ND	2.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
2-Methylnaphthalene	ND	4.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Acetone	ND	10		µg/L	1	10/28/2022 6:25:50 PM	R92188
Bromobenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Bromodichloromethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Bromoform	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Bromomethane	ND	3.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
2-Butanone	ND	10		µg/L	1	10/28/2022 6:25:50 PM	R92188
Carbon disulfide	ND	10		µg/L	1	10/28/2022 6:25:50 PM	R92188
Carbon Tetrachloride	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Chlorobenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Chloroethane	ND	2.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Chloroform	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Chloromethane	ND	3.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
2-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
4-Chlorotoluene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
cis-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Dibromochloromethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Dibromomethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,1-Dichloroethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,1-Dichloroethene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,3-Dichloropropane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
2,2-Dichloropropane	ND	2.0		µg/L	1	10/28/2022 6:25:50 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** Trip Blank
Project: French Drain **Collection Date:**
Lab ID: 2210B61-023 **Matrix:** TRIP BLANK **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JR**	
1,1-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Hexachlorobutadiene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
2-Hexanone	ND	10		µg/L	1	10/28/2022 6:25:50 PM	R92188
Isopropylbenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
4-Isopropyltoluene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
4-Methyl-2-pentanone	ND	10		µg/L	1	10/28/2022 6:25:50 PM	R92188
Methylene Chloride	ND	3.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
n-Butylbenzene	ND	3.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
n-Propylbenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
sec-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Styrene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
tert-Butylbenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
trans-1,2-DCE	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Trichlorofluoromethane	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Vinyl chloride	ND	1.0		µg/L	1	10/28/2022 6:25:50 PM	R92188
Xylenes, Total	ND	1.5		µg/L	1	10/28/2022 6:25:50 PM	R92188
Surr: 1,2-Dichloroethane-d4	99.3	70-130		%Rec	1	10/28/2022 6:25:50 PM	R92188
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	10/28/2022 6:25:50 PM	R92188
Surr: Dibromofluoromethane	105	70-130		%Rec	1	10/28/2022 6:25:50 PM	R92188
Surr: Toluene-d8	104	70-130		%Rec	1	10/28/2022 6:25:50 PM	R92188

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MeOH Blank
Project: French Drain **Collection Date:**
Lab ID: 2210B61-024 **Matrix:** MEOH BLAN **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Toluene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Ethylbenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Naphthalene	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Acetone	ND	0.75		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Bromobenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Bromodichloromethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Bromoform	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Bromomethane	ND	0.15		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
2-Butanone	ND	0.50		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Carbon disulfide	ND	0.50		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Carbon tetrachloride	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Chlorobenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Chloroethane	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Chloroform	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Chloromethane	ND	0.15		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Dibromochloromethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Dibromomethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,1-Dichloroethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210B61**
Date Reported: **11/29/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon **Client Sample ID:** MeOH Blank
Project: French Drain **Collection Date:**
Lab ID: 2210B61-024 **Matrix:** MEOH BLAN **Received Date:** 10/21/2022 4:00:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,1-Dichloropropene	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
2-Hexanone	ND	0.50		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Isopropylbenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Methylene chloride	ND	0.15		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
n-Butylbenzene	ND	0.15		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
n-Propylbenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Styrene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Vinyl chloride	ND	0.050		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Xylenes, Total	ND	0.10		mg/Kg	1	10/26/2022 3:53:49 AM	R92067
Surr: Dibromofluoromethane	103	70-130		%Rec	1	10/26/2022 3:53:49 AM	R92067
Surr: 1,2-Dichloroethane-d4	96.8	70-130		%Rec	1	10/26/2022 3:53:49 AM	R92067
Surr: Toluene-d8	115	70-130		%Rec	1	10/26/2022 3:53:49 AM	R92067
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	10/26/2022 3:53:49 AM	R92067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **MB-71044**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **71044**	RunNo: **92133**
Prep Date: **10/24/2022**	Analysis Date: **10/26/2022**	SeqNo: **3307322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.3	21	129			

Sample ID: **LCS-71044**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **71044**	RunNo: **92133**
Prep Date: **10/24/2022**	Analysis Date: **10/26/2022**	SeqNo: **3307323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	50.00	0	91.9	64.4	127			
Surr: DNOP	4.6		5.000		91.7	21	129			

Sample ID: **LCS-71197**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **71197**	RunNo: **92257**
Prep Date: **11/1/2022**	Analysis Date: **11/2/2022**	SeqNo: **3314009** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	15	50.00	0	76.6	64.4	127			
Surr: DNOP	3.8		5.000		75.8	21	129			

Sample ID: **MB-71197**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **71197**	RunNo: **92257**
Prep Date: **11/1/2022**	Analysis Date: **11/2/2022**	SeqNo: **3314010** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.3		10.00		83.0	21	129			

Sample ID: **2210B61-003AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BD01-101922**	Batch ID: **71197**	RunNo: **92257**
Prep Date: **11/1/2022**	Analysis Date: **11/2/2022**	SeqNo: **3314383** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	15	48.36	0	81.9	36.1	154			
Surr: DNOP	4.2		4.836		86.7	21	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **2210B61-003AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BD01-101922**	Batch ID: **71197**	RunNo: **92257**
Prep Date: **11/1/2022**	Analysis Date: **11/2/2022**	SeqNo: **3314384** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	14	47.57	0	84.6	36.1	154	1.63	33.9	
Surr: DNOP	4.3		4.757		89.6	21	129	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **R92062**	RunNo: **92062**							
Prep Date:	Analysis Date: **10/25/2022**	SeqNo: **3303713**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		93.5	37.7	212			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **R92062**	RunNo: **92062**							
Prep Date:	Analysis Date: **10/25/2022**	SeqNo: **3303714**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.2	72.3	137			
Surr: BFB	1900		1000		187	37.7	212			

Sample ID: **mb-II**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **R92062**	RunNo: **92062**							
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3303737**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	990		1000		99.3	37.7	212			

Sample ID: **2.5ug gro lcs-II**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **R92062**	RunNo: **92062**							
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3303738**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	72.3	137			
Surr: BFB	2100		1000		206	37.7	212			

Sample ID: **2210b61-003ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BD01-101922**	Batch ID: **R92062**	RunNo: **92062**							
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3303749**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.2	15.96	0	103	70	130			
Surr: BFB	1300		638.2		202	37.7	212			

Sample ID: **2210b61-003amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BD01-101922**	Batch ID: **R92062**	RunNo: **92062**							
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3303750**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **2210b61-003amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BD01-101922**	Batch ID: **R92062**	RunNo: **92062**							
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3303750**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.2	15.96	0	104	70	130	0.309	20	
Surr: BFB	1300		638.2		202	37.7	212	0	0	

Sample ID: **mb-II**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **B92099**	RunNo: **92099**							
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3305907**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.7	37.7	212			

Sample ID: **2.5ug gro lcs-II**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **B92099**	RunNo: **92099**							
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3305908**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.8	72.3	137			
Surr: BFB	1900		1000		192	37.7	212			

Sample ID: **2210b61-013ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **FD-BH-9 (13.75-14.75**	Batch ID: **B92099**	RunNo: **92099**							
Prep Date:	Analysis Date: **10/27/2022**	SeqNo: **3305918**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	2.7	13.63	0	94.6	70	130			
Surr: BFB	1100		545.3		193	37.7	212			

Sample ID: **2210b61-013amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **FD-BH-9 (13.75-14.75**	Batch ID: **B92099**	RunNo: **92099**							
Prep Date:	Analysis Date: **10/27/2022**	SeqNo: **3305919**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	12	2.7	13.63	0	89.8	70	130	5.16	20	
Surr: BFB	1000		545.3		187	37.7	212	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **mb-ll**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **C92099**	RunNo: **92099**
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3305920** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		90.7	70	130			

Sample ID: **2.5ug gro lcs-ll**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **C92099**	RunNo: **92099**
Prep Date:	Analysis Date: **10/26/2022**	SeqNo: **3305921** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.8	80	120			
Surr: BFB	38		20.00		192	70	130			S

Sample ID: **2210b61-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **FB01-101922**	Batch ID: **C92099**	RunNo: **92099**
Prep Date:	Analysis Date: **10/27/2022**	SeqNo: **3305923** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.3	70	130			
Surr: BFB	41		20.00		205	70	130			S

Sample ID: **2210b61-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **FB01-101922**	Batch ID: **C92099**	RunNo: **92099**
Prep Date:	Analysis Date: **10/27/2022**	SeqNo: **3305924** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.4	70	130	1.95	20	
Surr: BFB	40		20.00		200	70	130	0	0	S

Sample ID: **mb-ll**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **C92145**	RunNo: **92145**
Prep Date:	Analysis Date: **10/27/2022**	SeqNo: **3307763** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		95.0	70	130			

Sample ID: **2.5ug gro lcs-ll**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **C92145**	RunNo: **92145**
Prep Date:	Analysis Date: **10/27/2022**	SeqNo: **3307764** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **2.5ug gro lcs-ll**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **C92145**	RunNo: **92145**
Prep Date:	Analysis Date: **10/27/2022**	SeqNo: **3307764** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.4	80	120			
Surr: BFB	39		20.00		194	70	130			S

Sample ID: **2210b61-004ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **FB01-102022**	Batch ID: **C92145**	RunNo: **92145**
Prep Date:	Analysis Date: **10/28/2022**	SeqNo: **3307769** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.6	70	130			
Surr: BFB	39		20.00		194	70	130			S

Sample ID: **2210b61-004amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **FB01-102022**	Batch ID: **C92145**	RunNo: **92145**
Prep Date:	Analysis Date: **10/28/2022**	SeqNo: **3307770** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	93.2	70	130	1.49	20	
Surr: BFB	39		20.00		194	70	130	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R92067**	RunNo: **92067**
Prep Date:	Analysis Date: **10/25/2022**	SeqNo: **3304135** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	70	130			
Toluene	0.99	0.050	1.000	0	99.0	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	0.86	0.050	1.000	0	85.7	70	130			
Trichloroethene (TCE)	0.98	0.050	1.000	0	97.9	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: 1,2-Dichloroethane-d4	0.61		0.5000		121	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R92067**	RunNo: **92067**
Prep Date:	Analysis Date: **10/25/2022**	SeqNo: **3304160** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R92067**	RunNo: **92067**
Prep Date:	Analysis Date: **10/25/2022**	SeqNo: **3304160** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R92067**	RunNo: **92067**
Prep Date:	Analysis Date: **10/25/2022**	SeqNo: **3304160** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: 1,2-Dichloroethane-d4	0.58		0.5000		116	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **100ng lcs2** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R92188** RunNo: **92188**

Prep Date: Analysis Date: **10/28/2022** SeqNo: **3309937** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	21	1.0	20.00	0	103	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	85.4	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		111	70	130			
Surr: Toluene-d8	11		10.00		105	70	130			

Sample ID: **100ng lcs3** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R92188** RunNo: **92188**

Prep Date: Analysis Date: **10/29/2022** SeqNo: **3309938** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	97.8	70	130			
Chlorobenzene	19	1.0	20.00	0	96.9	70	130			
1,1-Dichloroethene	17	1.0	20.00	0	87.3	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	9.6		10.00		95.5	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **PBW** Batch ID: **R92188** RunNo: **92188**

Prep Date: Analysis Date: **10/28/2022** SeqNo: **3310038** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R92188**	RunNo: **92188**
Prep Date:	Analysis Date: **10/28/2022**	SeqNo: **3310038** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R92188**	RunNo: **92188**
Prep Date:	Analysis Date: **10/28/2022**	SeqNo: **3310038** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R92188**	RunNo: **92188**
Prep Date:	Analysis Date: **10/29/2022**	SeqNo: **3310039** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R92188**	RunNo: **92188**
Prep Date:	Analysis Date: **10/29/2022**	SeqNo: **3310039** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **mb2**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R92188**	RunNo: **92188**
Prep Date:	Analysis Date: **10/29/2022**	SeqNo: **3310039** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		99.7	70	130			
Surr: Toluene-d8	11		10.00		109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **MB-71142**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **71142**	RunNo: **92209**
Prep Date: **10/28/2022**	Analysis Date: **10/31/2022**	SeqNo: **3311754** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.25								
Acenaphthylene	ND	0.25								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.25								
Benz(a)anthracene	ND	0.25								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.25								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	1.0								
Benzyl alcohol	ND	0.40								
Bis(2-chloroethoxy)methane	ND	0.25								
Bis(2-chloroethyl)ether	ND	0.30								
Bis(2-chloroisopropyl)ether	ND	0.30								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.25								
Butyl benzyl phthalate	ND	0.25								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.25								
4-Chlorophenyl phenyl ether	ND	0.25								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	1.0								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.25								
1,2-Dichlorobenzene	ND	0.25								
1,3-Dichlorobenzene	ND	0.25								
1,4-Dichlorobenzene	ND	0.25								
3,3´-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	3.0								
Dimethyl phthalate	ND	0.40								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **MB-71142** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **71142** RunNo: **92209**
Prep Date: **10/28/2022** Analysis Date: **10/31/2022** SeqNo: **3311754** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.40								
Hexachlorobenzene	ND	0.25								
Hexachlorobutadiene	ND	0.25								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.25								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.25								
2-Methylnaphthalene	ND	0.25								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.40								
N-Nitrosodi-n-propylamine	ND	0.40								
N-Nitrosodimethylamine	ND	0.40								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.25								
2-Nitroaniline	ND	0.40								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.25								
4-Nitrophenol	ND	0.40								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.25								
Phenol	ND	0.40								
Pyrene	ND	0.20								
Pyridine	ND	2.0								
1,2,4-Trichlorobenzene	ND	0.25								
2,4,5-Trichlorophenol	ND	0.25								
2,4,6-Trichlorophenol	ND	0.40								
Surr: 2-Fluorophenol	2.7		3.330		80.1	23.5	70.2			S
Surr: Phenol-d5	3.1		3.330		92.1	28.3	80			S
Surr: 2,4,6-Tribromophenol	2.8		3.330		84.1	33.8	106			
Surr: Nitrobenzene-d5	1.3		1.670		78.6	19.5	72.3			S
Surr: 2-Fluorobiphenyl	1.3		1.670		80.6	21.1	76.5			S
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	70	109			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **LCS-71142** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS** Batch ID: **71142** RunNo: **92209**

Prep Date: **10/28/2022** Analysis Date: **11/1/2022** SeqNo: **3311755** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.25	1.670	0	71.2	15.2	118			
4-Chloro-3-methylphenol	2.4	0.50	3.330	0	71.1	35.2	105			
2-Chlorophenol	2.6	0.25	3.330	0	78.4	16.4	101			
1,4-Dichlorobenzene	1.2	0.25	1.670	0	69.6	15	86.5			
2,4-Dinitrotoluene	0.97	0.50	1.670	0	58.1	28.8	92.8			
N-Nitrosodi-n-propylamine	1.2	0.40	1.670	0	71.6	26.2	103			
4-Nitrophenol	2.4	0.40	3.330	0	71.3	49.6	129			
Pentachlorophenol	2.3	0.40	3.330	0	68.1	42.7	101			
Phenol	2.5	0.40	3.330	0	76.6	15	115			
Pyrene	1.3	0.20	1.670	0	79.8	55.4	126			
1,2,4-Trichlorobenzene	1.2	0.25	1.670	0	69.8	15	99.4			
Surr: 2-Fluorophenol	2.5		3.330		75.3	23.5	70.2			S
Surr: Phenol-d5	2.7		3.330		81.4	28.3	80			S
Surr: 2,4,6-Tribromophenol	2.6		3.330		77.1	33.8	106			
Surr: Nitrobenzene-d5	1.3		1.670		79.4	19.5	72.3			S
Surr: 2-Fluorobiphenyl	1.4		1.670		81.4	21.1	76.5			S
Surr: 4-Terphenyl-d14	1.5		1.670		87.9	70	109			

Sample ID: **MB-71240** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **PBS** Batch ID: **71240** RunNo: **92375**

Prep Date: **11/2/2022** Analysis Date: **11/7/2022** SeqNo: **3320581** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.25								
Acenaphthylene	ND	0.25								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.25								
Benz(a)anthracene	ND	0.25								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.25								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	1.0								
Benzyl alcohol	ND	0.40								
Bis(2-chloroethoxy)methane	ND	0.25								
Bis(2-chloroethyl)ether	ND	0.30								
Bis(2-chloroisopropyl)ether	ND	0.30								
Bis(2-ethylhexyl)phthalate	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **MB-71240** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **71240** RunNo: **92375**
Prep Date: **11/2/2022** Analysis Date: **11/7/2022** SeqNo: **3320581** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Bromophenyl phenyl ether	ND	0.25								
Butyl benzyl phthalate	ND	0.25								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.25								
4-Chlorophenyl phenyl ether	ND	0.25								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	1.0								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.25								
1,2-Dichlorobenzene	ND	0.25								
1,3-Dichlorobenzene	ND	0.25								
1,4-Dichlorobenzene	ND	0.25								
3,3′-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	3.0								
Dimethyl phthalate	ND	0.40								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.40								
Hexachlorobenzene	ND	0.25								
Hexachlorobutadiene	ND	0.25								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.25								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.25								
2-Methylnaphthalene	ND	0.25								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.40								
N-Nitrosodi-n-propylamine	ND	0.40								
N-Nitrosodimethylamine	ND	0.40								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **MB-71240** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS** Batch ID: **71240** RunNo: **92375**
Prep Date: **11/2/2022** Analysis Date: **11/7/2022** SeqNo: **3320581** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.25								
2-Nitroaniline	ND	0.40								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.25								
4-Nitrophenol	ND	0.40								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.25								
Phenol	ND	0.40								
Pyrene	ND	0.20								
Pyridine	ND	2.0								
1,2,4-Trichlorobenzene	ND	0.25								
2,4,5-Trichlorophenol	ND	0.25								
2,4,6-Trichlorophenol	ND	0.40								
Surr: 2-Fluorophenol	1.7		3.330		51.5	23.5	70.2			
Surr: Phenol-d5	2.1		3.330		64.0	28.3	80			
Surr: 2,4,6-Tribromophenol	2.4		3.330		71.3	33.8	106			
Surr: Nitrobenzene-d5	0.99		1.670		59.2	19.5	72.3			
Surr: 2-Fluorobiphenyl	1.0		1.670		62.9	21.1	76.5			
Surr: 4-Terphenyl-d14	1.4		1.670		83.4	70	109			

Sample ID: **LCS-71240** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **71240** RunNo: **92375**
Prep Date: **11/2/2022** Analysis Date: **11/7/2022** SeqNo: **3320582** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.25	1.670	0	73.5	15.2	118			
4-Chloro-3-methylphenol	2.3	0.50	3.330	0	70.2	35.2	105			
2-Chlorophenol	2.3	0.25	3.330	0	68.2	16.4	101			
1,4-Dichlorobenzene	0.98	0.25	1.670	0	58.5	15	86.5			
2,4-Dinitrotoluene	1.0	0.50	1.670	0	60.5	28.8	92.8			
N-Nitrosodi-n-propylamine	1.2	0.40	1.670	0	73.4	26.2	103			
4-Nitrophenol	2.7	0.40	3.330	0	81.1	49.6	129			
Pentachlorophenol	2.5	0.40	3.330	0	75.7	42.7	101			
Phenol	2.4	0.40	3.330	0	71.8	15	115			
Pyrene	1.4	0.20	1.670	0	84.1	55.4	126			
1,2,4-Trichlorobenzene	1.1	0.25	1.670	0	63.9	15	99.4			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **LCS-71240**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **71240**	RunNo: **92375**
Prep Date: **11/2/2022**	Analysis Date: **11/7/2022**	SeqNo: **3320582** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	1.9		3.330		58.1	23.5	70.2			
Surr: Phenol-d5	2.2		3.330		65.3	28.3	80			
Surr: 2,4,6-Tribromophenol	2.5		3.330		73.7	33.8	106			
Surr: Nitrobenzene-d5	1.1		1.670		67.2	19.5	72.3			
Surr: 2-Fluorobiphenyl	1.2		1.670		71.1	21.1	76.5			
Surr: 4-Terphenyl-d14	1.4		1.670		84.4	70	109			

Sample ID: **2210B61-019AMS**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **FD-BH-10 (5.2-6.2')**	Batch ID: **71240**	RunNo: **92375**
Prep Date: **11/2/2022**	Analysis Date: **11/7/2022**	SeqNo: **3320591** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.94	0.24	1.590	0	58.9	19.3	82.7			
4-Chloro-3-methylphenol	1.9	0.48	3.171	0	60.8	25.3	89.7			
2-Chlorophenol	1.8	0.24	3.171	0	56.1	19.8	82.4			
1,4-Dichlorobenzene	0.58	0.24	1.590	0	36.6	15	58.6			
2,4-Dinitrotoluene	0.82	0.48	1.590	0	51.8	15	85.6			
N-Nitrosodi-n-propylamine	0.95	0.38	1.590	0	60.0	18.8	85.5			
4-Nitrophenol	2.2	0.38	3.171	0	68.5	26.6	123			
Pentachlorophenol	2.3	0.38	3.171	0	72.5	22.6	110			
Phenol	1.8	0.38	3.171	0	58.0	19.2	87.9			
Pyrene	1.2	0.19	1.590	0	72.5	24.1	132			
1,2,4-Trichlorobenzene	0.73	0.24	1.590	0	46.0	16.3	68.6			
Surr: 2-Fluorophenol	1.5		3.171		47.4	23.5	70.2			
Surr: Phenol-d5	1.8		3.171		55.5	28.3	80			
Surr: 2,4,6-Tribromophenol	2.5		3.171		77.4	33.8	106			
Surr: Nitrobenzene-d5	0.91		1.590		57.3	19.5	72.3			
Surr: 2-Fluorobiphenyl	0.98		1.590		61.7	21.1	76.5			
Surr: 4-Terphenyl-d14	1.2		1.590		76.7	70	109			

Sample ID: **2210B61-019AMSD**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **FD-BH-10 (5.2-6.2')**	Batch ID: **71240**	RunNo: **92375**
Prep Date: **11/2/2022**	Analysis Date: **11/7/2022**	SeqNo: **3320592** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.3	0.25	1.644	0	79.9	19.3	82.7	33.5	20	R
4-Chloro-3-methylphenol	2.6	0.49	3.279	0	78.9	25.3	89.7	29.1	20	R
2-Chlorophenol	2.9	0.25	3.279	0	88.1	19.8	82.4	47.5	20	RS
1,4-Dichlorobenzene	1.0	0.25	1.644	0	62.4	15	58.6	55.1	20	RS
2,4-Dinitrotoluene	1.1	0.49	1.644	0	66.3	15	85.6	27.8	20	R

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **2210B61-019AMSD** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **FD-BH-10 (5.2-6.2')** Batch ID: **71240** RunNo: **92375**
Prep Date: **11/2/2022** Analysis Date: **11/7/2022** SeqNo: **3320592** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Nitrosodi-n-propylamine	1.3	0.39	1.644	0	77.6	18.8	85.5	28.9	20	R
4-Nitrophenol	2.8	0.39	3.279	0	85.8	26.6	123	25.8	20	R
Pentachlorophenol	2.8	0.39	3.279	0	84.8	22.6	110	18.9	20	
Phenol	2.8	0.39	3.279	0	85.7	19.2	87.9	41.8	20	R
Pyrene	1.4	0.20	1.644	0	86.2	24.1	132	20.7	20	R
1,2,4-Trichlorobenzene	1.1	0.25	1.644	0	67.9	16.3	68.6	41.6	20	R
Surr: 2-Fluorophenol	2.5		3.279		74.8	23.5	70.2	0	0	S
Surr: Phenol-d5	2.7		3.279		81.8	28.3	80	0	0	S
Surr: 2,4,6-Tribromophenol	3.0		3.279		92.8	33.8	106	0	0	
Surr: Nitrobenzene-d5	1.3		1.644		77.8	19.5	72.3	0	0	S
Surr: 2-Fluorobiphenyl	1.4		1.644		86.3	21.1	76.5	0	0	S
Surr: 4-Terphenyl-d14	1.6		1.644		95.6	70	109	0	0	

Sample ID: **2210B61-017AMS** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **FD-BH-8 (19-19.8')** Batch ID: **71142** RunNo: **92375**
Prep Date: **10/28/2022** Analysis Date: **11/8/2022** SeqNo: **3320612** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.91	0.33	2.218	0	41.1	19.3	82.7			
4-Chloro-3-methylphenol	2.1	0.66	4.422	0	46.5	25.3	89.7			
2-Chlorophenol	1.8	0.33	4.422	0	40.5	19.8	82.4			
1,4-Dichlorobenzene	0.79	0.33	2.218	0	35.8	15	58.6			
2,4-Dinitrotoluene	0.85	0.66	2.218	0	38.3	15	85.6			
N-Nitrosodi-n-propylamine	0.92	0.53	2.218	0	41.6	18.8	85.5			
4-Nitrophenol	2.4	0.53	4.422	0	53.3	26.6	123			
Pentachlorophenol	2.3	0.53	4.422	0	51.4	22.6	110			
Phenol	1.9	0.53	4.422	0	42.2	19.2	87.9			
Pyrene	1.2	0.27	2.218	0	54.7	24.1	132			
1,2,4-Trichlorobenzene	0.85	0.33	2.218	0	38.3	16.3	68.6			
Surr: 2-Fluorophenol	1.5		4.422		35.0	23.5	70.2			
Surr: Phenol-d5	1.8		4.422		39.9	28.3	80			
Surr: 2,4,6-Tribromophenol	2.2		4.422		50.3	33.8	106			
Surr: Nitrobenzene-d5	0.89		2.218		40.3	19.5	72.3			
Surr: 2-Fluorobiphenyl	0.91		2.218		40.9	21.1	76.5			
Surr: 4-Terphenyl-d14	1.3		2.218		58.2	70	109			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **2210B61-017AMSD** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **FD-BH-8 (19-19.8')** Batch ID: **71142** RunNo: **92375**

Prep Date: **10/28/2022** Analysis Date: **11/8/2022** SeqNo: **3320613** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.95	0.38	2.516	0	37.9	19.3	82.7	4.76	20	
4-Chloro-3-methylphenol	2.1	0.75	5.018	0	41.0	25.3	89.7	0.0915	20	
2-Chlorophenol	1.7	0.38	5.018	0	34.5	19.8	82.4	3.53	20	
1,4-Dichlorobenzene	0.75	0.38	2.516	0	29.7	15	58.6	6.05	20	
2,4-Dinitrotoluene	0.93	0.75	2.516	0	36.8	15	85.6	8.55	20	
N-Nitrosodi-n-propylamine	0.90	0.60	2.516	0	35.6	18.8	85.5	2.90	20	
4-Nitrophenol	2.6	0.60	5.018	0	52.8	26.6	123	11.7	20	
Pentachlorophenol	2.5	0.60	5.018	0	49.7	22.6	110	9.14	20	
Phenol	1.8	0.60	5.018	0	35.9	19.2	87.9	3.53	20	
Pyrene	1.3	0.30	2.516	0	53.1	24.1	132	9.63	20	
1,2,4-Trichlorobenzene	0.79	0.38	2.516	0	31.5	16.3	68.6	6.86	20	
Surr: 2-Fluorophenol	1.5		5.018		29.7	23.5	70.2	0	0	
Surr: Phenol-d5	1.7		5.018		34.2	28.3	80	0	0	
Surr: 2,4,6-Tribromophenol	2.6		5.018		50.9	33.8	106	0	0	
Surr: Nitrobenzene-d5	0.88		2.516		35.1	19.5	72.3	0	0	
Surr: 2-Fluorobiphenyl	0.99		2.516		39.1	21.1	76.5	0	0	
Surr: 4-Terphenyl-d14	1.4		2.516		55.4	70	109	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **MB-71071**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **71071**	RunNo: **92143**
Prep Date: **10/26/2022**	Analysis Date: **10/27/2022**	SeqNo: **3307734** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	5.0								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	5.0								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	5.0								
4-Chloroaniline	ND	5.0								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	5.0								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	20								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	5.0								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	10								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**
29-Nov-22

Client: Marathon
Project: French Drain

Sample ID: **MB-71071**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **71071**	RunNo: **92143**
Prep Date: **10/26/2022**	Analysis Date: **10/27/2022**	SeqNo: **3307734** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	5.0								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	20								
Hexachlorobutadiene	ND	20								
Hexachlorocyclopentadiene	ND	20								
Hexachloroethane	ND	20								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	5.0								
1-Methylnaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	5.0								
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	5.0								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	5.0								
Nitrobenzene	ND	5.0								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	40								
Phenanthrene	ND	10								
Phenol	ND	20								
Pyrene	ND	10								
Pyridine	ND	40								
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		61.9	15	84.5			
Surr: Phenol-d5	93		200.0		46.5	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		72.3	15	108			
Surr: Nitrobenzene-d5	70		100.0		69.7	16.8	112			
Surr: 2-Fluorobiphenyl	61		100.0		60.8	15	101			
Surr: 4-Terphenyl-d14	95		100.0		95.2	34.4	134			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **LCS-71071** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **71071** RunNo: **92143**

Prep Date: **10/26/2022** Analysis Date: **10/27/2022** SeqNo: **3307736** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	60	10	100.0	0	60.4	21.3	104			
4-Chloro-3-methylphenol	140	5.0	200.0	0	68.8	31.8	104			
2-Chlorophenol	150	5.0	200.0	0	74.2	26.9	105			
1,4-Dichlorobenzene	45	5.0	100.0	0	45.2	15	89.8			
2,4-Dinitrotoluene	55	5.0	100.0	0	54.5	22.9	92.4			
N-Nitrosodi-n-propylamine	67	5.0	100.0	0	66.8	33.2	98.8			
4-Nitrophenol	84	10	200.0	0	42.1	27.4	64.2			
Pentachlorophenol	140	40	200.0	0	69.4	37.6	93			
Phenol	85	20	200.0	0	42.6	17	61.1			
Pyrene	86	10	100.0	0	85.7	61	123			
1,2,4-Trichlorobenzene	46	5.0	100.0	0	45.6	15	91.7			
Surr: 2-Fluorophenol	100		200.0		51.3	15	84.5			
Surr: Phenol-d5	79		200.0		39.6	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		71.2	15	108			
Surr: Nitrobenzene-d5	68		100.0		67.5	16.8	112			
Surr: 2-Fluorobiphenyl	61		100.0		61.1	15	101			
Surr: 4-Terphenyl-d14	91		100.0		91.0	34.4	134			

Sample ID: **LCSD-71071** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **71071** RunNo: **92143**

Prep Date: **10/26/2022** Analysis Date: **10/27/2022** SeqNo: **3307738** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	50	10	100.0	0	49.9	21.3	104	18.9	45.3	
4-Chloro-3-methylphenol	110	5.0	200.0	0	57.2	31.8	104	18.4	54.5	
2-Chlorophenol	110	5.0	200.0	0	56.1	26.9	105	27.8	44.5	
1,4-Dichlorobenzene	38	5.0	100.0	0	37.9	15	89.8	17.5	39.6	
2,4-Dinitrotoluene	47	5.0	100.0	0	46.8	22.9	92.4	15.3	33.1	
N-Nitrosodi-n-propylamine	55	5.0	100.0	0	54.9	33.2	98.8	19.6	48	
4-Nitrophenol	45	10	200.0	0	22.3	27.4	64.2	61.5	14.7	RS
Pentachlorophenol	85	40	200.0	0	42.6	37.6	93	47.9	15	R
Phenol	69	20	200.0	0	34.4	17	61.1	21.4	42.5	
Pyrene	76	10	100.0	0	76.0	61	123	12.1	11.8	R
1,2,4-Trichlorobenzene	39	5.0	100.0	0	39.4	15	91.7	14.4	34.2	
Surr: 2-Fluorophenol	71		200.0		35.4	15	84.5	0	0	
Surr: Phenol-d5	60		200.0		30.1	15	67	0	0	
Surr: 2,4,6-Tribromophenol	93		200.0		46.5	15	108	0	0	
Surr: Nitrobenzene-d5	54		100.0		54.5	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	46		100.0		46.3	15	101	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210B61**

29-Nov-22

Client: Marathon

Project: French Drain

Sample ID: **LCSD-71071**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **71071**	RunNo: **92143**
Prep Date: **10/26/2022**	Analysis Date: **10/27/2022**	SeqNo: **3307738** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	82		100.0		82.4	34.4	134	0	0	

Sample ID: **MB-71006**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **71006**	RunNo: **92209**
Prep Date: **10/24/2022**	Analysis Date: **10/31/2022**	SeqNo: **3311733** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	110		200.0		57.5	15	84.5			
Surr: Phenol-d5	88		200.0		44.1	15	67			
Surr: 2,4,6-Tribromophenol	140		200.0		70.1	15	108			
Surr: Nitrobenzene-d5	72		100.0		71.8	16.8	112			
Surr: 2-Fluorobiphenyl	62		100.0		62.2	15	101			
Surr: 4-Terphenyl-d14	100		100.0		101	34.4	134			

Sample ID: **LCS-71006**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **71006**	RunNo: **92209**
Prep Date: **10/24/2022**	Analysis Date: **10/31/2022**	SeqNo: **3311734** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	110		200.0		53.1	15	84.5			
Surr: Phenol-d5	80		200.0		40.2	15	67			
Surr: 2,4,6-Tribromophenol	130		200.0		62.8	15	108			
Surr: Nitrobenzene-d5	70		100.0		70.0	16.8	112			
Surr: 2-Fluorobiphenyl	62		100.0		62.3	15	101			
Surr: 4-Terphenyl-d14	96		100.0		95.8	34.4	134			

Sample ID: **LCSD-71006**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **71006**	RunNo: **92209**
Prep Date: **10/24/2022**	Analysis Date: **10/31/2022**	SeqNo: **3311735** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	74		200.0		37.2	15	84.5	0	0	
Surr: Phenol-d5	58		200.0		29.2	15	67	0	0	
Surr: 2,4,6-Tribromophenol	110		200.0		56.3	15	108	0	0	
Surr: Nitrobenzene-d5	50		100.0		50.4	16.8	112	0	0	
Surr: 2-Fluorobiphenyl	45		100.0		45.3	15	101	0	0	
Surr: 4-Terphenyl-d14	83		100.0		83.1	34.4	134	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Marathon | Work Order Number: 2210B61 | RcptNo: 1

Received By: Desiree Dominguez 10/21/2022 4:00:00 PM DD

Completed By: Sean Livingston 10/24/2022 8:32:04 AM

Reviewed By: KPG 10.24.22

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: JN 10/24/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good				
2	3.0	Good				

Released to Imaging: 3/28/2023 4:52:11 PM
Received by OCD: 3/28/2023 4:44:58 PM

Cooler 1 of 2

Chain-of-Custody Record

Client: Marathon/Trihydro

Mailing Address: 62 Giants Crossing
Jamestown, NM 87347

Phone #: 970-712-4201

email or Fax#: econtling@trihydro.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☑ EDD (Type) Trihydro format

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: French Drain

Project #:

Project Manager: Emily Conkling

Sampler: Kara Hoppes & Beth Butler

On Ice: ☑ Yes ☐ No

# of Coolers: (2) 5.4 - 0.1 = 5.3°c

Cooler Temp(including CF): 3.1 - 0.1 = 3.0°c (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2210B61	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA) low-level VOCs	8270 (Semi-VOA) SVOCs	Total Coliform (Present/Absent)
10/19/22	1130	W	FB01-101922	1 amber (1 L) 250 ml amber 9 VOAs	HCl for vials	001		X						X	X	
10/19/22	1220	W	EB01-101922	↓	↓	002		↓						↓	↓	
10/19/22	—	S	BD01-101922	4oz jar 2 vials	MeOH for vials	003										
10/20/22	1445	W	FB01-102022	1 Lamber 250 ml amber 8 VOAs	HCl for vials	004										
10/20/22	1545	W	EB01-102022	1 Lamber 250 ml amber 9 VOAs	↓	005										
10/20/22	—	S	BD01-102022	4oz jar 2 vials	T	006										
10/19/22	1320	S	FD-BH-4 (20-21')	↓	MeOH for vials	007										
10/19/22	1325	S	FD-BH-4 (24-25')		↓	008										
10/19/22	1605	S	FD-BH-5 (12.5-13.5')			009										
10/20/22	1015	S	FD-BH-7 (16-17')			010										
10/20/22	1310	S	FD-BH-9 (6.5-7.5')			011										
10/20/22	1302	S	FD-BH-9 (7.5-8.5')	↓	↓	012		↓						↓	↓	

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/21/22	1230			Courier	10/21/22	16:00
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Released to Imaging: 3/28/2023 4:52:11 PM
Received by OCD: 3/28/2023 4:44:58 PM

Chain-of-Custody Record

Client: Marathon/Trihydro

Mailing Address: 62 Giants Crossing
Jamestown, NM 87347

Phone #: 970-712-4201

email or Fax#: econkling@trihydro.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☑ EDD (Type) Trihydro format

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: French Drain

Project #:

Project Manager: Emily Conkling

Sampler: Kara Hoppes & Beth Butler

On Ice: ☒ Yes ☐ No

# of Coolers: (2) 5.4-0.1=5.3°c

Cooler Temp(including CF): 3.1-0.1=3.0°c (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA) Low level VOCs	8270 (Semi-VOA) SVOCs	Total Coliform (Present/Absent)
10/20/22	1326	S	FD-BH-9 (13.75-14.75')	4oz jar 2 vials	MeOH for vials	013		X						X	X	
	1110		FD-BH-6 (15-16')			014										
	1111		FD-BH-6 (18-19')			015										
	1430		FD-BH-8 (9-10')			016										
	1532		FD-BH-8 (19-19.8')			017										
10/21/22	1158	W	EB01-102122	1 Lamber 250 mL amber 6 VOAs	HCl for VOAs	018										
10/20/22	1610	S	FD-BH-10 (5.2-6.2')	4oz amber 2 vials	MeOH for vials	019										
10/20/22	0846		FD-BH-10 (19-20')			020										
10/21/22	1015		FD-BH-12 (10-11')			021										
10/21/22	1116		FD-BH-11 (18-19')			022										
10/21/22		W	Trip blank	2 VOAs	HCl	023								X		
10/21/22		W	MeOH blank	2 vials	MeOH	024								X		

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/21/22	1230			Courier	10/21/22	16:00
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix C – Data Validation Reports

Tier II Data Validation Report Summary

Client: Marathon Oil	Laboratory: Hall Environmental Analysis Laboratory
Project Name: Western Refining Southwest, French Drain	Sample Matrix: Soil
Project Number: 697-104-001 Task: 0002	Sample Start Date: 10/19/2022
Date Validated: 01/26/2023	Sample End Date: 10/21/2022
Parameters Included: • Volatile Organic Compounds (VOC) by Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste (SW-846) Method 8260B • Semivolatile Organic Compounds (SVOC) by SW-846 Method 8270C • Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) by SW-846 Method 8015D • TPH Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by SW-846 Method 8015D Modified	
Laboratory Project ID: 2210B61	
Data Validator: Daran O'Hollearn, Lead Project Scientist	
Reviewer: Mike Phillips, Senior Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services Group on the analytical data report packages generated by Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, evaluating samples from the Marathon Oil site, located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values from:

- Field duplicate pairs
- Matrix spike (MS) and matrix spike duplicate (MSD) pairs
- Laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) pairs

Laboratory accuracy was established by reviewing the demonstrated percent recoveries (%R) of the following items to verify that data are not biased.

- MS/MSD samples
- LCS/LCSD samples
- Organic system monitoring compounds (surrogates)

Field accuracy was established by collecting and analyzing the following samples to monitor for possible ambient or cross contamination during sampling and transportation.

- Trip blanks
- Field blanks
- Equipment blanks

Method compliance was established by reviewing sample integrity, holding times, detection limits, surrogate recoveries, laboratory blanks, initial and continuing calibrations (where applicable), and the LCS/LCSD percent recoveries against method-specific requirements.

Tier II Data Validation Report Summary

Completeness was evaluated by determining the overall ratio of the number of samples and analyses planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody (CoC), laboratory analytical methods, and other laboratory and field documents associated with this analytical data set.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
FB01-101922	2210b61-001
EB01-101922	2210b61-002
BD01-101922	2210b61-003
FB01-102022	2210b61-004
EB01-102022	2210b61-005
BD01-102022	2210b61-006
FD-BH-4 (20-21')	2210b61-007
FD-BH-4 (24-25')	2210b61-008
FD-BH-5 (12.5-13.5')	2210b61-009
FD-BH-7 (16-17')	2210b61-010
FD-BH-9 (6.5-7.5')	2210b61-011
FD-BH-9 (7.5-8.5')	2210b61-012
FD-BH-9 (13.75-14.75')	2210b61-013
FD-BH-6 (15-16')	2210b61-014
FD-BH-6 (18-19')	2210b61-015
FD-BH-8 (9-10')	2210b61-016
FD-BH-8 (19-19.8')	2210b61-017
EB01-102122	2210b61-018
FD-BH-10 (5.2-6.2')	2210b61-019
FD-BH-10 (19-20')	2210b61-020
FD-BH-12 (10-11')	2210b61-021
FD-BH-11 (18-19')	2210b61-022
Trip Blank	2210b61-023
MeOH Blank	2210b61-024

Tier II Data Validation Report Summary

The laboratory data were reviewed to evaluate compliance with the methods and the quality of the reported data. Assessment of CoC completeness is included in Item 3 of the Data Validation Checklist. A check mark (✓) indicates that the referenced validation criteria were deemed acceptable, whereas a crossed circle (⊗) indicates validation criteria for which the data have been qualified by the data validator. An empty circle (○) indicates that the specified criterion does not apply to the reviewed data. Details are noted in the tables below.

Validation Criteria

- ✓ Data Completeness
- ✓ CoC Documentation (Item 3)
- ✓ Holding Times and Preservation (Items 6 and 7)
- ○ Initial and Continuing Calibrations (Items 9 and 10)
- ✓ Laboratory Blanks (Items 11 and 12)
- ⊗ MS/MSD (Items 13 and 14)
- ⊗ LCS/LCSD (Items 15 and 16)
- ⊗ System Monitoring Compounds (i.e., Surrogates) (Item 17)
- ✓ Field, Equipment, and Trip Blanks (Items 18 and 19)
- ⊗ Field Duplicates (Items 20 and 21)
- ○ Laboratory Duplicates (Item 22)

Guidance References

Chemical data validation was conducted in accordance with the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for the analyses listed below, or by the appropriate method if not covered in the National Functional Guidelines.

- Data for organic analyses were evaluated according to validation criteria set forth in the USEPA CLP National Functional Guidelines for Organic Superfund Methods Data Review, document number EPA-540-R-20-005, November 2020 with additional reference to the USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99/008, October 1999.
- Review of field duplicates was conducted according to the USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.
- Trihydro Data Validation Variance Documentation, April 2022.

Tier II Data Validation Report Summary

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Item 2 of the Validation Criteria Checklist.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data that are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R (rejected, data not usable), the data may be used for site evaluation; however, consideration should be given to the reasons for qualification when interpreting sample concentrations. Data points that are assigned an R qualifier should not be used for site evaluation purposes.

If applicable, text was identified in **bold font** in the Validation Criteria Checklist to indicate that further action and/or qualification of the data were required. Data may have been qualified with J data flags by the laboratory if the result was greater than or equal to the method detection limit (MDL) but less than the reporting limit (RL). These laboratory-applied J flags were preserved, if present, and included in the Data Qualification Summary table at the end of this report. If applicable, data validation qualifiers were added for the items noted with crossed circles in the Validation Criteria section above. Please see the Data Qualification Summary table at the end of this report for a complete list of samples and analytes qualified.

If data would be qualified with more than one flag, one qualifier was assigned based on the severity; however, all reasons for qualification were retained. Data that would be qualified with both J+ and J- flags were evaluated based on validation criteria and assigned the appropriate flag. The hierarchy of qualifiers from the most to least severe is as follows:

- R > JB/U > NJ > J+/J- > J/UJ

Data qualifiers used during this validation are included in the following table.

Qualifier	Definition
J	Estimated concentration
J+	The result is an estimated concentration, but may be biased high
UJ	Estimated reporting limit

Data Completeness

The analyses were performed as requested on the CoC records. The associated samples were received by the laboratory and analyzed properly unless otherwise noted in the Criteria Checklist below. The complete data package consisted of 2,363 data points. The data completeness calculation does not include any submitted blank sample results. Data points were not rejected. The data completeness measure for this data package is calculated to be 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST

1. Was the report free of non-conformances identified by the laboratory? Yes

Comments: The laboratory did not report non-conformances related to the analytical data for this sample set.

2. Were the data free of data qualification flags and/or notes used by the laboratory? If no, define. No

Comments: The laboratory used the following data qualification flags with this data set.

D – Sample diluted due to matrix.

R – % RPD outside of range.

S – % Recovery outside of range due to dilution or matrix interference.

3. Were sample CoC forms and custody procedures complete? Yes

Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt. Custody seals were not present because the samples were transferred to a laboratory field courier service for transport from the field to the laboratory, and custody was maintained at all times.

4. Were detection limits in accordance with the quality assurance project plan (QAPP), permit, or method, or indicated as acceptable? Yes

Comments: The detection limits appeared to be acceptable. The following dilutions were applied.

Method	Sample(s)	Analyte(s)	Dilution Factor
8015D	FD-BH-10 (5.2-6.2'), FD-BH-11 (18-19')	TPH GRO	5
8260B	FD-BH-10 (5.2-6.2'), FD-BH-11 (18-19')	VOCs	5
8270C	FD-BH-12 (10-11')	SVOCs	10

5. Were the reported analytical methods and constituents in compliance with the QAPP, permit, or CoC? Yes

Comments: The reported analytical methods were in compliance with the CoC, and the laboratory reported the requested constituents in accordance with the CoC.

6. Were samples received in good condition within method-specified requirements? Yes

Comments: Samples were received on ice, in good condition, and with the cooler temperatures within the recommended temperature range of 4°C ± 2°C at 3.0°C and 5.3°C as noted on the CoC and the Sample Log-in Check List.

7. Were samples extracted/digested and analyzed within method-specified or technical holding times? Yes

Comments: The samples were extracted and analyzed within method-specific holding times.

8. Were reported units appropriate for the sample matrix/matrices and analytical method(s)? Specify if wet or dry units were used for soil. Yes

Comments: The results were reported in concentration units of micrograms per liter (µg/L), milligrams per liter (mg/L), and milligrams per kilogram (mg/kg), which were acceptable for the sample matrix and the analyses requested. The analytical results for the soil samples were reported on a wet weight, as-received, basis for this sample set.

9. Did the laboratory provide any specific initial and/or continuing calibration results? No

Comments: Initial and continuing calibration data were not included as part of this data set.

VALIDATION CRITERIA CHECKLIST

10. If initial and/or continuing calibration results were provided, were the results within acceptable limits? N/A

Comments: Initial and continuing calibration data were not included as part of this data set.

11. Was the total number of laboratory blank samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of laboratory blank samples prepared was equal to at least 5% of the total number of samples.

12. Were target analytes reported as not detected in the laboratory blanks? Yes

Comments: Target analytes were reported as not detected in the laboratory blanks.

13. Was the total number of MS samples prepared equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of matrix spike samples prepared was equal to at least 5% of the total number of samples, although MS samples were not prepared/reported for all analyses and/or batches. The matrix spike sample source for each analytical batch in this sample set has been indicated below.

Method	Analytes	Batch	MS Sample Source
8015D	TPH DRO and MRO	71028	Not Prepared
8015D	TPH DRO and MRO	71044	Not Prepared
8015D	TPH DRO and MRO	71197	BD01-101922
8015D	TPH GRO	R92062	BD01-101922
8015D	TPH GRO	B92099	FD-BH-9 (13.75-14.75')
8015D	TPH GRO	C92099	FB01-101922
8015D	TPH GRO	C92145	FB01-102022
8260B	VOCs	R92067	Not Prepared
8260B	VOCs	R92188	Not Prepared
8270C	SVOCs	71240	FD-BH-10 (5.2-6.2')
8270C	SVOCs	71142	FD-BH-8 (19-19.8')
8270C	SVOCs	71071	Not Prepared

Not Prepared – Matrix spikes were not prepared/reported for this batch.

14. For MS/MSDs prepared from project samples, were percent recoveries and RPDs within data validation or laboratory quality control (QC) limits? No

Comments: The percent recoveries and RPDs for MS/MSDs prepared from project samples were within data validation and laboratory QC limits or were not applicable because the unspiked amount was more than four times the spike added, with the following exceptions.

Method	Analyte	Batch	MS Recovery	MSD Recovery	MS/MSD QC Limits	MS/MSD RPD	RPD QC Limits
8270C	**Acenaphthene**	**71240**	**Acceptable**	**Acceptable**	**19.3-82.7%**	**33.5%**	**20%**
8270C	**4-Chloro-3-methylphenol**	**71240**	**Acceptable**	**Acceptable**	**25.3-89.7%**	**29.1%**	**20%**
8270C	**2-Chlorophenol**	**71240**	**Acceptable**	**88.1%**	**19.8-82.4%**	**47.5%**	**20%**
8270C	**1,4-Dichlorobenzene**	**71240**	**Acceptable**	**62.4%**	**15-58.6%**	**55.1%**	**20%**

VALIDATION CRITERIA CHECKLIST

Method	Analyte	Batch	MS Recovery	MSD Recovery	MS/MSD QC Limits	MS/MSD RPD	RPD QC Limits
8270C	**2,4-Dinitrotoluene**	**71240**	**Acceptable**	**Acceptable**	**15-85.6%**	**27.8%**	**20%**
8270C	**N-Nitrosodi-n-propylamine**	**71240**	**Acceptable**	**Acceptable**	**18.8-85.5%**	**28.9%**	**20%**
8270C	**4-Nitrophenol**	**71240**	**Acceptable**	**Acceptable**	**26.6-123%**	**25.8%**	**20%**
8270C	**Phenol**	**71240**	**Acceptable**	**Acceptable**	**19.2-87.9%**	**41.8%**	**20%**
8270C	**Pyrene**	**71240**	**Acceptable**	**Acceptable**	**24.1-132%**	**20.7%**	**20%**
8270C	**1,2,4-Trichlorobenzene**	**71240**	**Acceptable**	**Acceptable**	**16.3-68.6%**	**41.6%**	**20%**

The analytes 2-chlorophenol and 1,4-dichlorobenzene with MSD recoveries greater than the laboratory or data validation QC limits were not detected in the associated samples, and these results did not require qualification due to evidence of potential high bias.

The identified analytes with MS/MSD RPD values that were above the QC limit were not detected, and these results were qualified as UJ due to evidence of poor precision.

15. Was the total number of LCSs analyzed equal to at least 5% of the total number of samples or analyzed as required by the method? Yes

Comments: The total number of LCS samples analyzed was equal to at least 5% of the total number of samples.

16. Were LCS/LCSD percent recoveries and LCS/LCSD RPDs within data validation or laboratory QC limits? No

Comments: The LCS and LCSD percent recoveries and LCS/LCSD RPDs were within data validation and laboratory QC limits, with the following exceptions.

Method	Analyte	Batch	LCS Recovery	LCSD Recovery	LCS/LCSD QC Limits	LCS/LCSD RPD	RPD QC Limits
8270C	**4-Nitrophenol**	**71071**	**Acceptable**	**22.3%**	**27.4-64.2%**	**61.5%**	**14.7%**
8270C	**Pentachlorophenol**	**71071**	**Acceptable**	**Acceptable**	**37.6-93%**	**47.9%**	**15%**
8270C	**Pyrene**	**71071**	**Acceptable**	**Acceptable**	**61-123%**	**12.1%**	**11.8%**

The analyte 4-nitrophenol was not detected in the associated samples, and the result was qualified as UJ due to evidence of potential low bias.

The identified analytes were not detected in the associated samples, and the results were qualified as UJ due to evidence of poor precision.

17. Were surrogate recoveries within laboratory QC limits? No

Comments: Surrogate recoveries were within laboratory QC limits, with the following exceptions.

Method	Surrogate	Sample	Surrogate Recovery	QC Limits
8270C	2-Fluorophenol	FD-BH-7 (16-17')	70.5%	23.5-70.2%
8270C	Phenol-d_5	FD-BH-7 (16-17')	80.5%	28.3-80%
8015D	**BFB**	**FD-BH-9 (6.5-7.5')**	**236%**	**37.7-212%**
8015D	**BFB**	**FD-BH-9 (7.5-8.5')**	**303%**	**37.7-212%**
8015D	**BFB**	**FD-BH-8 (9-10')**	**588%**	**37.7-212%**
8260B	**4-Bromofluorobenzene**	**FD-BH-8 (9-10')**	**132%**	**70-130%**

VALIDATION CRITERIA CHECKLIST

Method	Surrogate	Sample	Surrogate Recovery	QC Limits
8015D	**BFB**	**FD-BH-10 (5.2-6.2')**	**817%**	**37.7-212%**
8270C	2-Fluorophenol	FD-BH-11 (18-19')	75.2%	23.5-70.2%
8270C	Phenol-d_5	FD-BH-11 (18-19')	84.0%	28.3-80%

TPH GRO was detected in the Method 8015D analyses of samples FD-BH-9 (6.5-7.5'), FD-BH-9 (7.5-8.5'), FD-BH-8 (9-10'), and FD-BH-10 (5.2-6.2'), and these results were qualified as J+ to indicate a potential high bias.

Since Method 8270C surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes in a given fraction (acid or base/neutral) when two or more surrogates from the same fraction (acid or base/neutral) were outside the acceptance range. This condition did not exist for the Method 8270C analyses of samples BD01-101922, BD01-102022, FD-BH-4 (20-21'), FD-BH-9 (6.5-7.5'), FD-BH-9 (7.5-8.5'), FD-BH-9 (13.75-14.75'), FD-BH-8 (9-10'), FD-BH-8 (19-19.8'), and FD-BH-10 (19-20'), and qualification of sample data was not required**.**

The analytes in the acid fraction of samples FD-BH-7 (16-17') and FD-BH-11 (18-19') were not detected. Qualification of data was not required due to evidence of potential high bias.

Since Method 8260B surrogate associations were not available from the laboratory, qualification was assigned to all of the target analytes when one or more surrogates was outside the acceptance range. **The target analytes in the sample FD-BH-8 (9-10') with the surrogate 4-bromofluorobenzene recovery that was greater than the upper laboratory QC limits were qualified as J+ if detected in sample FD-BH-8 (9-10') due to potential high bias.** Qualification was not required for non-detected analytes in sample FD-BH-8 (9-10').

The SVOC results for sample FD-BH-12 (10-11') were not qualified based on the surrogate non-conformances in the Method 8270C analysis since the applied dilution of 10 times resulted in surrogate concentrations below routinely calibrated levels, and those results were deemed unreliable and possibly inaccurate.

Qualification of sample data was not required based on surrogate non-conformances in QC samples as the environmental samples were evaluated based on their specific surrogate recoveries.

18. Were the number of trip blank, field blank, and/or equipment blank samples collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit? Yes

Comments: The number of trip, field, and equipment blanks collected was equal to at least 10% of the number of samples and are listed in the table below.

Blank Sample ID	Laboratory ID
FB01-101922	2210b61-001
EB01-101922	2210b61-002
FB01-102022	2210b61-004
EB01-102022	2210b61-005
EB01-102122	2210b61-018
Trip Blank	2210b61-023
MeOH Blank	2210b61-024

19. Were target analytes reported as not detected in the trip blank, field blank, and/or equipment blank samples? Yes

Comments: Target analytes were not detected in the trip blank, field blank, equipment, and MeOH blank samples.

VALIDATION CRITERIA CHECKLIST	
20. Was the number of field duplicates collected equal to at least 10% of the total number of samples or as required by the project guidelines, QAPP, SAP, or permit?	Yes
Comments: The number of field duplicates collected was equal to at least 10% of the number of samples. • Sample BD01-101922 was collected as a field duplicate of sample FD-BH-5 (12.5-13.5'). • Sample BD01-102022 was collected as a field duplicate of sample FD-BH-9 (7.5-8.5').	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	No
Comments: As indicated in the Field Duplicate Summary Table at the end of this report, field duplicate RPD values were within data validation QC limits of 0-30% for water samples, with the following exception. **The RPD value for TPH GRO exceeded the data validation limit of 50% at 124.8%, which was evidence of poor precision. The TPH GRO results were qualified as J for samples FD-BH-9 (7.5-8.5') and BD01-102022.** *RPD values exceeding 100% would routinely result in qualification of data in associated samples in addition to the parent and duplicate. However, since multiple field duplicate samples were collected for this data set, assignment of associations was considered arbitrary and inappropriate. Therefore, qualification of results was limited to the parent and duplicate samples in this case.* RPDs could not be calculated for field duplicate pair FD-BH-5 (12.5-13.5') and BD01-101922 since the target analytes were not detected in either sample. This was an acceptable result.	
22. For laboratory duplicates prepared from project samples, were RPDs within data validation or laboratory QC limits?	N/A
Comments: Laboratory duplicate samples were not prepared for this sample set.	
23. Were the following data relationships realistic? • Target analytes were reported by more than one method (e.g., 8260/8270, EPH/8270)?	Yes
Comments: Target analytes 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, and naphthalene were reported by both Method 8260B and Method 8270C. These analytes were reported as not detected by both methods, with the following exception. For sample FD-BH-8 (9-10'), naphthalene was detected at a concentration of 0.058 mg/kg in the Method 8260B analysis and not detected at a reporting limit of 0.21 mg/kg in the Method 8270C analysis. The EPA has not provided guidance or requirements for the evaluation, validation, and qualification of the comparability of analyte results obtained by more than one method. Therefore, qualification of results was not performed based on these data.	
• Both total and dissolved metals analyses were performed, and the total metals results were greater than or equal to the dissolved metals results?	N/A
Comments: Total and dissolved metals analyses were not performed for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: FD-BH-9 (7.5-8.5') Field Duplicate Sample ID: BD01-102022				
Analyte	**Method**	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
TPH GRO	**SW8015**	**19 mg/kg**	**4.4 mg/kg**	**124.8%**
sec-Butylbenzene	SW8260B	0.035 mg/kg	ND (0.025 mg/kg)	DL

Field duplicate RPD control limits are not to exceed 50% for soil as established by USEPA Region I - New England Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures, EQADR-Supplement2, September 2020.

DL – Indicates that the analyte was detected in one of the duplicate samples and was undetected in the other sample, and therefore an RPD could not be calculated. Data were not qualified since the detection was within two times the reporting limit. Non-detected results are indicated above with the applicable reporting limit as ND (RL).

The RPD value for TPH GRO exceeded the data validation limit of 50% at 124.8%, which was evidence of poor precision. The TPH GRO results were qualified as J for samples FD-BH-9 (7.5-8.5') and BD01-102022.

RPD values exceeding 100% would routinely result in qualification of data in associated samples in addition to the parent and duplicate. However, since multiple field duplicate samples were collected for this data set, assignment of associations was considered arbitrary and inappropriate. Therefore, qualification of results was limited to the parent and duplicate samples in this case.

DATA QUALIFICATION SUMMARY

Abbreviation	Reason
ERPD-FD	High field duplicate RPD.
ERPD-LCS	The LCS/LCSD RPD exceeded the upper acceptable limit indicating poor precision.
ERPD-MS	The MS/MSD RPD exceeded the upper acceptable limit indicating poor precision.
HR-SUR	The surrogate percent recovery was greater than the upper acceptable limit indicating a possible high bias.
LR-LCS	The LCS and/or LCSD percent recovery was less than the lower acceptable limit indicating a possible low bias.

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
1,2,4-Trichlorobenzene	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.24	mg/kg	UJ	ERPD-MS
1,2,4-Trichlorobenzene	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.24	mg/kg	UJ	ERPD-MS
1,2,4-Trichlorobenzene	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	2.4	mg/kg	UJ	ERPD-MS
1,2,4-Trichlorobenzene	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.24	mg/kg	UJ	ERPD-MS
1,2,4-Trimethylbenzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.89	0.026	mg/kg	J+	HR-SUR
1,3,5-Trimethylbenzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.33	0.026	mg/kg	J+	HR-SUR
1,4-Dichlorobenzene	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.24	mg/kg	UJ	ERPD-MS
1,4-Dichlorobenzene	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.24	mg/kg	UJ	ERPD-MS
1,4-Dichlorobenzene	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	2.4	mg/kg	UJ	ERPD-MS
1,4-Dichlorobenzene	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.24	mg/kg	UJ	ERPD-MS
2,4-Dinitrotoluene	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.49	mg/kg	UJ	ERPD-MS
2,4-Dinitrotoluene	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.48	mg/kg	UJ	ERPD-MS
2,4-Dinitrotoluene	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	4.9	mg/kg	UJ	ERPD-MS
2,4-Dinitrotoluene	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.48	mg/kg	UJ	ERPD-MS
2-Chlorophenol	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.24	mg/kg	UJ	ERPD-MS
2-Chlorophenol	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.24	mg/kg	UJ	ERPD-MS
2-Chlorophenol	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	2.4	mg/kg	UJ	ERPD-MS
2-Chlorophenol	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.24	mg/kg	UJ	ERPD-MS

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
4-Chloro-3-Methylphenol	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.49	mg/kg	UJ	ERPD-MS
4-Chloro-3-Methylphenol	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.48	mg/kg	UJ	ERPD-MS
4-Chloro-3-Methylphenol	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	4.9	mg/kg	UJ	ERPD-MS
4-Chloro-3-Methylphenol	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.48	mg/kg	UJ	ERPD-MS
4-Nitrophenol	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.39	mg/kg	UJ	ERPD-MS
4-Nitrophenol	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.39	mg/kg	UJ	ERPD-MS
4-Nitrophenol	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	3.9	mg/kg	UJ	ERPD-MS
4-Nitrophenol	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.38	mg/kg	UJ	ERPD-MS
4-Nitrophenol	SW8270C	FB01-101922	2210B61-001C	ND	10	µg/L	UJ	ERPD-LCS, LR-LCS
4-Nitrophenol	SW8270C	EB01-101922	2210B61-002C	ND	10	µg/L	UJ	ERPD-LCS, LR-LCS
4-Nitrophenol	SW8270C	FB01-102022	2210B61-004C	ND	10	µg/L	UJ	ERPD-LCS, LR-LCS
4-Nitrophenol	SW8270C	EB01-102022	2210B61-005C	ND	10	µg/L	UJ	ERPD-LCS, LR-LCS
4-Nitrophenol	SW8270C	EB01-102122	2210B61-018C	ND	10	µg/L	UJ	ERPD-LCS, LR-LCS
Acenaphthene	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.24	mg/kg	UJ	ERPD-MS
Acenaphthene	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.24	mg/kg	UJ	ERPD-MS
Acenaphthene	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	2.4	mg/kg	UJ	ERPD-MS
Acenaphthene	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.24	mg/kg	UJ	ERPD-MS
Benzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.059	0.013	mg/kg	J+	HR-SUR
Ethylbenzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.28	0.026	mg/kg	J+	HR-SUR
Isopropylbenzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.11	0.026	mg/kg	J+	HR-SUR
Naphthalene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.058	0.051	mg/kg	J+	HR-SUR
n-Butylbenzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.086	0.077	mg/kg	J+	HR-SUR
N-Nitrosodi-n-propylamine	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.39	mg/kg	UJ	ERPD-MS
N-Nitrosodi-n-propylamine	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.39	mg/kg	UJ	ERPD-MS
N-Nitrosodi-n-propylamine	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	3.9	mg/kg	UJ	ERPD-MS
N-Nitrosodi-n-propylamine	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.38	mg/kg	UJ	ERPD-MS
n-Propylbenzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.17	0.026	mg/kg	J+	HR-SUR

Analyte	Method	Field Sample ID	Lab Sample ID	Result	Limit	Units	Reviewer Qualifier	DV Flag Reasons
Pentachlorophenol	SW8270C	FB01-101922	2210B61-001C	ND	40	µg/L	UJ	ERPD-LCS
Pentachlorophenol	SW8270C	EB01-101922	2210B61-002C	ND	40	µg/L	UJ	ERPD-LCS
Pentachlorophenol	SW8270C	FB01-102022	2210B61-004C	ND	40	µg/L	UJ	ERPD-LCS
Pentachlorophenol	SW8270C	EB01-102022	2210B61-005C	ND	40	µg/L	UJ	ERPD-LCS
Pentachlorophenol	SW8270C	EB01-102122	2210B61-018C	ND	40	µg/L	UJ	ERPD-LCS
Phenol	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.39	mg/kg	UJ	ERPD-MS
Phenol	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.39	mg/kg	UJ	ERPD-MS
Phenol	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	3.9	mg/kg	UJ	ERPD-MS
Phenol	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.38	mg/kg	UJ	ERPD-MS
p-Isopropyltoluene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.073	0.026	mg/kg	J+	HR-SUR
Pyrene	SW8270C	FD-BH-10 (5.2-6.2')	2210B61-019A	ND	0.20	mg/kg	UJ	ERPD-MS
Pyrene	SW8270C	FD-BH-10 (19-20')	2210B61-020A	ND	0.19	mg/kg	UJ	ERPD-MS
Pyrene	SW8270C	FD-BH-12 (10-11')	2210B61-021A	ND	2.0	mg/kg	UJ	ERPD-MS
Pyrene	SW8270C	FD-BH-11 (18-19')	2210B61-022A	ND	0.19	mg/kg	UJ	ERPD-MS
Pyrene	SW8270C	FB01-101922	2210B61-001C	ND	10	µg/L	UJ	ERPD-LCS
Pyrene	SW8270C	EB01-101922	2210B61-002C	ND	10	µg/L	UJ	ERPD-LCS
Pyrene	SW8270C	FB01-102022	2210B61-004C	ND	10	µg/L	UJ	ERPD-LCS
Pyrene	SW8270C	EB01-102022	2210B61-005C	ND	10	µg/L	UJ	ERPD-LCS
Pyrene	SW8270C	EB01-102122	2210B61-018C	ND	10	µg/L	UJ	ERPD-LCS
sec-Butylbenzene	SW8260B	FD-BH-8 (9-10')	2210b61-016a	0.077	0.026	mg/kg	J+	HR-SUR
TPH GRO	SW8015	FD-BH-9 (6.5-7.5')	2210b61-011a	10	2.5	mg/kg	J+	HR-SUR
TPH GRO	SW8015	FD-BH-8 (9-10')	2210b61-016a	53	2.6	mg/kg	J+	HR-SUR
TPH GRO	SW8015	FD-BH-10 (5.2-6.2')	2210b61-019a	740	15	mg/kg	J+	HR-SUR
TPH GRO	SW8015	BD01-102022	2210b61-006a	4.4	2.5	mg/kg	J	ERPD-FD
TPH GRO	SW8015	FD-BH-9 (7.5-8.5')	2210b61-012a	19	2.5	mg/kg	J+	ERPD-FD, HR-SUR
Xylenes, Total	SW8260B	FD-BH-8 (9-10')	2210b61-016a	1.7	0.051	mg/kg	J+	HR-SUR

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 201683

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 201683
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
scwells	Accepted for Records Retention Purposes Only	3/28/2023