



ANALYTICAL REPORT

Lab Number:	L2243669
Client:	Tetra Tech Inc - Honolulu 737 Bishop Street, Suite 2340 Pacific Guardian Center, Mauka Tower Honolulu, HI 96813-3201
ATTN:	Eric Jensen
Phone:	(808) 441-4784
Project Name:	HDOH RED HILL
Project Number:	103S518817512
Report Date:	09/08/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2243669-01	PRODUCT SAMPLE #1 / (JP-5)	OIL	Not Specified	08/02/22 10:44	08/12/22
L2243669-02	PRODUCT SAMPLE #2 / (F-24)	OIL	Not Specified	08/01/22 13:45	08/12/22
L2243669-03	PRODUCT SAMPLE #3 / (F-76)	OIL	Not Specified	08/02/22 10:27	08/12/22
L2243669-04	PRODUCT SAMPLE #4 / (GWS)	OIL	Not Specified	11/24/21 10:00	08/12/22

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

PIANO Volatile Organics

L2243669-01D through -04D: The samples have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the samples.

L2243669-01D2, -02D2, and -04D2: The samples were re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

Semivolatile Organics

L2243669-01D, -02D, -03D, and -04D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2243669-01D: The surrogate recovery is outside the individual acceptance criteria for nitrobenzene-d5 (157%), but within the overall method allowances. The results of the original analysis are reported; however, all associated compounds are considered to have a potential bias.

L2243669-02D: The surrogate recovery is outside the individual acceptance criteria for nitrobenzene-d5 (243%), but within the overall method allowances. The results of the original analysis are reported; however, all associated compounds are considered to have a potential bias.

L2243669-03D: The surrogate recovery is outside the individual acceptance criteria for nitrobenzene-d5 (151%), but within the overall method allowances. The results of the original analysis are reported; however, all associated compounds are considered to have a potential bias.

L2243669-04D: The surrogate recovery is outside the individual acceptance criteria for nitrobenzene-d5 (251%), but within the overall method allowances. The results of the original analysis are reported; however, all associated compounds are considered to have a potential bias.

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Case Narrative (continued)

The WG1682567-2/-3 LCS/LCSD recoveries, associated with L2243669, are above the acceptance criteria for n-nitrosodimethylamine (109%/105%), pyridine (110%/107%), benzaldehyde (91%/94%), hexachloroethane (102%/100%), 2,4-dimethylphenol (133%/137%), benzoic acid (552%/564%), hexachlorocyclopentadiene (92%/92%), 2,4-dinitrophenol (121%/117%) and benzidine (139%/138%); however, the associated samples are non-detect to the RL for these target analytes. The results of the original analysis are reported.

Alkylated PAHs

L2243669-01, -02 and -04: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

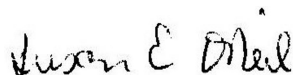
The continuing calibration verification WG1683911-4 exceeded the 24hr frequency criteria from the previous CCV due to instrument error; however, less than 10 field samples were injected between. The calibration was accepted and no further action was taken.

Saturated Hydrocarbons

L2243669-01D and -04D: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Susan O'Neil

Title: Technical Director/Representative

Date: 09/08/22

ORGANICS

VOLATILES

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-01 D2
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8260B
 Analytical Date: 08/19/22 11:07
 Analyst: RY
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Decane (C10)	18100		mg/kg	1670	227.	200
Undecane	42400		mg/kg	1670	186.	200
Dodecane (C12)	41000		mg/kg	4180	550.	200
Tridecane	30300		mg/kg	4180	1160	200
Tetradecane (C14)	20300		mg/kg	4180	512.	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	117		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	94		70-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8260B
 Analytical Date: 08/18/22 22:01
 Analyst: RY
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		mg/kg	83.7	12.4	10
Isopentane	ND		mg/kg	83.7	15.3	10
1-Pentene	ND		mg/kg	83.7	15.3	10
2-Methyl-1-Butene	ND		mg/kg	83.7	13.0	10
Pentane	ND		mg/kg	83.7	26.1	10
trans-2-Pentene	ND		mg/kg	83.7	11.3	10
Isoprene	ND		mg/kg	83.7	14.9	10
cis-2-Pentene	ND		mg/kg	83.7	13.5	10
Tertiary Butanol	ND		mg/kg	1050	136.	10
2,2-Dimethylbutane	ND		mg/kg	83.7	25.8	10
4-Methyl-1-pentene	ND		mg/kg	83.7	13.0	10
Cyclopentane	ND		mg/kg	83.7	21.7	10
2,3-Dimethylbutane	ND		mg/kg	83.7	34.6	10
2-Methylpentane	ND		mg/kg	83.7	22.7	10
Methyl tert butyl ether	ND		mg/kg	83.7	17.2	10
3-Methylpentane	ND		mg/kg	83.7	13.3	10
1-Hexene	ND		mg/kg	83.7	11.8	10
n-Hexane	26.2	J	mg/kg	83.7	13.8	10
Isopropyl Ether	ND		mg/kg	83.7	10.1	10
trans-2-Hexene	ND		mg/kg	83.7	10.9	10
2-Methyl-2-pentene	ND		mg/kg	83.7	12.8	10
cis-2-Hexene	ND		mg/kg	83.7	11.3	10
Ethyl-Tert-Butyl-Ether	ND		mg/kg	83.7	12.7	10
2,2-Dimethylpentane	ND		mg/kg	83.7	11.2	10
Methylcyclopentane	16.5	J	mg/kg	83.7	11.2	10
2,4-Dimethylpentane	ND		mg/kg	83.7	10.3	10
2,2,3-Trimethylbutane	ND		mg/kg	83.7	11.3	10
1,2-Dichloroethane	ND		mg/kg	83.7	12.3	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	ND		mg/kg	83.7	15.6	10
Cyclohexane	24.0	J	mg/kg	83.7	10.3	10
2-Methylhexane	17.8	J	mg/kg	83.7	13.2	10
Benzene	22.3	J	mg/kg	83.7	12.8	10
2,3-Dimethylpentane	ND		mg/kg	83.7	11.1	10
Thiophene	ND		mg/kg	83.7	11.9	10
1,1-Dimethylcyclopentane	ND		mg/kg	83.7	10.0	10
3-Methylhexane	26.6	J	mg/kg	83.7	13.4	10
Tertiary-Amyl Methyl Ether	ND		mg/kg	83.7	10.3	10
3-Ethylpentane	ND		mg/kg	83.7	12.1	10
1-Heptene/1,2-DMCP (trans)	35.8	J	mg/kg	167	24.5	10
Isooctane	ND		mg/kg	83.7	9.12	10
trans-3-Heptene	ND		mg/kg	83.7	13.0	10
Heptane	90.8		mg/kg	83.7	14.6	10
trans-2-Heptene	ND		mg/kg	83.7	10.7	10
cis-2-Heptene	ND		mg/kg	83.7	16.2	10
2,2-Dimethylhexane	ND		mg/kg	83.7	12.1	10
Methylcyclohexane	202		mg/kg	83.7	11.3	10
2,5-Dimethylhexane	ND		mg/kg	83.7	14.6	10
2,4-Dimethylhexane	15.8	J	mg/kg	83.7	10.2	10
Ethylcyclopentane	17.0	J	mg/kg	83.7	11.1	10
2,2,3-Trimethylpentane	ND		mg/kg	83.7	14.5	10
2,3,4-Trimethylpentane	ND		mg/kg	83.7	10.9	10
Xylene (Total) ¹	2340		mg/kg	83.7	8.74	10
2,3,3-Trimethylpentane	ND		mg/kg	83.7	16.6	10
2,3-Dimethylhexane	21.5	J	mg/kg	83.7	20.3	10
2-Methylheptane	171		mg/kg	83.7	14.1	10
4-Methylheptane	49.8	J	mg/kg	83.7	14.4	10
3-Methylheptane	141		mg/kg	83.7	11.9	10
3-Ethylhexane	ND		mg/kg	83.7	15.0	10
Toluene	184		mg/kg	83.7	11.3	10
2-Methylthiophene	ND		mg/kg	83.7	7.11	10
1,4-Dimethylcyclohexane (trans)	92.8		mg/kg	83.7	10.9	10
3-Methylthiophene	ND		mg/kg	83.7	9.79	10
1-Octene	ND		mg/kg	209	12.8	10
Octane	716		mg/kg	83.7	9.83	10
1,2-Dimethylcyclohexane (trans)	223		mg/kg	83.7	12.3	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dibromoethane	ND		mg/kg	83.7	13.4	10
cis-2-Octene	ND		mg/kg	83.7	9.58	10
Isopropylcyclopentane	ND		mg/kg	83.7	12.2	10
1,2-Dimethylcyclohexane (cis)	113		mg/kg	83.7	24.3	10
2,5-Dimethylheptane	177		mg/kg	83.7	14.0	10
3,5-Dimethylheptane	47.6	J	mg/kg	83.7	11.8	10
3,3-Dimethylheptane	19.3	J	mg/kg	83.7	10.1	10
1,1,4-Trimethylcyclohexane	ND		mg/kg	83.7	8.33	10
2,3-Dimethylheptane	344		mg/kg	83.7	9.54	10
3,4-Dimethylheptane	126		mg/kg	83.7	14.2	10
4-Methyloctane	350		mg/kg	83.7	14.0	10
2-Methyloctane	524		mg/kg	83.7	21.4	10
Ethylbenzene	301		mg/kg	83.7	9.04	10
2-Ethylthiophene	ND		mg/kg	83.7	7.36	10
3-Methyloctane	634		mg/kg	83.7	9.37	10
3,3-Diethylpentane	ND		mg/kg	83.7	9.75	10
p/m-Xylene	1510		mg/kg	167	15.9	10
1-Nonene	ND		mg/kg	209	11.3	10
trans-3-Nonene	ND		mg/kg	83.7	9.92	10
cis-3-Nonene	ND		mg/kg	83.7	15.6	10
Nonane (C9)	4110		mg/kg	83.7	13.0	10
Styrene	ND		mg/kg	83.7	8.45	10
o-Xylene	826		mg/kg	83.7	8.74	10
2-Nonene	ND		mg/kg	209	10.6	10
Isopropylcyclohexane	ND		mg/kg	83.7	8.87	10
Isopropylbenzene	202		mg/kg	83.7	7.82	10
3,3-Dimethyloctane	129		mg/kg	83.7	8.45	10
n-Propylbenzene	591		mg/kg	83.7	7.40	10
2-Methylnonane	1840		mg/kg	83.7	11.8	10
3-Methylnonane	1780		mg/kg	83.7	11.7	10
1-Methyl-3-Ethylbenzene	1470		mg/kg	83.7	13.2	10
1-Methyl-4-Ethylbenzene	745		mg/kg	83.7	11.8	10
1,3,5-Trimethylbenzene	1300		mg/kg	83.7	9.62	10
1-Decene	ND		mg/kg	83.7	10.9	10
Isobutylcyclohexane	ND		mg/kg	83.7	6.82	10
1-Methyl-2-Ethylbenzene	977		mg/kg	83.7	7.11	10
Decane (C10)	15800	E	mg/kg	83.7	11.3	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
tert-Butylbenzene	38.0	J	mg/kg	83.7	8.83	10
1,2,4-Trimethylbenzene	4410		mg/kg	83.7	8.66	10
Isobutylbenzene	226		mg/kg	83.7	11.3	10
sec-Butylbenzene	439		mg/kg	83.7	10.8	10
1-Methyl-3-Isopropylbenzene	642		mg/kg	83.7	10.8	10
1-Methyl-4-Isopropylbenzene	545		mg/kg	83.7	8.87	10
1,2,3-Trimethylbenzene	2400		mg/kg	83.7	9.33	10
1-Methyl-2-Isopropylbenzene	123		mg/kg	83.7	9.08	10
Indane	364		mg/kg	83.7	5.15	10
1,3-Diethylbenzene	584		mg/kg	83.7	10.4	10
1-Methyl-3-N-Propylbenzene	1920		mg/kg	83.7	8.45	10
Indene	75.1	J	mg/kg	83.7	4.85	10
1-Methyl-4-N-Propylbenzene	918		mg/kg	83.7	10.5	10
n-Butylbenzene	884		mg/kg	83.7	8.24	10
1,2-Dimethyl-4-Ethylbenzene	1550		mg/kg	83.7	10.2	10
1,2-Diethylbenzene	342		mg/kg	83.7	12.4	10
1-Methyl-2-N-Propylbenzene	1500		mg/kg	83.7	10.4	10
1,4-Dimethyl-2-Ethylbenzene	1460		mg/kg	83.7	7.82	10
Undecane	30600	E	mg/kg	83.7	9.29	10
1,3-Dimethyl-4-Ethylbenzene	1710		mg/kg	83.7	8.12	10
1,3-Dimethyl-5-Ethylbenzene	2020		mg/kg	83.7	9.87	10
1,3-Dimethyl-2-Ethylbenzene	350		mg/kg	83.7	6.23	10
1,2-Dimethyl-3-Ethylbenzene	984		mg/kg	83.7	5.31	10
1,2,4,5-Tetramethylbenzene	1310		mg/kg	83.7	6.48	10
1,2,3,5-Tetramethylbenzene	2200		mg/kg	83.7	6.36	10
N-Pentylbenzene	522		mg/kg	83.7	10.4	10
1,2,3,4-Tetramethylbenzene	2210		mg/kg	83.7	8.95	10
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	83.7	11.9	10
Dodecane (C12)	32600	E	mg/kg	209	27.5	10
1,3,5-Triethylbenzene	ND		mg/kg	83.7	15.9	10
Naphthalene	2930		mg/kg	83.7	34.9	10
Benzo thiophene	ND		mg/kg	83.7	44.2	10
1,2,4-Triethylbenzene	ND		mg/kg	83.7	14.2	10
Hexylbenzene	616		mg/kg	83.7	16.1	10
MMT	ND		mg/kg	209	53.8	10
Tridecane	30900	E	mg/kg	209	58.3	10
2-Methylnaphthalene	5270		mg/kg	209	55.3	10

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1-Methylnaphthalene	3450		mg/kg	209	61.4	10
Tetradecane (C14)	16300	E	mg/kg	209	25.6	10
Pentadecane	1680		mg/kg	209	46.6	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	124		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	91		70-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-02 D2
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8260B
 Analytical Date: 08/19/22 12:18
 Analyst: RY
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Nonane (C9)	12300		mg/kg	1930	301.	200
Decane (C10)	26000		mg/kg	1930	262.	200
Undecane	26300		mg/kg	1930	215.	200
Dodecane (C12)	23400		mg/kg	4840	635.	200
Tridecane	17500		mg/kg	4840	1350	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	116		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	95		70-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8260B
 Analytical Date: 08/18/22 23:12
 Analyst: RY
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		mg/kg	96.7	14.4	10
Isopentane	ND		mg/kg	96.7	17.7	10
1-Pentene	ND		mg/kg	96.7	17.6	10
2-Methyl-1-Butene	ND		mg/kg	96.7	15.0	10
Pentane	ND		mg/kg	96.7	30.2	10
trans-2-Pentene	ND		mg/kg	96.7	13.0	10
Isoprene	ND		mg/kg	96.7	17.3	10
cis-2-Pentene	ND		mg/kg	96.7	15.6	10
Tertiary Butanol	ND		mg/kg	1210	157.	10
2,2-Dimethylbutane	ND		mg/kg	96.7	29.8	10
4-Methyl-1-pentene	ND		mg/kg	96.7	15.0	10
Cyclopentane	ND		mg/kg	96.7	25.1	10
2,3-Dimethylbutane	ND		mg/kg	96.7	39.9	10
2-Methylpentane	79.5	J	mg/kg	96.7	26.2	10
Methyl tert butyl ether	ND		mg/kg	96.7	19.9	10
3-Methylpentane	67.6	J	mg/kg	96.7	15.3	10
1-Hexene	ND		mg/kg	96.7	13.6	10
n-Hexane	226		mg/kg	96.7	15.9	10
Isopropyl Ether	ND		mg/kg	96.7	11.7	10
trans-2-Hexene	ND		mg/kg	96.7	12.6	10
2-Methyl-2-pentene	ND		mg/kg	96.7	14.8	10
cis-2-Hexene	ND		mg/kg	96.7	13.1	10
Ethyl-Tert-Butyl-Ether	ND		mg/kg	96.7	14.6	10
2,2-Dimethylpentane	ND		mg/kg	96.7	13.0	10
Methylcyclopentane	252		mg/kg	96.7	13.0	10
2,4-Dimethylpentane	23.8	J	mg/kg	96.7	11.9	10
2,2,3-Trimethylbutane	ND		mg/kg	96.7	13.0	10
1,2-Dichloroethane	ND		mg/kg	96.7	14.3	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	ND		mg/kg	96.7	18.0	10
Cyclohexane	446		mg/kg	96.7	11.9	10
2-Methylhexane	278		mg/kg	96.7	15.2	10
Benzene	112		mg/kg	96.7	14.7	10
2,3-Dimethylpentane	116		mg/kg	96.7	12.8	10
Thiophene	ND		mg/kg	96.7	13.7	10
1,1-Dimethylcyclopentane	ND		mg/kg	96.7	11.6	10
3-Methylhexane	353		mg/kg	96.7	15.5	10
Tertiary-Amyl Methyl Ether	ND		mg/kg	96.7	11.9	10
3-Ethylpentane	37.8	J	mg/kg	96.7	14.0	10
1-Heptene/1,2-DMCP (trans)	465		mg/kg	193	28.3	10
Isooctane	ND		mg/kg	96.7	10.5	10
trans-3-Heptene	ND		mg/kg	96.7	15.0	10
Heptane	1260		mg/kg	96.7	16.8	10
trans-2-Heptene	ND		mg/kg	96.7	12.4	10
cis-2-Heptene	ND		mg/kg	96.7	18.7	10
2,2-Dimethylhexane	ND		mg/kg	96.7	14.0	10
Methylcyclohexane	2430		mg/kg	96.7	13.0	10
2,5-Dimethylhexane	133		mg/kg	96.7	16.8	10
2,4-Dimethylhexane	190		mg/kg	96.7	11.8	10
Ethylcyclopentane	249		mg/kg	96.7	12.8	10
2,2,3-Trimethylpentane	ND		mg/kg	96.7	16.8	10
2,3,4-Trimethylpentane	44.4	J	mg/kg	96.7	12.6	10
Xylene (Total) ¹	8820		mg/kg	96.7	10.1	10
2,3,3-Trimethylpentane	23.0	J	mg/kg	96.7	19.2	10
2,3-Dimethylhexane	195		mg/kg	96.7	23.4	10
2-Methylheptane	1670		mg/kg	96.7	16.3	10
4-Methylheptane	502		mg/kg	96.7	16.6	10
3-Methylheptane	1140		mg/kg	96.7	13.8	10
3-Ethylhexane	189		mg/kg	96.7	17.3	10
Toluene	1640		mg/kg	96.7	13.1	10
2-Methylthiophene	ND		mg/kg	96.7	8.22	10
1,4-Dimethylcyclohexane (trans)	638		mg/kg	96.7	12.6	10
3-Methylthiophene	ND		mg/kg	96.7	11.3	10
1-Octene	ND		mg/kg	242	14.8	10
Octane	4360		mg/kg	96.7	11.4	10
1,2-Dimethylcyclohexane (trans)	1310		mg/kg	96.7	14.2	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dibromoethane	ND		mg/kg	96.7	15.5	10
cis-2-Octene	ND		mg/kg	96.7	11.1	10
Isopropylcyclopentane	ND		mg/kg	96.7	14.2	10
1,2-Dimethylcyclohexane (cis)	922		mg/kg	96.7	28.1	10
2,5-Dimethylheptane	2060		mg/kg	96.7	16.2	10
3,5-Dimethylheptane	410		mg/kg	96.7	13.6	10
3,3-Dimethylheptane	113		mg/kg	96.7	11.7	10
1,1,4-Trimethylcyclohexane	ND		mg/kg	96.7	9.62	10
2,3-Dimethylheptane	1500		mg/kg	96.7	11.0	10
3,4-Dimethylheptane	996		mg/kg	96.7	16.4	10
4-Methyloctane	2580		mg/kg	96.7	16.2	10
2-Methyloctane	4150		mg/kg	96.7	24.8	10
Ethylbenzene	1310		mg/kg	96.7	10.4	10
2-Ethylthiophene	ND		mg/kg	96.7	8.51	10
3-Methyloctane	4270		mg/kg	96.7	10.8	10
3,3-Diethylpentane	ND		mg/kg	96.7	11.3	10
p/m-Xylene	6070		mg/kg	193	18.4	10
1-Nonene	ND		mg/kg	242	13.0	10
trans-3-Nonene	ND		mg/kg	96.7	11.5	10
cis-3-Nonene	ND		mg/kg	96.7	18.1	10
Nonane (C9)	14000	E	mg/kg	96.7	15.0	10
Styrene	ND		mg/kg	96.7	9.77	10
o-Xylene	2750		mg/kg	96.7	10.1	10
2-Nonene	ND		mg/kg	242	12.3	10
Isopropylcyclohexane	ND		mg/kg	96.7	10.2	10
Isopropylbenzene	503		mg/kg	96.7	9.04	10
3,3-Dimethyloctane	357		mg/kg	96.7	9.77	10
n-Propylbenzene	1770		mg/kg	96.7	8.56	10
2-Methylnonane	5640		mg/kg	96.7	13.7	10
3-Methylnonane	5220		mg/kg	96.7	13.5	10
1-Methyl-3-Ethylbenzene	4380		mg/kg	96.7	15.3	10
1-Methyl-4-Ethylbenzene	2110		mg/kg	96.7	13.6	10
1,3,5-Trimethylbenzene	3360		mg/kg	96.7	11.1	10
1-Decene	ND		mg/kg	96.7	12.6	10
Isobutylcyclohexane	ND		mg/kg	96.7	7.88	10
1-Methyl-2-Ethylbenzene	2090		mg/kg	96.7	8.22	10
Decane (C10)	26400	E	mg/kg	96.7	13.1	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
tert-Butylbenzene	44.4	J	mg/kg	96.7	10.2	10
1,2,4-Trimethylbenzene	9530		mg/kg	96.7	10.0	10
Isobutylbenzene	458		mg/kg	96.7	13.0	10
sec-Butylbenzene	799		mg/kg	96.7	12.5	10
1-Methyl-3-Isopropylbenzene	1160		mg/kg	96.7	12.5	10
1-Methyl-4-Isopropylbenzene	856		mg/kg	96.7	10.2	10
1,2,3-Trimethylbenzene	4000		mg/kg	96.7	10.8	10
1-Methyl-2-Isopropylbenzene	197		mg/kg	96.7	10.5	10
Indane	1420		mg/kg	96.7	5.95	10
1,3-Diethylbenzene	952		mg/kg	96.7	12.0	10
1-Methyl-3-N-Propylbenzene	2910		mg/kg	96.7	9.77	10
Indene	113		mg/kg	96.7	5.61	10
1-Methyl-4-N-Propylbenzene	1360		mg/kg	96.7	12.1	10
n-Butylbenzene	1590		mg/kg	96.7	9.53	10
1,2-Dimethyl-4-Ethylbenzene	2250		mg/kg	96.7	11.8	10
1,2-Diethylbenzene	392		mg/kg	96.7	14.3	10
1-Methyl-2-N-Propylbenzene	1620		mg/kg	96.7	12.0	10
1,4-Dimethyl-2-Ethylbenzene	1580		mg/kg	96.7	9.04	10
Undecane	21600	E	mg/kg	96.7	10.7	10
1,3-Dimethyl-4-Ethylbenzene	1790		mg/kg	96.7	9.38	10
1,3-Dimethyl-5-Ethylbenzene	2260		mg/kg	96.7	11.4	10
1,3-Dimethyl-2-Ethylbenzene	384		mg/kg	96.7	7.20	10
1,2-Dimethyl-3-Ethylbenzene	894		mg/kg	96.7	6.14	10
1,2,4,5-Tetramethylbenzene	1220		mg/kg	96.7	7.50	10
1,2,3,5-Tetramethylbenzene	2180		mg/kg	96.7	7.35	10
N-Pentylbenzene	1160		mg/kg	96.7	12.0	10
1,2,3,4-Tetramethylbenzene	1700		mg/kg	96.7	10.3	10
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	96.7	13.8	10
Dodecane (C12)	19500	E	mg/kg	242	31.8	10
1,3,5-Triethylbenzene	ND		mg/kg	96.7	18.4	10
Naphthalene	2040		mg/kg	96.7	40.4	10
Benzo thiophene	ND		mg/kg	96.7	51.1	10
1,2,4-Triethylbenzene	ND		mg/kg	96.7	16.4	10
Hexylbenzene	814		mg/kg	96.7	18.6	10
MMT	ND		mg/kg	242	62.2	10
Tridecane	18300	E	mg/kg	242	67.4	10
2-Methylnaphthalene	3820		mg/kg	242	63.9	10

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1-Methylnaphthalene	2460		mg/kg	242	71.0	10
Tetradecane (C14)	9650		mg/kg	242	29.6	10
Pentadecane	1480		mg/kg	242	53.9	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	116		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	100		70-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8260B
 Analytical Date: 08/19/22 00:24
 Analyst: RY
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		mg/kg	90.7	13.5	10
Isopentane	ND		mg/kg	90.7	16.6	10
1-Pentene	ND		mg/kg	90.7	16.6	10
2-Methyl-1-Butene	ND		mg/kg	90.7	14.1	10
Pentane	ND		mg/kg	90.7	28.3	10
trans-2-Pentene	ND		mg/kg	90.7	12.2	10
Isoprene	ND		mg/kg	90.7	16.2	10
cis-2-Pentene	ND		mg/kg	90.7	14.6	10
Tertiary Butanol	ND		mg/kg	1130	147.	10
2,2-Dimethylbutane	ND		mg/kg	90.7	28.0	10
4-Methyl-1-pentene	ND		mg/kg	90.7	14.1	10
Cyclopentane	ND		mg/kg	90.7	23.5	10
2,3-Dimethylbutane	ND		mg/kg	90.7	37.5	10
2-Methylpentane	49.7	J	mg/kg	90.7	24.6	10
Methyl tert butyl ether	ND		mg/kg	90.7	18.7	10
3-Methylpentane	34.3	J	mg/kg	90.7	14.4	10
1-Hexene	ND		mg/kg	90.7	12.7	10
n-Hexane	49.3	J	mg/kg	90.7	14.9	10
Isopropyl Ether	ND		mg/kg	90.7	11.0	10
trans-2-Hexene	ND		mg/kg	90.7	11.8	10
2-Methyl-2-pentene	ND		mg/kg	90.7	13.9	10
cis-2-Hexene	ND		mg/kg	90.7	12.3	10
Ethyl-Tert-Butyl-Ether	ND		mg/kg	90.7	13.7	10
2,2-Dimethylpentane	ND		mg/kg	90.7	12.2	10
Methylcyclopentane	88.4	J	mg/kg	90.7	12.2	10
2,4-Dimethylpentane	14.7	J	mg/kg	90.7	11.2	10
2,2,3-Trimethylbutane	ND		mg/kg	90.7	12.2	10
1,2-Dichloroethane	ND		mg/kg	90.7	13.4	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	ND		mg/kg	90.7	16.9	10
Cyclohexane	54.8	J	mg/kg	90.7	11.2	10
2-Methylhexane	131		mg/kg	90.7	14.3	10
Benzene	27.7	J	mg/kg	90.7	13.8	10
2,3-Dimethylpentane	32.9	J	mg/kg	90.7	12.0	10
Thiophene	ND		mg/kg	90.7	12.9	10
1,1-Dimethylcyclopentane	ND		mg/kg	90.7	10.9	10
3-Methylhexane	115		mg/kg	90.7	14.5	10
Tertiary-Amyl Methyl Ether	ND		mg/kg	90.7	11.2	10
3-Ethylpentane	ND		mg/kg	90.7	13.1	10
1-Heptene/1,2-DMCP (trans)	88.7	J	mg/kg	181	26.5	10
Isooctane	ND		mg/kg	90.7	9.89	10
trans-3-Heptene	ND		mg/kg	90.7	14.1	10
Heptane	149		mg/kg	90.7	15.8	10
trans-2-Heptene	ND		mg/kg	90.7	11.6	10
cis-2-Heptene	ND		mg/kg	90.7	17.6	10
2,2-Dimethylhexane	ND		mg/kg	90.7	13.2	10
Methylcyclohexane	410		mg/kg	90.7	12.2	10
2,5-Dimethylhexane	51.9	J	mg/kg	90.7	15.8	10
2,4-Dimethylhexane	63.8	J	mg/kg	90.7	11.0	10
Ethylcyclopentane	83.9	J	mg/kg	90.7	12.0	10
2,2,3-Trimethylpentane	ND		mg/kg	90.7	15.7	10
2,3,4-Trimethylpentane	ND		mg/kg	90.7	11.8	10
Xylene (Total) ¹	1000		mg/kg	90.7	9.48	10
2,3,3-Trimethylpentane	ND		mg/kg	90.7	18.0	10
2,3-Dimethylhexane	43.8	J	mg/kg	90.7	22.0	10
2-Methylheptane	297		mg/kg	90.7	15.3	10
4-Methylheptane	98.8		mg/kg	90.7	15.6	10
3-Methylheptane	260		mg/kg	90.7	12.9	10
3-Ethylhexane	38.0	J	mg/kg	90.7	16.2	10
Toluene	202		mg/kg	90.7	12.3	10
2-Methylthiophene	ND		mg/kg	90.7	7.71	10
1,4-Dimethylcyclohexane (trans)	120		mg/kg	90.7	11.8	10
3-Methylthiophene	ND		mg/kg	90.7	10.6	10
1-Octene	ND		mg/kg	227	13.9	10
Octane	369		mg/kg	90.7	10.7	10
1,2-Dimethylcyclohexane (trans)	153		mg/kg	90.7	13.3	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dibromoethane	ND		mg/kg	90.7	14.5	10
cis-2-Octene	ND		mg/kg	90.7	10.4	10
Isopropylcyclopentane	44.2	J	mg/kg	90.7	13.3	10
1,2-Dimethylcyclohexane (cis)	165		mg/kg	90.7	26.4	10
2,5-Dimethylheptane	292		mg/kg	90.7	15.2	10
3,5-Dimethylheptane	54.0	J	mg/kg	90.7	12.8	10
3,3-Dimethylheptane	ND		mg/kg	90.7	11.0	10
1,1,4-Trimethylcyclohexane	ND		mg/kg	90.7	9.03	10
2,3-Dimethylheptane	146		mg/kg	90.7	10.3	10
3,4-Dimethylheptane	127		mg/kg	90.7	15.4	10
4-Methyloctane	313		mg/kg	90.7	15.2	10
2-Methyloctane	593		mg/kg	90.7	23.2	10
Ethylbenzene	151		mg/kg	90.7	9.80	10
2-Ethylthiophene	ND		mg/kg	90.7	7.98	10
3-Methyloctane	542		mg/kg	90.7	10.2	10
3,3-Diethylpentane	ND		mg/kg	90.7	10.6	10
p/m-Xylene	668		mg/kg	181	17.3	10
1-Nonene	ND		mg/kg	227	12.2	10
trans-3-Nonene	ND		mg/kg	90.7	10.8	10
cis-3-Nonene	ND		mg/kg	90.7	17.0	10
Nonane (C9)	1160		mg/kg	90.7	14.1	10
Styrene	ND		mg/kg	90.7	9.16	10
o-Xylene	334		mg/kg	90.7	9.48	10
2-Nonene	ND		mg/kg	227	11.5	10
Isopropylcyclohexane	ND		mg/kg	90.7	9.62	10
Isopropylbenzene	40.4	J	mg/kg	90.7	8.48	10
3,3-Dimethyloctane	34.8	J	mg/kg	90.7	9.16	10
n-Propylbenzene	234		mg/kg	90.7	8.03	10
2-Methylnonane	894		mg/kg	90.7	12.8	10
3-Methylnonane	846		mg/kg	90.7	12.6	10
1-Methyl-3-Ethylbenzene	631		mg/kg	90.7	14.3	10
1-Methyl-4-Ethylbenzene	321		mg/kg	90.7	12.8	10
1,3,5-Trimethylbenzene	391		mg/kg	90.7	10.4	10
1-Decene	ND		mg/kg	90.7	11.8	10
Isobutylcyclohexane	ND		mg/kg	90.7	7.40	10
1-Methyl-2-Ethylbenzene	244		mg/kg	90.7	7.71	10
Decane (C10)	2050		mg/kg	90.7	12.3	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
tert-Butylbenzene	ND		mg/kg	90.7	9.57	10
1,2,4-Trimethylbenzene	1300		mg/kg	90.7	9.39	10
Isobutylbenzene	59.6	J	mg/kg	90.7	12.2	10
sec-Butylbenzene	68.0	J	mg/kg	90.7	11.8	10
1-Methyl-3-Isopropylbenzene	79.7	J	mg/kg	90.7	11.7	10
1-Methyl-4-Isopropylbenzene	60.7	J	mg/kg	90.7	9.62	10
1,2,3-Trimethylbenzene	393		mg/kg	90.7	10.1	10
1-Methyl-2-Isopropylbenzene	13.7	J	mg/kg	90.7	9.84	10
Indane	325		mg/kg	90.7	5.58	10
1,3-Diethylbenzene	160		mg/kg	90.7	11.3	10
1-Methyl-3-N-Propylbenzene	471		mg/kg	90.7	9.16	10
Indene	23.8	J	mg/kg	90.7	5.26	10
1-Methyl-4-N-Propylbenzene	249		mg/kg	90.7	11.3	10
n-Butylbenzene	313		mg/kg	90.7	8.94	10
1,2-Dimethyl-4-Ethylbenzene	410		mg/kg	90.7	11.1	10
1,2-Diethylbenzene	38.7	J	mg/kg	90.7	13.4	10
1-Methyl-2-N-Propylbenzene	188		mg/kg	90.7	11.3	10
1,4-Dimethyl-2-Ethylbenzene	271		mg/kg	90.7	8.48	10
Undecane	2300		mg/kg	90.7	10.1	10
1,3-Dimethyl-4-Ethylbenzene	280		mg/kg	90.7	8.80	10
1,3-Dimethyl-5-Ethylbenzene	478		mg/kg	90.7	10.7	10
1,3-Dimethyl-2-Ethylbenzene	41.0	J	mg/kg	90.7	6.76	10
1,2-Dimethyl-3-Ethylbenzene	118		mg/kg	90.7	5.76	10
1,2,4,5-Tetramethylbenzene	256		mg/kg	90.7	7.03	10
1,2,3,5-Tetramethylbenzene	406		mg/kg	90.7	6.90	10
N-Pentylbenzene	582		mg/kg	90.7	11.3	10
1,2,3,4-Tetramethylbenzene	158		mg/kg	90.7	9.71	10
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	90.7	12.9	10
Dodecane (C12)	2850		mg/kg	227	29.8	10
1,3,5-Triethylbenzene	ND		mg/kg	90.7	17.2	10
Naphthalene	161		mg/kg	90.7	37.9	10
Benzo thiophene	ND		mg/kg	90.7	48.0	10
1,2,4-Triethylbenzene	78.9	J	mg/kg	90.7	15.4	10
Hexylbenzene	393		mg/kg	90.7	17.5	10
MMT	ND		mg/kg	227	58.3	10
Tridecane	3400		mg/kg	227	63.2	10
2-Methylnaphthalene	361		mg/kg	227	60.0	10

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1-Methylnaphthalene	194	J	mg/kg	227	66.6	10
Tetradecane (C14)	3960		mg/kg	227	27.8	10
Pentadecane	2860		mg/kg	227	50.6	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	116		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	99		70-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-04 D2
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8260B
 Analytical Date: 08/19/22 14:41
 Analyst: RY
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
Decane (C10)	20900		mg/kg	1750	237.	200
Undecane	44800		mg/kg	1750	194.	200
Dodecane (C12)	39800		mg/kg	4370	575.	200
Tridecane	27700		mg/kg	4370	1220	200
Tetradecane (C14)	18000		mg/kg	4370	535.	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	116		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	96		70-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8260B
 Analytical Date: 08/19/22 01:35
 Analyst: RY
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3-Methyl-1-butene	ND		mg/kg	87.5	13.0	10
Isopentane	ND		mg/kg	87.5	16.0	10
1-Pentene	ND		mg/kg	87.5	16.0	10
2-Methyl-1-Butene	ND		mg/kg	87.5	13.6	10
Pentane	ND		mg/kg	87.5	27.3	10
trans-2-Pentene	ND		mg/kg	87.5	11.8	10
Isoprene	ND		mg/kg	87.5	15.6	10
cis-2-Pentene	ND		mg/kg	87.5	14.1	10
Tertiary Butanol	ND		mg/kg	1090	142.	10
2,2-Dimethylbutane	ND		mg/kg	87.5	27.0	10
4-Methyl-1-pentene	ND		mg/kg	87.5	13.6	10
Cyclopentane	ND		mg/kg	87.5	22.7	10
2,3-Dimethylbutane	ND		mg/kg	87.5	36.1	10
2-Methylpentane	ND		mg/kg	87.5	23.7	10
Methyl tert butyl ether	ND		mg/kg	87.5	18.0	10
3-Methylpentane	ND		mg/kg	87.5	13.9	10
1-Hexene	ND		mg/kg	87.5	12.3	10
n-Hexane	15.3	J	mg/kg	87.5	14.4	10
Isopropyl Ether	ND		mg/kg	87.5	10.6	10
trans-2-Hexene	ND		mg/kg	87.5	11.4	10
2-Methyl-2-pentene	ND		mg/kg	87.5	13.4	10
cis-2-Hexene	ND		mg/kg	87.5	11.8	10
Ethyl-Tert-Butyl-Ether	ND		mg/kg	87.5	13.2	10
2,2-Dimethylpentane	ND		mg/kg	87.5	11.8	10
Methylcyclopentane	ND		mg/kg	87.5	11.7	10
2,4-Dimethylpentane	ND		mg/kg	87.5	10.8	10
2,2,3-Trimethylbutane	ND		mg/kg	87.5	11.8	10
1,2-Dichloroethane	ND		mg/kg	87.5	12.9	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
3,3-Dimethylpentane	ND		mg/kg	87.5	16.3	10
Cyclohexane	ND		mg/kg	87.5	10.8	10
2-Methylhexane	ND		mg/kg	87.5	13.8	10
Benzene	15.6	J	mg/kg	87.5	13.3	10
2,3-Dimethylpentane	ND		mg/kg	87.5	11.6	10
Thiophene	ND		mg/kg	87.5	12.4	10
1,1-Dimethylcyclopentane	ND		mg/kg	87.5	10.5	10
3-Methylhexane	ND		mg/kg	87.5	14.0	10
Tertiary-Amyl Methyl Ether	ND		mg/kg	87.5	10.8	10
3-Ethylpentane	ND		mg/kg	87.5	12.6	10
1-Heptene/1,2-DMCP (trans)	ND		mg/kg	175	25.6	10
Isooctane	ND		mg/kg	87.5	9.54	10
trans-3-Heptene	ND		mg/kg	87.5	13.6	10
Heptane	53.3	J	mg/kg	87.5	15.2	10
trans-2-Heptene	ND		mg/kg	87.5	11.2	10
cis-2-Heptene	ND		mg/kg	87.5	16.9	10
2,2-Dimethylhexane	ND		mg/kg	87.5	12.7	10
Methylcyclohexane	126		mg/kg	87.5	11.8	10
2,5-Dimethylhexane	ND		mg/kg	87.5	15.2	10
2,4-Dimethylhexane	11.5	J	mg/kg	87.5	10.6	10
Ethylcyclopentane	12.7	J	mg/kg	87.5	11.6	10
2,2,3-Trimethylpentane	ND		mg/kg	87.5	15.2	10
2,3,4-Trimethylpentane	ND		mg/kg	87.5	11.4	10
Xylene (Total) ¹	2360		mg/kg	87.5	9.14	10
2,3,3-Trimethylpentane	ND		mg/kg	87.5	17.4	10
2,3-Dimethylhexane	ND		mg/kg	87.5	21.2	10
2-Methylheptane	159		mg/kg	87.5	14.8	10
4-Methylheptane	50.4	J	mg/kg	87.5	15.0	10
3-Methylheptane	130		mg/kg	87.5	12.5	10
3-Ethylhexane	20.7	J	mg/kg	87.5	15.7	10
Toluene	135		mg/kg	87.5	11.8	10
2-Methylthiophene	ND		mg/kg	87.5	7.44	10
1,4-Dimethylcyclohexane (trans)	88.5		mg/kg	87.5	11.4	10
3-Methylthiophene	ND		mg/kg	87.5	10.2	10
1-Octene	ND		mg/kg	219	13.4	10
Octane	734		mg/kg	87.5	10.3	10
1,2-Dimethylcyclohexane (trans)	193		mg/kg	87.5	12.9	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1,2-Dibromoethane	ND		mg/kg	87.5	14.0	10
cis-2-Octene	ND		mg/kg	87.5	10.0	10
Isopropylcyclopentane	ND		mg/kg	87.5	12.8	10
1,2-Dimethylcyclohexane (cis)	110		mg/kg	87.5	25.4	10
2,5-Dimethylheptane	200		mg/kg	87.5	14.6	10
3,5-Dimethylheptane	59.6	J	mg/kg	87.5	12.3	10
3,3-Dimethylheptane	23.8	J	mg/kg	87.5	10.6	10
1,1,4-Trimethylcyclohexane	ND		mg/kg	87.5	8.70	10
2,3-Dimethylheptane	399		mg/kg	87.5	9.97	10
3,4-Dimethylheptane	156		mg/kg	87.5	14.9	10
4-Methyloctane	388		mg/kg	87.5	14.6	10
2-Methyloctane	636		mg/kg	87.5	22.4	10
Ethylbenzene	312		mg/kg	87.5	9.45	10
2-Ethylthiophene	ND		mg/kg	87.5	7.70	10
3-Methyloctane	788		mg/kg	87.5	9.80	10
3,3-Diethylpentane	ND		mg/kg	87.5	10.2	10
p/m-Xylene	1530		mg/kg	175	16.7	10
1-Nonene	ND		mg/kg	219	11.8	10
trans-3-Nonene	ND		mg/kg	87.5	10.4	10
cis-3-Nonene	ND		mg/kg	87.5	16.4	10
Nonane (C9)	4860		mg/kg	87.5	13.6	10
Styrene	ND		mg/kg	87.5	8.84	10
o-Xylene	834		mg/kg	87.5	9.14	10
2-Nonene	ND		mg/kg	219	11.1	10
Isopropylcyclohexane	ND		mg/kg	87.5	9.27	10
Isopropylbenzene	247		mg/kg	87.5	8.18	10
3,3-Dimethyloctane	165		mg/kg	87.5	8.84	10
n-Propylbenzene	722		mg/kg	87.5	7.74	10
2-Methylnonane	2230		mg/kg	87.5	12.4	10
3-Methylnonane	2260		mg/kg	87.5	12.2	10
1-Methyl-3-Ethylbenzene	1780		mg/kg	87.5	13.8	10
1-Methyl-4-Ethylbenzene	916		mg/kg	87.5	12.3	10
1,3,5-Trimethylbenzene	1450		mg/kg	87.5	10.1	10
1-Decene	ND		mg/kg	87.5	11.4	10
Isobutylcyclohexane	ND		mg/kg	87.5	7.13	10
1-Methyl-2-Ethylbenzene	1210		mg/kg	87.5	7.44	10
Decane (C10)	18000	E	mg/kg	87.5	11.8	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
tert-Butylbenzene	35.3	J	mg/kg	87.5	9.23	10
1,2,4-Trimethylbenzene	4890		mg/kg	87.5	9.06	10
Isobutylbenzene	263		mg/kg	87.5	11.8	10
sec-Butylbenzene	628		mg/kg	87.5	11.3	10
1-Methyl-3-Isopropylbenzene	817		mg/kg	87.5	11.3	10
1-Methyl-4-Isopropylbenzene	647		mg/kg	87.5	9.27	10
1,2,3-Trimethylbenzene	2640		mg/kg	87.5	9.76	10
1-Methyl-2-Isopropylbenzene	158		mg/kg	87.5	9.49	10
Indane	424		mg/kg	87.5	5.38	10
1,3-Diethylbenzene	740		mg/kg	87.5	10.9	10
1-Methyl-3-N-Propylbenzene	2230		mg/kg	87.5	8.84	10
Indene	87.0	J	mg/kg	87.5	5.07	10
1-Methyl-4-N-Propylbenzene	1110		mg/kg	87.5	10.9	10
n-Butylbenzene	1090		mg/kg	87.5	8.62	10
1,2-Dimethyl-4-Ethylbenzene	1800		mg/kg	87.5	10.7	10
1,2-Diethylbenzene	441		mg/kg	87.5	12.9	10
1-Methyl-2-N-Propylbenzene	1890		mg/kg	87.5	10.9	10
1,4-Dimethyl-2-Ethylbenzene	1710		mg/kg	87.5	8.18	10
Undecane	30600	E	mg/kg	87.5	9.71	10
1,3-Dimethyl-4-Ethylbenzene	2070		mg/kg	87.5	8.49	10
1,3-Dimethyl-5-Ethylbenzene	2250		mg/kg	87.5	10.3	10
1,3-Dimethyl-2-Ethylbenzene	545		mg/kg	87.5	6.52	10
1,2-Dimethyl-3-Ethylbenzene	1170		mg/kg	87.5	5.56	10
1,2,4,5-Tetramethylbenzene	1370		mg/kg	87.5	6.78	10
1,2,3,5-Tetramethylbenzene	2400		mg/kg	87.5	6.65	10
N-Pentylbenzene	638		mg/kg	87.5	10.9	10
1,2,3,4-Tetramethylbenzene	2060		mg/kg	87.5	9.36	10
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	87.5	12.5	10
Dodecane (C12)	28600	E	mg/kg	219	28.7	10
1,3,5-Triethylbenzene	ND		mg/kg	87.5	16.6	10
Naphthalene	2710		mg/kg	87.5	36.5	10
Benzo thiophene	ND		mg/kg	87.5	46.2	10
1,2,4-Triethylbenzene	ND		mg/kg	87.5	14.9	10
Hexylbenzene	617		mg/kg	87.5	16.8	10
MMT	ND		mg/kg	219	56.2	10
Tridecane	25400	E	mg/kg	219	60.9	10
2-Methylnaphthalene	4800		mg/kg	219	57.8	10

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PIANO Volatile Organics by GC/MS - Mansfield Lab						
1-Methylnaphthalene	3180		mg/kg	219	64.2	10
Tetradecane (C14)	14400	E	mg/kg	219	26.8	10
Pentadecane	1940		mg/kg	219	48.8	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	118		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	95		70-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 08/17/22 04:45
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1676403-5					
3-Methyl-1-butene	ND		mg/kg	10.0	1.48
Isopentane	ND		mg/kg	10.0	1.83
1-Pentene	ND		mg/kg	10.0	1.82
2-Methyl-1-Butene	ND		mg/kg	10.0	1.56
Pentane	ND		mg/kg	10.0	3.12
trans-2-Pentene	ND		mg/kg	10.0	1.35
Isoprene	ND		mg/kg	10.0	1.78
cis-2-Pentene	ND		mg/kg	10.0	1.61
Tertiary Butanol	ND		mg/kg	125	16.2
2,2-Dimethylbutane	ND		mg/kg	10.0	3.08
4-Methyl-1-pentene	ND		mg/kg	10.0	1.56
Cyclopentane	ND		mg/kg	10.0	2.60
2,3-Dimethylbutane	ND		mg/kg	10.0	4.13
2-Methylpentane	ND		mg/kg	10.0	2.71
Methyl tert butyl ether	ND		mg/kg	10.0	2.06
3-Methylpentane	ND		mg/kg	10.0	1.58
1-Hexene	ND		mg/kg	10.0	1.40
n-Hexane	ND		mg/kg	10.0	1.64
Isopropyl Ether	ND		mg/kg	10.0	1.21
trans-2-Hexene	ND		mg/kg	10.0	1.30
2-Methyl-2-pentene	ND		mg/kg	10.0	1.53
cis-2-Hexene	ND		mg/kg	10.0	1.36
Ethyl-Tert-Butyl-Ether	ND		mg/kg	10.0	1.52
2,2-Dimethylpentane	ND		mg/kg	10.0	1.34
Methylcyclopentane	ND		mg/kg	10.0	1.34
2,4-Dimethylpentane	ND		mg/kg	10.0	1.24
2,2,3-Trimethylbutane	ND		mg/kg	10.0	1.35
1,2-Dichloroethane	ND		mg/kg	10.0	1.48
3,3-Dimethylpentane	ND		mg/kg	10.0	1.86

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 08/17/22 04:45
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1676403-5					
Cyclohexane	ND		mg/kg	10.0	1.24
2-Methylhexane	ND		mg/kg	10.0	1.58
Benzene	1.93	J	mg/kg	10.0	1.52
2,3-Dimethylpentane	ND		mg/kg	10.0	1.32
Thiophene	ND		mg/kg	10.0	1.42
1,1-Dimethylcyclopentane	ND		mg/kg	10.0	1.20
3-Methylhexane	ND		mg/kg	10.0	1.60
Tertiary-Amyl Methyl Ether	ND		mg/kg	10.0	1.23
3-Ethylpentane	ND		mg/kg	10.0	1.44
1-Heptene/1,2-DMCP (trans)	ND		mg/kg	20.0	2.92
Isooctane	ND		mg/kg	10.0	1.09
trans-3-Heptene	ND		mg/kg	10.0	1.56
Heptane	ND		mg/kg	10.0	1.74
trans-2-Heptene	ND		mg/kg	10.0	1.28
cis-2-Heptene	ND		mg/kg	10.0	1.94
2,2-Dimethylhexane	ND		mg/kg	10.0	1.45
Methylcyclohexane	ND		mg/kg	10.0	1.35
2,5-Dimethylhexane	ND		mg/kg	10.0	1.74
2,4-Dimethylhexane	ND		mg/kg	10.0	1.22
Ethylcyclopentane	ND		mg/kg	10.0	1.32
2,2,3-Trimethylpentane	ND		mg/kg	10.0	1.74
2,3,4-Trimethylpentane	ND		mg/kg	10.0	1.30
Xylene (Total) ¹	ND		mg/kg	10.0	1.04
2,3,3-Trimethylpentane	ND		mg/kg	10.0	1.98
2,3-Dimethylhexane	ND		mg/kg	10.0	2.42
2-Methylheptane	ND		mg/kg	10.0	1.69
4-Methylheptane	ND		mg/kg	10.0	1.72
3-Methylheptane	ND		mg/kg	10.0	1.42
3-Ethylhexane	ND		mg/kg	10.0	1.79

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 08/17/22 04:45
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1676403-5					
Toluene	ND		mg/kg	10.0	1.36
2-Methylthiophene	ND		mg/kg	10.0	0.850
1,4-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.30
3-Methylthiophene	ND		mg/kg	10.0	1.17
1-Octene	ND		mg/kg	25.0	1.54
Octane	ND		mg/kg	10.0	1.18
1,2-Dimethylcyclohexane (trans)	ND		mg/kg	10.0	1.47
1,2-Dibromoethane	ND		mg/kg	10.0	1.60
cis-2-Octene	ND		mg/kg	10.0	1.14
Isopropylcyclopentane	ND		mg/kg	10.0	1.46
1,2-Dimethylcyclohexane (cis)	ND		mg/kg	10.0	2.90
2,5-Dimethylheptane	ND		mg/kg	10.0	1.68
3,5-Dimethylheptane	ND		mg/kg	10.0	1.41
3,3-Dimethylheptane	ND		mg/kg	10.0	1.21
1,1,4-Trimethylcyclohexane	ND		mg/kg	10.0	0.995
2,3-Dimethylheptane	ND		mg/kg	10.0	1.14
3,4-Dimethylheptane	ND		mg/kg	10.0	1.70
4-Methyloctane	ND		mg/kg	10.0	1.67
2-Methyloctane	ND		mg/kg	10.0	2.56
Ethylbenzene	ND		mg/kg	10.0	1.08
2-Ethylthiophene	ND		mg/kg	10.0	0.880
3-Methyloctane	ND		mg/kg	10.0	1.12
3,3-Diethylpentane	ND		mg/kg	10.0	1.16
p/m-Xylene	ND		mg/kg	20.0	1.90
1-Nonene	ND		mg/kg	25.0	1.35
trans-3-Nonene	ND		mg/kg	10.0	1.18
cis-3-Nonene	ND		mg/kg	10.0	1.87
Nonane (C9)	ND		mg/kg	10.0	1.56
Styrene	ND		mg/kg	10.0	1.01

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 08/17/22 04:45
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1676403-5					
o-Xylene	ND		mg/kg	10.0	1.04
2-Nonene	ND		mg/kg	25.0	1.27
Isopropylcyclohexane	ND		mg/kg	10.0	1.06
Isopropylbenzene	ND		mg/kg	10.0	0.935
3,3-Dimethyloctane	ND		mg/kg	10.0	1.01
n-Propylbenzene	ND		mg/kg	10.0	0.885
2-Methylnonane	ND		mg/kg	10.0	1.42
3-Methylnonane	ND		mg/kg	10.0	1.40
1-Methyl-3-Ethylbenzene	ND		mg/kg	10.0	1.58
1-Methyl-4-Ethylbenzene	ND		mg/kg	10.0	1.41
1,3,5-Trimethylbenzene	ND		mg/kg	10.0	1.15
1-Decene	ND		mg/kg	10.0	1.30
Isobutylcyclohexane	ND		mg/kg	10.0	0.815
1-Methyl-2-Ethylbenzene	ND		mg/kg	10.0	0.850
Decane (C10)	1.36	J	mg/kg	10.0	1.36
tert-Butylbenzene	ND		mg/kg	10.0	1.06
1,2,4-Trimethylbenzene	ND		mg/kg	10.0	1.04
Isobutylbenzene	ND		mg/kg	10.0	1.35
sec-Butylbenzene	ND		mg/kg	10.0	1.30
1-Methyl-3-Isopropylbenzene	ND		mg/kg	10.0	1.29
1-Methyl-4-Isopropylbenzene	ND		mg/kg	10.0	1.06
1,2,3-Trimethylbenzene	ND		mg/kg	10.0	1.12
1-Methyl-2-Isopropylbenzene	ND		mg/kg	10.0	1.08
Indane	ND		mg/kg	10.0	0.615
1,3-Diethylbenzene	ND		mg/kg	10.0	1.24
1-Methyl-3-N-Propylbenzene	ND		mg/kg	10.0	1.01
Indene	ND		mg/kg	10.0	0.580
1-Methyl-4-N-Propylbenzene	ND		mg/kg	10.0	1.25
n-Butylbenzene	ND		mg/kg	10.0	0.985

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 08/17/22 04:45
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1676403-5					
1,2-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	1.22
1,2-Diethylbenzene	ND		mg/kg	10.0	1.48
1-Methyl-2-N-Propylbenzene	ND		mg/kg	10.0	1.24
1,4-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.935
Undecane	ND		mg/kg	10.0	1.11
1,3-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	0.970
1,3-Dimethyl-5-Ethylbenzene	ND		mg/kg	10.0	1.18
1,3-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	0.745
1,2-Dimethyl-3-Ethylbenzene	ND		mg/kg	10.0	0.635
1,2,4,5-Tetramethylbenzene	ND		mg/kg	10.0	0.775
1,2,3,5-Tetramethylbenzene	ND		mg/kg	10.0	0.760
N-Pentylbenzene	ND		mg/kg	10.0	1.24
1,2,3,4-Tetramethylbenzene	ND		mg/kg	10.0	1.07
1,3-Dimethyl-5-tert-Butylbenzene	ND		mg/kg	10.0	1.42
Dodecane (C12)	ND		mg/kg	25.0	3.28
1,3,5-Triethylbenzene	ND		mg/kg	10.0	1.90
Naphthalene	ND		mg/kg	10.0	4.18
Benzothiophene	ND		mg/kg	10.0	5.28
1,2,4-Triethylbenzene	ND		mg/kg	10.0	1.70
Hexylbenzene	ND		mg/kg	10.0	1.92
MMT	ND		mg/kg	25.0	6.43
Tridecane	ND		mg/kg	25.0	6.96
2-Methylnaphthalene	ND		mg/kg	25.0	6.61
1-Methylnaphthalene	ND		mg/kg	25.0	7.34
Tetradecane (C14)	ND		mg/kg	25.0	3.06
Pentadecane	ND		mg/kg	25.0	5.58

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 08/17/22 04:45
Analyst: RY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1676403-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	118		70-130
Toluene-d8	110		70-130
4-Bromofluorobenzene	95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-04 Batch: WG1676403-3 WG1676403-4								
1-Pentene	94		105		50-130	11		30
Pentane	75		85		50-130	13		30
Tertiary Butanol	101		98		50-130	3		30
Cyclopentane	83		92		50-130	10		30
2-Methylpentane	84		92		50-130	9		30
Methyl tert butyl ether	83		84		50-130	1		30
3-Methylpentane	86		95		50-130	10		30
1-Hexene	93		99		50-130	6		30
n-Hexane	84		92		50-130	9		30
Isopropyl Ether	88		89		50-130	1		30
Ethyl-Tert-Butyl-Ether	78		78		50-130	0		30
Methylcyclopentane	93		101		50-130	8		30
2,4-Dimethylpentane	85		93		50-130	9		30
Cyclohexane	96		102		50-130	6		30
2-Methylhexane	87		95		50-130	9		30
Benzene	92		93		50-130	1		30
2,3-Dimethylpentane	89		96		50-130	8		30
3-Methylhexane	78		85		50-130	9		30
Tertiary-Amyl Methyl Ether	84		84		50-130	0		30
Isooctane	94		100		50-130	6		30
Heptane	94		102		50-130	8		30
Methylcyclohexane	94		96		50-130	2		30
2-Methylheptane	100		104		50-130	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-04 Batch: WG1676403-3 WG1676403-4								
3-Methylheptane	98		104		50-130	6		30
Toluene	94		95		50-130	1		30
Octane	101		106		50-130	5		30
Ethylbenzene	95		97		50-130	2		30
p/m-Xylene	100		101		50-130	1		30
Nonane (C9)	97		101		50-130	4		30
o-Xylene	99		101		50-130	2		30
Isopropylbenzene	102		103		50-130	1		30
n-Propylbenzene	105		106		50-130	1		30
1-Methyl-3-Ethylbenzene	103		104		50-130	1		30
1-Methyl-4-Ethylbenzene	106		108		50-130	2		30
1,3,5-Trimethylbenzene	105		106		50-130	1		30
1-Decene	81		86		50-130	6		30
1-Methyl-2-Ethylbenzene	104		106		50-130	2		30
Decane (C10)	105		110		50-130	5		30
1,2,4-Trimethylbenzene	99		101		50-130	2		30
sec-Butylbenzene	110		111		50-130	1		30
1-Methyl-4-N-Propylbenzene	102		102		50-130	0		30
n-Butylbenzene	103		104		50-130	1		30
1,2-Diethylbenzene	102		104		50-130	2		30
Undecane	96		105		50-130	9		30
N-Pentylbenzene	101		103		50-130	2		30
Dodecane (C12)	112		126		50-130	12		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL

Project Number: 103S518817512

Lab Number: L2243669

Report Date: 09/08/22

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
-----------	-------------------------	-------------	--------------------------	-------------	----------------------------	------------	-------------	----------------------

PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-04 Batch: WG1676403-3 WG1676403-4

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
Dibromofluoromethane	116		118		70-130
Toluene-d8	110		110		70-130
4-Bromofluorobenzene	96		97		70-130

SEMIVOLATILES

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D-SIM(M)
 Analytical Date: 09/06/22 09:42
 Analyst: CC
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	3450	E	mg/kg	1.38	0.275	1
C1-Decalins	8610		mg/kg	1.38	0.275	1
C2-Decalins	8620		mg/kg	1.38	0.275	1
C3-Decalins	4060		mg/kg	1.38	0.275	1
C4-Decalins	3100		mg/kg	1.38	0.275	1
Naphthalene	5120	E	mg/kg	2.77	0.796	1
C1-Naphthalenes	6910	E	mg/kg	2.77	0.796	1
C2-Naphthalenes	5980		mg/kg	2.77	0.796	1
C3-Naphthalenes	1390		mg/kg	2.77	0.796	1
C4-Naphthalenes	184		mg/kg	2.77	0.796	1
2-Methylnaphthalene	5970	E	mg/kg	2.77	0.714	1
1-Methylnaphthalene	3870	E	mg/kg	2.77	0.873	1
Benzothiophene	51.8		mg/kg	2.77	0.868	1
C1-Benzo(b)thiophenes	236		mg/kg	2.77	0.868	1
C2-Benzo(b)thiophenes	208		mg/kg	2.77	0.868	1
C3-Benzo(b)thiophenes	179		mg/kg	2.77	0.868	1
C4-Benzo(b)thiophenes	44.6		mg/kg	2.77	0.868	1
Biphenyl	555		mg/kg	2.77	0.856	1
2,6-Dimethylnaphthalene	2470		mg/kg	2.77	0.658	1
Dibenzofuran	53.0		mg/kg	2.77	0.872	1
Acenaphthylene	19.5		mg/kg	2.77	0.528	1
Acenaphthene	47.4		mg/kg	2.77	0.488	1
2,3,5-Trimethylnaphthalene	104		mg/kg	2.77	0.453	1
Fluorene	32.6		mg/kg	2.77	0.739	1
C1-Fluorenes	10.6		mg/kg	2.77	0.739	1
C2-Fluorenes	5.64		mg/kg	2.77	0.739	1
C3-Fluorenes	ND		mg/kg	2.77	0.739	1
Dibenzothiophene	5.50		mg/kg	2.77	0.764	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	2.08	J	mg/kg	2.77	0.764	1
2/3-Methyldibenzothiophene(2MDT)	ND		mg/kg	2.77	0.764	1
1-Methyldibenzothiophene(1MDT)	ND		mg/kg	2.77	0.764	1
C1-Dibenzothiophenes BS	3.63		mg/kg	2.77	0.764	1
C2-Dibenzothiophenes	2.95		mg/kg	2.77	0.764	1
C3-Dibenzothiophenes	ND		mg/kg	2.77	0.764	1
C4-Dibenzothiophenes	ND		mg/kg	2.77	0.764	1
Phenanthrene	4.71		mg/kg	2.77	0.918	1
3-Methylphenanthrene (3MP)	ND		mg/kg	2.77	0.918	1
2-Methylphenanthrene (2MP)	ND		mg/kg	2.77	0.918	1
2-Methylanthracene (2MA)	ND		mg/kg	2.77	0.918	1
9/4-Methylphenanthrene (9MP)	ND		mg/kg	2.77	0.918	1
1-Methylphenanthrene (1MP)	1.20	J	mg/kg	2.77	0.918	1
C1-Phenanthrenes/Anthracenes	3.35		mg/kg	2.77	0.918	1
C2-Phenanthrenes/Anthr BS	ND		mg/kg	2.77	0.918	1
C3-Phenanthrenes/Anthracenes	ND		mg/kg	2.77	0.918	1
C4-Phenanthrenes/Anthracenes	ND		mg/kg	2.77	0.918	1
Retene	1.13	J	mg/kg	2.77	0.680	1
Anthracene	1.22	J	mg/kg	2.77	0.571	1
Carbazole	ND		mg/kg	2.77	0.906	1
Fluoranthene	1.20	J	mg/kg	2.77	0.880	1
Benzo(b)fluorene	0.978	J	mg/kg	2.77	0.802	1
Pyrene	1.49	J	mg/kg	2.77	0.728	1
C1-Fluoranthenes/Pyrenes	ND		mg/kg	2.77	0.728	1
C2-Fluoranthenes/Pyrenes	ND		mg/kg	2.77	0.728	1
C3-Fluoranthenes/Pyrenes	ND		mg/kg	2.77	0.728	1
C4-Fluoranthenes/Pyrenes	ND		mg/kg	2.77	0.728	1
Naphthobenzothiophenes	1.05	J	mg/kg	2.77	0.775	1
C1-Naphthobenzothiophenes	ND		mg/kg	2.77	0.775	1
C2-Naphthobenzothiophenes	ND		mg/kg	2.77	0.775	1
C3-Naphthobenzothiophenes	ND		mg/kg	2.77	0.775	1
C4-Naphthobenzothiophenes	ND		mg/kg	2.77	0.775	1
Benz(a)anthracene	0.785	J	mg/kg	2.77	0.565	1
Chrysene/Triphenylene	1.01	J	mg/kg	2.77	0.560	1
C1-Chrysenes	ND		mg/kg	2.77	0.560	1
C2-Chrysenes BS	ND		mg/kg	2.77	0.560	1
C3-Chrysenes	ND		mg/kg	2.77	0.560	1

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01
Client ID: PRODUCT SAMPLE #1 / (JP-5)
Sample Location: Not Specified

Date Collected: 08/02/22 10:44
Date Received: 08/12/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		mg/kg	2.77	0.560	1
Benzo(b)fluoranthene	0.998	J	mg/kg	2.77	0.720	1
Benzo(j)+(k)fluoranthene	1.08	J	mg/kg	2.77	0.550	1
Benzo(a)fluoranthene	ND		mg/kg	2.77	0.550	1
Benzo(e)pyrene	1.05	J	mg/kg	2.77	0.572	1
Benzo(a)pyrene	1.08	J	mg/kg	2.77	0.791	1
Perylene	0.916	J	mg/kg	2.77	0.535	1
Indeno(1,2,3-cd)pyrene	1.19	J	mg/kg	2.77	0.752	1
Dibenz(a,h)+(a,c)anthracene	1.18	J	mg/kg	2.77	0.748	1
Benzo(g,h,i)perylene	1.37	J	mg/kg	2.77	0.736	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	128		50-130
Phenanthrene-d10	110		50-130
Benzo(a)pyrene-d12	85		50-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D
 Analytical Date: 09/02/22 23:55
 Analyst: PS
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
n-Nitrosodimethylamine	ND		mg/kg	458	115.	10
Pyridine	ND		mg/kg	1830	81.1	10
Benzaldehyde	ND		mg/kg	458	115.	10
Aniline	ND		mg/kg	458	69.1	10
Bis(2-chloroethyl)ether	ND		mg/kg	458	84.1	10
Phenol	ND		mg/kg	458	43.5	10
2-Chlorophenol	ND		mg/kg	458	30.2	10
1,3-Dichlorobenzene	ND		mg/kg	458	93.5	10
1,4-Dichlorobenzene	ND		mg/kg	458	95.3	10
1,2-Dichlorobenzene	ND		mg/kg	458	99.9	10
Benzyl Alcohol	ND		mg/kg	916	304.	10
Bis(2-chloroisopropyl)ether	ND		mg/kg	458	76.4	10
2-Methylphenol	ND		mg/kg	458	39.4	10
Acetophenone	ND		mg/kg	458	57.7	10
Hexachloroethane	ND		mg/kg	458	76.6	10
N-Nitroso-di-n-propylamine	ND		mg/kg	458	78.0	10
4-Methylphenol	ND		mg/kg	458	59.9	10
Nitrobenzene	ND		mg/kg	458	47.8	10
Isophorone	ND		mg/kg	458	50.2	10
2-Nitrophenol	ND		mg/kg	458	49.4	10
2,4-Dimethylphenol	ND		mg/kg	458	75.5	10
Benzoic Acid	ND		mg/kg	27500	5820	10
Bis(2-chloroethoxy)methane	ND		mg/kg	458	46.1	10
2,4-Dichlorophenol	ND		mg/kg	458	49.2	10
1,2,4-Trichlorobenzene	ND		mg/kg	458	28.3	10
Naphthalene	2780		mg/kg	458	30.8	10
4-Chloroaniline	ND		mg/kg	458	41.9	10
Hexachlorobutadiene	ND		mg/kg	458	88.9	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Caprolactam	ND		mg/kg	916	67.3	10
P-Chloro-M-Cresol	ND		mg/kg	458	66.2	10
2-Methylnaphthalene	5250		mg/kg	458	36.0	10
1,2,4,5-Tetrachlorobenzene	ND		mg/kg	458	43.6	10
Hexachlorocyclopentadiene	ND		mg/kg	2750	502.	10
2,4,6-Trichlorophenol	ND		mg/kg	458	41.0	10
2,4,5-Trichlorophenol	ND		mg/kg	458	54.6	10
Biphenyl	439.	J	mg/kg	458	48.1	10
2-Chloronaphthalene	ND		mg/kg	458	31.9	10
2-Nitroaniline	ND		mg/kg	458	74.1	10
Acenaphthylene	ND		mg/kg	458	40.0	10
Dimethylphthalate	ND		mg/kg	458	35.7	10
2,6-Dinitrotoluene	ND		mg/kg	458	118.	10
Acenaphthene	ND		mg/kg	458	45.8	10
3-Nitroaniline	ND		mg/kg	916	48.1	10
2,4-Dinitrophenol	ND		mg/kg	2750	781.	10
Dibenzofuran	ND		mg/kg	458	34.3	10
2,3,4,6-Tetrachlorophenol	ND		mg/kg	458	79.3	10
2,4-Dinitrotoluene	ND		mg/kg	458	32.1	10
4-Nitrophenol	ND		mg/kg	7610	2520	10
Fluorene	37.6	J	mg/kg	458	33.9	10
4-Chlorophenyl phenyl ether	ND		mg/kg	458	44.2	10
Diethylphthalate	ND		mg/kg	458	46.8	10
4-Nitroaniline	ND		mg/kg	2750	61.9	10
4,6-Dinitro-2-Methylphenol	ND		mg/kg	2750	880.	10
Azobenzene	ND		mg/kg	458	33.8	10
NitrosoDiPhenylAmine(NDPA)/DPA	ND		mg/kg	458	32.2	10
4-Bromophenyl phenyl ether	ND		mg/kg	458	43.1	10
Hexachlorobenzene	ND		mg/kg	458	44.6	10
Atrazine	ND		mg/kg	458	39.8	10
Pentachlorophenol	ND		mg/kg	2750	824.	10
Pentachloronitrobenzene	ND		mg/kg	458	45.2	10
Phenanthrene	ND		mg/kg	458	29.1	10
Anthracene	ND		mg/kg	458	23.4	10
Carbazole	ND		mg/kg	458	29.2	10
Di-n-butylphthalate	ND		mg/kg	458	43.6	10
Fluoranthene	ND		mg/kg	458	39.5	10

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Benzidine	ND		mg/kg	12800	2970	10
Pyrene	ND		mg/kg	458	37.8	10
Butylbenzylphthalate	ND		mg/kg	458	92.6	10
3,3'-Dichlorobenzidine	ND		mg/kg	916	78.2	10
Benz(a)anthracene	ND		mg/kg	458	26.6	10
Chrysene	ND		mg/kg	458	32.1	10
Bis(2-Ethylhexyl)phthalate	ND		mg/kg	458	120.	10
Di-n-octylphthalate	ND		mg/kg	916	190.	10
Benzo(b)fluoranthene	ND		mg/kg	458	40.1	10
Benzo(k)fluoranthene	ND		mg/kg	458	34.9	10
Benzo(a)pyrene	ND		mg/kg	458	33.1	10
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	458	37.8	10
Dibenz(a,h)anthracene	ND		mg/kg	458	47.5	10
Benzo(ghi)perylene	ND		mg/kg	458	35.6	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	100		30-130
Phenol-d5	83		30-130
Nitrobenzene-d5	157	Q	30-130
2-Fluorophenol	96		30-130
2,4,6-Tribromophenol	64		30-130
Terphenyl-d14	92		30-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D-SIM(M)
 Analytical Date: 09/06/22 14:03
 Analyst: CC
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	3500		mg/kg	2.77	0.551	2
Naphthalene	4650		mg/kg	5.54	1.59	2
C1-Naphthalenes	7510		mg/kg	5.54	1.59	2
2-Methylnaphthalene	6400		mg/kg	5.54	1.43	2
1-Methylnaphthalene	4250		mg/kg	5.54	1.74	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	104		50-130
Phenanthrene-d10	119		50-130
Benzo(a)pyrene-d12	89		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D-SIM(M)
 Analytical Date: 09/07/22 11:21
 Analyst: CC
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	3020	E	mg/kg	1.39	0.276	1
C1-Decalins	5580		mg/kg	1.39	0.276	1
C2-Decalins	5800		mg/kg	1.39	0.276	1
C3-Decalins	2790		mg/kg	1.39	0.276	1
C4-Decalins	2120		mg/kg	1.39	0.276	1
Naphthalene	2620		mg/kg	2.78	0.798	1
C1-Naphthalenes	3810		mg/kg	2.78	0.798	1
C2-Naphthalenes	3820		mg/kg	2.78	0.798	1
C3-Naphthalenes	1670		mg/kg	2.78	0.798	1
C4-Naphthalenes	477		mg/kg	2.78	0.798	1
2-Methylnaphthalene	3250		mg/kg	2.78	0.716	1
1-Methylnaphthalene	2140		mg/kg	2.78	0.874	1
Benzothiophene	33.6		mg/kg	2.78	0.869	1
C1-Benzo(b)thiophenes	152		mg/kg	2.78	0.869	1
C2-Benzo(b)thiophenes	126		mg/kg	2.78	0.869	1
C3-Benzo(b)thiophenes	157		mg/kg	2.78	0.869	1
C4-Benzo(b)thiophenes	76.8		mg/kg	2.78	0.869	1
Biphenyl	368		mg/kg	2.78	0.858	1
2,6-Dimethylnaphthalene	1520		mg/kg	2.78	0.660	1
Dibenzofuran	49.9		mg/kg	2.78	0.874	1
Acenaphthylene	13.9		mg/kg	2.78	0.530	1
Acenaphthene	42.7		mg/kg	2.78	0.489	1
2,3,5-Trimethylnaphthalene	148		mg/kg	2.78	0.454	1
Fluorene	59.6		mg/kg	2.78	0.740	1
C1-Fluorenes	58.4		mg/kg	2.78	0.740	1
C2-Fluorenes	42.6		mg/kg	2.78	0.740	1
C3-Fluorenes	18.9		mg/kg	2.78	0.740	1
Dibenzothiophene	16.8		mg/kg	2.78	0.765	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	7.29		mg/kg	2.78	0.765	1
2/3-Methyldibenzothiophene(2MDT)	2.22	JB	mg/kg	2.78	0.765	1
1-Methyldibenzothiophene(1MDT)	1.70	J	mg/kg	2.78	0.765	1
C1-Dibenzothiophenes BS	12.3		mg/kg	2.78	0.765	1
C2-Dibenzothiophenes	9.77		mg/kg	2.78	0.765	1
C3-Dibenzothiophenes	3.91		mg/kg	2.78	0.765	1
C4-Dibenzothiophenes	ND		mg/kg	2.78	0.765	1
Phenanthrene	23.4		mg/kg	2.78	0.920	1
3-Methylphenanthrene (3MP)	4.58		mg/kg	2.78	0.920	1
2-Methylphenanthrene (2MP)	4.22		mg/kg	2.78	0.920	1
2-Methylanthracene (2MA)	ND		mg/kg	2.78	0.920	1
9/4-Methylphenanthrene (9MP)	4.75		mg/kg	2.78	0.920	1
1-Methylphenanthrene (1MP)	3.08		mg/kg	2.78	0.920	1
C1-Phenanthrenes/Anthracenes	18.0		mg/kg	2.78	0.920	1
C2-Phenanthrenes/Anthr BS	7.60		mg/kg	2.78	0.920	1
C3-Phenanthrenes/Anthracenes	3.44		mg/kg	2.78	0.920	1
C4-Phenanthrenes/Anthracenes	ND		mg/kg	2.78	0.920	1
Retene	ND		mg/kg	2.78	0.681	1
Anthracene	ND		mg/kg	2.78	0.572	1
Carbazole	0.934	J	mg/kg	2.78	0.908	1
Fluoranthene	ND		mg/kg	2.78	0.882	1
Benzo(b)fluorene	ND		mg/kg	2.78	0.804	1
Pyrene	ND		mg/kg	2.78	0.730	1
C1-Fluoranthenes/Pyrenes	ND		mg/kg	2.78	0.730	1
C2-Fluoranthenes/Pyrenes	ND		mg/kg	2.78	0.730	1
C3-Fluoranthenes/Pyrenes	ND		mg/kg	2.78	0.730	1
C4-Fluoranthenes/Pyrenes	ND		mg/kg	2.78	0.730	1
Naphthobenzothiophenes	ND		mg/kg	2.78	0.776	1
C1-Naphthobenzothiophenes	ND		mg/kg	2.78	0.776	1
C2-Naphthobenzothiophenes	ND		mg/kg	2.78	0.776	1
C3-Naphthobenzothiophenes	ND		mg/kg	2.78	0.776	1
C4-Naphthobenzothiophenes	ND		mg/kg	2.78	0.776	1
Benz(a)anthracene	ND		mg/kg	2.78	0.566	1
Chrysene/Triphenylene	0.596	J	mg/kg	2.78	0.561	1
C1-Chrysenes	ND		mg/kg	2.78	0.561	1
C2-Chrysenes BS	ND		mg/kg	2.78	0.561	1
C3-Chrysenes	ND		mg/kg	2.78	0.561	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		mg/kg	2.78	0.561	1
Benzo(b)fluoranthene	ND		mg/kg	2.78	0.722	1
Benzo(j)+(k)fluoranthene	ND		mg/kg	2.78	0.551	1
Benzo(a)fluoranthene	ND		mg/kg	2.78	0.551	1
Benzo(e)pyrene	ND		mg/kg	2.78	0.573	1
Benzo(a)pyrene	ND		mg/kg	2.78	0.792	1
Perylene	ND		mg/kg	2.78	0.536	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	2.78	0.753	1
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	2.78	0.750	1
Benzo(g,h,i)perylene	ND		mg/kg	2.78	0.737	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	111		50-130
Phenanthrene-d10	98		50-130
Benzo(a)pyrene-d12	79		50-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D
 Analytical Date: 09/03/22 00:25
 Analyst: PS
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
n-Nitrosodimethylamine	ND		mg/kg	484	122.	10
Pyridine	ND		mg/kg	1940	85.7	10
Benzaldehyde	ND		mg/kg	484	122.	10
Aniline	ND		mg/kg	484	73.0	10
Bis(2-chloroethyl)ether	ND		mg/kg	484	88.9	10
Phenol	ND		mg/kg	484	46.0	10
2-Chlorophenol	ND		mg/kg	484	31.9	10
1,3-Dichlorobenzene	ND		mg/kg	484	98.7	10
1,4-Dichlorobenzene	ND		mg/kg	484	101.	10
1,2-Dichlorobenzene	ND		mg/kg	484	106.	10
Benzyl Alcohol	ND		mg/kg	968	321.	10
Bis(2-chloroisopropyl)ether	ND		mg/kg	484	80.7	10
2-Methylphenol	ND		mg/kg	484	41.6	10
Acetophenone	ND		mg/kg	484	61.0	10
Hexachloroethane	ND		mg/kg	484	80.9	10
N-Nitroso-di-n-propylamine	ND		mg/kg	484	82.4	10
4-Methylphenol	ND		mg/kg	484	63.3	10
Nitrobenzene	ND		mg/kg	484	50.4	10
Isophorone	ND		mg/kg	484	53.0	10
2-Nitrophenol	ND		mg/kg	484	52.2	10
2,4-Dimethylphenol	ND		mg/kg	484	79.8	10
Benzoic Acid	ND		mg/kg	29000	6150	10
Bis(2-chloroethoxy)methane	ND		mg/kg	484	48.7	10
2,4-Dichlorophenol	ND		mg/kg	484	52.0	10
1,2,4-Trichlorobenzene	ND		mg/kg	484	29.9	10
Naphthalene	1850		mg/kg	484	32.5	10
4-Chloroaniline	ND		mg/kg	484	44.2	10
Hexachlorobutadiene	ND		mg/kg	484	93.9	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Caprolactam	ND		mg/kg	968	71.0	10
P-Chloro-M-Cresol	ND		mg/kg	484	69.9	10
2-Methylnaphthalene	3110		mg/kg	484	38.0	10
1,2,4,5-Tetrachlorobenzene	ND		mg/kg	484	46.1	10
Hexachlorocyclopentadiene	ND		mg/kg	2900	530.	10
2,4,6-Trichlorophenol	ND		mg/kg	484	43.3	10
2,4,5-Trichlorophenol	ND		mg/kg	484	57.7	10
Biphenyl	312.	J	mg/kg	484	50.8	10
2-Chloronaphthalene	ND		mg/kg	484	33.7	10
2-Nitroaniline	ND		mg/kg	484	78.2	10
Acenaphthylene	ND		mg/kg	484	42.2	10
Dimethylphthalate	ND		mg/kg	484	37.8	10
2,6-Dinitrotoluene	ND		mg/kg	484	125.	10
Acenaphthene	ND		mg/kg	484	48.4	10
3-Nitroaniline	ND		mg/kg	968	50.8	10
2,4-Dinitrophenol	ND		mg/kg	2900	825.	10
Dibenzofuran	ND		mg/kg	484	36.2	10
2,3,4,6-Tetrachlorophenol	ND		mg/kg	484	83.7	10
2,4-Dinitrotoluene	ND		mg/kg	484	33.9	10
4-Nitrophenol	ND		mg/kg	8030	2660	10
Fluorene	68.7	J	mg/kg	484	35.8	10
4-Chlorophenyl phenyl ether	ND		mg/kg	484	46.7	10
Diethylphthalate	ND		mg/kg	484	49.5	10
4-Nitroaniline	ND		mg/kg	2900	65.3	10
4,6-Dinitro-2-Methylphenol	ND		mg/kg	2900	929.	10
Azobenzene	ND		mg/kg	484	35.7	10
NitrosoDiPhenylAmine(NDPA)/DPA	ND		mg/kg	484	34.0	10
4-Bromophenyl phenyl ether	ND		mg/kg	484	45.5	10
Hexachlorobenzene	ND		mg/kg	484	47.1	10
Atrazine	ND		mg/kg	484	42.0	10
Pentachlorophenol	ND		mg/kg	2900	870.	10
Pentachloronitrobenzene	ND		mg/kg	484	47.7	10
Phenanthrene	ND		mg/kg	484	30.8	10
Anthracene	ND		mg/kg	484	24.7	10
Carbazole	ND		mg/kg	484	30.9	10
Di-n-butylphthalate	ND		mg/kg	484	46.1	10
Fluoranthene	ND		mg/kg	484	41.7	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Benzidine	ND		mg/kg	13600	3140	10
Pyrene	ND		mg/kg	484	40.0	10
Butylbenzylphthalate	ND		mg/kg	484	97.8	10
3,3'-Dichlorobenzidine	ND		mg/kg	968	82.6	10
Benz(a)anthracene	ND		mg/kg	484	28.1	10
Chrysene	ND		mg/kg	484	33.9	10
Bis(2-Ethylhexyl)phthalate	ND		mg/kg	484	127.	10
Di-n-octylphthalate	ND		mg/kg	968	200.	10
Benzo(b)fluoranthene	ND		mg/kg	484	42.4	10
Benzo(k)fluoranthene	ND		mg/kg	484	36.9	10
Benzo(a)pyrene	ND		mg/kg	484	34.9	10
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	484	39.9	10
Dibenz(a,h)anthracene	ND		mg/kg	484	50.1	10
Benzo(ghi)perylene	ND		mg/kg	484	37.6	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	101		30-130
Phenol-d5	83		30-130
Nitrobenzene-d5	243	Q	30-130
2-Fluorophenol	92		30-130
2,4,6-Tribromophenol	54		30-130
Terphenyl-d14	98		30-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02 D
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D-SIM(M)
 Analytical Date: 09/07/22 15:54
 Analyst: CC
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	1830		mg/kg	13.9	2.76	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	66		50-130
Phenanthrene-d10	75		50-130
Benzo(a)pyrene-d12	51		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D-SIM(M)
 Analytical Date: 09/06/22 11:08
 Analyst: CC
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	1070		mg/kg	1.32	0.263	1
C1-Decalins	2810		mg/kg	1.32	0.263	1
C2-Decalins	5140		mg/kg	1.32	0.263	1
C3-Decalins	3620		mg/kg	1.32	0.263	1
C4-Decalins	3250		mg/kg	1.32	0.263	1
Naphthalene	241		mg/kg	2.65	0.761	1
C1-Naphthalenes	386		mg/kg	2.65	0.761	1
C2-Naphthalenes	565		mg/kg	2.65	0.761	1
C3-Naphthalenes	477		mg/kg	2.65	0.761	1
C4-Naphthalenes	339		mg/kg	2.65	0.761	1
2-Methylnaphthalene	330		mg/kg	2.65	0.683	1
1-Methylnaphthalene	192		mg/kg	2.65	0.834	1
Benzothiophene	8.10		mg/kg	2.65	0.829	1
C1-Benzo(b)thiophenes	48.0		mg/kg	2.65	0.829	1
C2-Benzo(b)thiophenes	34.8		mg/kg	2.65	0.829	1
C3-Benzo(b)thiophenes	71.5		mg/kg	2.65	0.829	1
C4-Benzo(b)thiophenes	58.7		mg/kg	2.65	0.829	1
Biphenyl	92.3		mg/kg	2.65	0.818	1
2,6-Dimethylnaphthalene	236		mg/kg	2.65	0.629	1
Dibenzofuran	9.98		mg/kg	2.65	0.834	1
Acenaphthylene	ND		mg/kg	2.65	0.505	1
Acenaphthene	ND		mg/kg	2.65	0.467	1
2,3,5-Trimethylnaphthalene	41.7		mg/kg	2.65	0.433	1
Fluorene	16.0		mg/kg	2.65	0.706	1
C1-Fluorenes	59.6		mg/kg	2.65	0.706	1
C2-Fluorenes	124		mg/kg	2.65	0.706	1
C3-Fluorenes	128		mg/kg	2.65	0.706	1
Dibenzothiophene	1.99	J	mg/kg	2.65	0.730	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	1.42	J	mg/kg	2.65	0.730	1
2/3-Methyldibenzothiophene(2MDT)	ND		mg/kg	2.65	0.730	1
1-Methyldibenzothiophene(1MDT)	0.778	J	mg/kg	2.65	0.730	1
C1-Dibenzothiophenes BS	9.80		mg/kg	2.65	0.730	1
C2-Dibenzothiophenes	13.7		mg/kg	2.65	0.730	1
C3-Dibenzothiophenes	13.9		mg/kg	2.65	0.730	1
C4-Dibenzothiophenes	13.4		mg/kg	2.65	0.730	1
Phenanthrene	15.6		mg/kg	2.65	0.877	1
3-Methylphenanthrene (3MP)	11.2		mg/kg	2.65	0.877	1
2-Methylphenanthrene (2MP)	11.5		mg/kg	2.65	0.877	1
2-Methylanthracene (2MA)	ND		mg/kg	2.65	0.877	1
9/4-Methylphenanthrene (9MP)	8.99		mg/kg	2.65	0.877	1
1-Methylphenanthrene (1MP)	6.99		mg/kg	2.65	0.877	1
C1-Phenanthrenes/Anthracenes	45.9		mg/kg	2.65	0.877	1
C2-Phenanthrenes/Anthr BS	56.4		mg/kg	2.65	0.877	1
C3-Phenanthrenes/Anthracenes	43.5		mg/kg	2.65	0.877	1
C4-Phenanthrenes/Anthracenes	22.7		mg/kg	2.65	0.877	1
Retene	ND		mg/kg	2.65	0.650	1
Anthracene	ND		mg/kg	2.65	0.546	1
Carbazole	ND		mg/kg	2.65	0.866	1
Fluoranthene	2.82		mg/kg	2.65	0.841	1
Benzo(b)fluorene	ND		mg/kg	2.65	0.767	1
Pyrene	17.6		mg/kg	2.65	0.696	1
C1-Fluoranthenes/Pyrenes	44.0		mg/kg	2.65	0.696	1
C2-Fluoranthenes/Pyrenes	46.9		mg/kg	2.65	0.696	1
C3-Fluoranthenes/Pyrenes	24.4		mg/kg	2.65	0.696	1
C4-Fluoranthenes/Pyrenes	8.82		mg/kg	2.65	0.696	1
Naphthobenzothiophenes	ND		mg/kg	2.65	0.741	1
C1-Naphthobenzothiophenes	ND		mg/kg	2.65	0.741	1
C2-Naphthobenzothiophenes	ND		mg/kg	2.65	0.741	1
C3-Naphthobenzothiophenes	ND		mg/kg	2.65	0.741	1
C4-Naphthobenzothiophenes	ND		mg/kg	2.65	0.741	1
Benz(a)anthracene	ND		mg/kg	2.65	0.540	1
Chrysene/Triphenylene	ND		mg/kg	2.65	0.535	1
C1-Chrysenes	3.36		mg/kg	2.65	0.535	1
C2-Chrysenes BS	6.22		mg/kg	2.65	0.535	1
C3-Chrysenes	10.0		mg/kg	2.65	0.535	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		mg/kg	2.65	0.535	1
Benzo(b)fluoranthene	ND		mg/kg	2.65	0.689	1
Benzo(j)+(k)fluoranthene	ND		mg/kg	2.65	0.526	1
Benzo(a)fluoranthene	ND		mg/kg	2.65	0.526	1
Benzo(e)pyrene	0.687	J	mg/kg	2.65	0.546	1
Benzo(a)pyrene	ND		mg/kg	2.65	0.756	1
Perylene	ND		mg/kg	2.65	0.511	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	2.65	0.719	1
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	2.65	0.715	1
Benzo(g,h,i)perylene	1.01	J	mg/kg	2.65	0.703	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	106		50-130
Phenanthrene-d10	83		50-130
Benzo(a)pyrene-d12	106		50-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D
 Analytical Date: 09/03/22 00:55
 Analyst: PS
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
n-Nitrosodimethylamine	ND		mg/kg	448	113.	10
Pyridine	ND		mg/kg	1790	79.3	10
Benzaldehyde	ND		mg/kg	448	113.	10
Aniline	ND		mg/kg	448	67.6	10
Bis(2-chloroethyl)ether	ND		mg/kg	448	82.2	10
Phenol	ND		mg/kg	448	42.6	10
2-Chlorophenol	ND		mg/kg	448	29.6	10
1,3-Dichlorobenzene	ND		mg/kg	448	91.4	10
1,4-Dichlorobenzene	ND		mg/kg	448	93.2	10
1,2-Dichlorobenzene	ND		mg/kg	448	97.7	10
Benzyl Alcohol	ND		mg/kg	896	297.	10
Bis(2-chloroisopropyl)ether	ND		mg/kg	448	74.7	10
2-Methylphenol	ND		mg/kg	448	38.5	10
Acetophenone	ND		mg/kg	448	56.4	10
Hexachloroethane	ND		mg/kg	448	74.9	10
N-Nitroso-di-n-propylamine	ND		mg/kg	448	76.2	10
4-Methylphenol	ND		mg/kg	448	58.6	10
Nitrobenzene	ND		mg/kg	448	46.7	10
Isophorone	ND		mg/kg	448	49.1	10
2-Nitrophenol	ND		mg/kg	448	48.3	10
2,4-Dimethylphenol	ND		mg/kg	448	73.8	10
Benzoic Acid	ND		mg/kg	26900	5690	10
Bis(2-chloroethoxy)methane	ND		mg/kg	448	45.1	10
2,4-Dichlorophenol	ND		mg/kg	448	48.1	10
1,2,4-Trichlorobenzene	ND		mg/kg	448	27.7	10
Naphthalene	135.	J	mg/kg	448	30.1	10
4-Chloroaniline	ND		mg/kg	448	40.9	10
Hexachlorobutadiene	ND		mg/kg	448	86.9	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Caprolactam	ND		mg/kg	896	65.8	10
P-Chloro-M-Cresol	ND		mg/kg	448	64.7	10
2-Methylnaphthalene	282.	J	mg/kg	448	35.2	10
1,2,4,5-Tetrachlorobenzene	ND		mg/kg	448	42.6	10
Hexachlorocyclopentadiene	ND		mg/kg	2690	491.	10
2,4,6-Trichlorophenol	ND		mg/kg	448	40.0	10
2,4,5-Trichlorophenol	ND		mg/kg	448	53.4	10
Biphenyl	ND		mg/kg	448	47.0	10
2-Chloronaphthalene	ND		mg/kg	448	31.2	10
2-Nitroaniline	ND		mg/kg	448	72.4	10
Acenaphthylene	ND		mg/kg	448	39.1	10
Dimethylphthalate	ND		mg/kg	448	34.9	10
2,6-Dinitrotoluene	ND		mg/kg	448	116.	10
Acenaphthene	ND		mg/kg	448	44.8	10
3-Nitroaniline	ND		mg/kg	896	47.0	10
2,4-Dinitrophenol	ND		mg/kg	2690	763.	10
Dibenzofuran	ND		mg/kg	448	33.5	10
2,3,4,6-Tetrachlorophenol	ND		mg/kg	448	77.5	10
2,4-Dinitrotoluene	ND		mg/kg	448	31.4	10
4-Nitrophenol	ND		mg/kg	7440	2460	10
Fluorene	ND		mg/kg	448	33.2	10
4-Chlorophenyl phenyl ether	ND		mg/kg	448	43.2	10
Diethylphthalate	ND		mg/kg	448	45.8	10
4-Nitroaniline	ND		mg/kg	2690	60.5	10
4,6-Dinitro-2-Methylphenol	ND		mg/kg	2690	860.	10
Azobenzene	ND		mg/kg	448	33.1	10
NitrosoDiPhenylAmine(NDPA)/DPA	ND		mg/kg	448	31.4	10
4-Bromophenyl phenyl ether	ND		mg/kg	448	42.1	10
Hexachlorobenzene	ND		mg/kg	448	43.6	10
Atrazine	ND		mg/kg	448	38.9	10
Pentachlorophenol	ND		mg/kg	2690	806.	10
Pentachloronitrobenzene	ND		mg/kg	448	44.2	10
Phenanthrene	ND		mg/kg	448	28.5	10
Anthracene	ND		mg/kg	448	22.8	10
Carbazole	ND		mg/kg	448	28.6	10
Di-n-butylphthalate	ND		mg/kg	448	42.6	10
Fluoranthene	ND		mg/kg	448	38.6	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03 D
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Benzidine	ND		mg/kg	12500	2900	10
Pyrene	ND		mg/kg	448	37.0	10
Butylbenzylphthalate	ND		mg/kg	448	90.5	10
3,3'-Dichlorobenzidine	ND		mg/kg	896	76.4	10
Benz(a)anthracene	ND		mg/kg	448	26.0	10
Chrysene	ND		mg/kg	448	31.4	10
Bis(2-Ethylhexyl)phthalate	ND		mg/kg	448	117.	10
Di-n-octylphthalate	ND		mg/kg	896	185.	10
Benzo(b)fluoranthene	ND		mg/kg	448	39.2	10
Benzo(k)fluoranthene	ND		mg/kg	448	34.1	10
Benzo(a)pyrene	ND		mg/kg	448	32.3	10
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	448	36.9	10
Dibenz(a,h)anthracene	ND		mg/kg	448	46.4	10
Benzo(ghi)perylene	ND		mg/kg	448	34.8	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	91		30-130
Phenol-d5	77		30-130
Nitrobenzene-d5	151	Q	30-130
2-Fluorophenol	87		30-130
2,4,6-Tribromophenol	61		30-130
Terphenyl-d14	94		30-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D-SIM(M)
 Analytical Date: 09/06/22 12:35
 Analyst: CC
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	2920	E	mg/kg	1.39	0.276	1
C1-Decalins	7300		mg/kg	1.39	0.276	1
C2-Decalins	7220		mg/kg	1.39	0.276	1
C3-Decalins	3820		mg/kg	1.39	0.276	1
C4-Decalins	2920		mg/kg	1.39	0.276	1
Naphthalene	4890	E	mg/kg	2.77	0.797	1
C1-Naphthalenes	6510	E	mg/kg	2.77	0.797	1
C2-Naphthalenes	5720		mg/kg	2.77	0.797	1
C3-Naphthalenes	1550		mg/kg	2.77	0.797	1
C4-Naphthalenes	238		mg/kg	2.77	0.797	1
2-Methylnaphthalene	5540	E	mg/kg	2.77	0.715	1
1-Methylnaphthalene	3740	E	mg/kg	2.77	0.874	1
Benzothiophene	59.5		mg/kg	2.77	0.868	1
C1-Benzo(b)thiophenes	249		mg/kg	2.77	0.868	1
C2-Benzo(b)thiophenes	215		mg/kg	2.77	0.868	1
C3-Benzo(b)thiophenes	215		mg/kg	2.77	0.868	1
C4-Benzo(b)thiophenes	64.0		mg/kg	2.77	0.868	1
Biphenyl	555		mg/kg	2.77	0.857	1
2,6-Dimethylnaphthalene	2290		mg/kg	2.77	0.659	1
Dibenzofuran	66.2		mg/kg	2.77	0.873	1
Acenaphthylene	19.6		mg/kg	2.77	0.529	1
Acenaphthene	47.7		mg/kg	2.77	0.489	1
2,3,5-Trimethylnaphthalene	121		mg/kg	2.77	0.453	1
Fluorene	41.9		mg/kg	2.77	0.740	1
C1-Fluorenes	16.1		mg/kg	2.77	0.740	1
C2-Fluorenes	9.38		mg/kg	2.77	0.740	1
C3-Fluorenes	8.02		mg/kg	2.77	0.740	1
Dibenzothiophene	6.50		mg/kg	2.77	0.764	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
4-Methyldibenzothiophene(4MDT)	2.93		mg/kg	2.77	0.764	1
2/3-Methyldibenzothiophene(2MDT)	1.03	JB	mg/kg	2.77	0.764	1
1-Methyldibenzothiophene(1MDT)	0.809	J	mg/kg	2.77	0.764	1
C1-Dibenzothiophenes BS	5.03		mg/kg	2.77	0.764	1
C2-Dibenzothiophenes	4.91		mg/kg	2.77	0.764	1
C3-Dibenzothiophenes	2.66	J	mg/kg	2.77	0.764	1
C4-Dibenzothiophenes	ND		mg/kg	2.77	0.764	1
Phenanthrene	5.55		mg/kg	2.77	0.919	1
3-Methylphenanthrene (3MP)	1.05	J	mg/kg	2.77	0.919	1
2-Methylphenanthrene (2MP)	1.01	J	mg/kg	2.77	0.919	1
2-Methylanthracene (2MA)	ND		mg/kg	2.77	0.919	1
9/4-Methylphenanthrene (9MP)	0.986	J	mg/kg	2.77	0.919	1
1-Methylphenanthrene (1MP)	ND		mg/kg	2.77	0.919	1
C1-Phenanthrenes/Anthracenes	4.43		mg/kg	2.77	0.919	1
C2-Phenanthrenes/Anthr BS	2.80		mg/kg	2.77	0.919	1
C3-Phenanthrenes/Anthracenes	ND		mg/kg	2.77	0.919	1
C4-Phenanthrenes/Anthracenes	ND		mg/kg	2.77	0.919	1
Retene	ND		mg/kg	2.77	0.680	1
Anthracene	ND		mg/kg	2.77	0.572	1
Carbazole	ND		mg/kg	2.77	0.907	1
Fluoranthene	ND		mg/kg	2.77	0.881	1
Benzo(b)fluorene	ND		mg/kg	2.77	0.803	1
Pyrene	0.904	J	mg/kg	2.77	0.729	1
C1-Fluoranthenes/Pyrenes	1.64	J	mg/kg	2.77	0.729	1
C2-Fluoranthenes/Pyrenes	1.53	J	mg/kg	2.77	0.729	1
C3-Fluoranthenes/Pyrenes	ND		mg/kg	2.77	0.729	1
C4-Fluoranthenes/Pyrenes	ND		mg/kg	2.77	0.729	1
Naphthobenzothiophenes	ND		mg/kg	2.77	0.776	1
C1-Naphthobenzothiophenes	ND		mg/kg	2.77	0.776	1
C2-Naphthobenzothiophenes	ND		mg/kg	2.77	0.776	1
C3-Naphthobenzothiophenes	ND		mg/kg	2.77	0.776	1
C4-Naphthobenzothiophenes	ND		mg/kg	2.77	0.776	1
Benz(a)anthracene	ND		mg/kg	2.77	0.565	1
Chrysene/Triphenylene	ND		mg/kg	2.77	0.560	1
C1-Chrysenes	ND		mg/kg	2.77	0.560	1
C2-Chrysenes BS	ND		mg/kg	2.77	0.560	1
C3-Chrysenes	ND		mg/kg	2.77	0.560	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
C4-Chrysenes	ND		mg/kg	2.77	0.560	1
Benzo(b)fluoranthene	ND		mg/kg	2.77	0.721	1
Benzo(j)+(k)fluoranthene	ND		mg/kg	2.77	0.550	1
Benzo(a)fluoranthene	ND		mg/kg	2.77	0.550	1
Benzo(e)pyrene	ND		mg/kg	2.77	0.572	1
Benzo(a)pyrene	ND		mg/kg	2.77	0.791	1
Perylene	ND		mg/kg	2.77	0.535	1
Indeno(1,2,3-cd)pyrene	ND		mg/kg	2.77	0.752	1
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	2.77	0.749	1
Benzo(g,h,i)perylene	ND		mg/kg	2.77	0.736	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	129		50-130
Phenanthrene-d10	107		50-130
Benzo(a)pyrene-d12	89		50-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D
 Analytical Date: 09/03/22 01:26
 Analyst: PS
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
n-Nitrosodimethylamine	ND		mg/kg	456	115.	10
Pyridine	ND		mg/kg	1820	80.7	10
Benzaldehyde	ND		mg/kg	456	115.	10
Aniline	ND		mg/kg	456	68.8	10
Bis(2-chloroethyl)ether	ND		mg/kg	456	83.8	10
Phenol	ND		mg/kg	456	43.3	10
2-Chlorophenol	ND		mg/kg	456	30.1	10
1,3-Dichlorobenzene	ND		mg/kg	456	93.1	10
1,4-Dichlorobenzene	ND		mg/kg	456	94.9	10
1,2-Dichlorobenzene	ND		mg/kg	456	99.4	10
Benzyl Alcohol	ND		mg/kg	912	303.	10
Bis(2-chloroisopropyl)ether	ND		mg/kg	456	76.1	10
2-Methylphenol	ND		mg/kg	456	39.2	10
Acetophenone	ND		mg/kg	456	57.5	10
Hexachloroethane	ND		mg/kg	456	76.3	10
N-Nitroso-di-n-propylamine	ND		mg/kg	456	77.6	10
4-Methylphenol	ND		mg/kg	456	59.7	10
Nitrobenzene	ND		mg/kg	456	47.5	10
Isophorone	ND		mg/kg	456	50.0	10
2-Nitrophenol	ND		mg/kg	456	49.2	10
2,4-Dimethylphenol	ND		mg/kg	456	75.2	10
Benzoic Acid	ND		mg/kg	27400	5790	10
Bis(2-chloroethoxy)methane	ND		mg/kg	456	45.9	10
2,4-Dichlorophenol	ND		mg/kg	456	49.0	10
1,2,4-Trichlorobenzene	ND		mg/kg	456	28.2	10
Naphthalene	2790		mg/kg	456	30.6	10
4-Chloroaniline	ND		mg/kg	456	41.7	10
Hexachlorobutadiene	ND		mg/kg	456	88.5	10

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Caprolactam	ND		mg/kg	912	67.0	10
P-Chloro-M-Cresol	ND		mg/kg	456	65.9	10
2-Methylnaphthalene	4990		mg/kg	456	35.8	10
1,2,4,5-Tetrachlorobenzene	ND		mg/kg	456	43.4	10
Hexachlorocyclopentadiene	ND		mg/kg	2740	500.	10
2,4,6-Trichlorophenol	ND		mg/kg	456	40.8	10
2,4,5-Trichlorophenol	ND		mg/kg	456	54.4	10
Biphenyl	479.		mg/kg	456	47.9	10
2-Chloronaphthalene	ND		mg/kg	456	31.8	10
2-Nitroaniline	ND		mg/kg	456	73.7	10
Acenaphthylene	ND		mg/kg	456	39.8	10
Dimethylphthalate	ND		mg/kg	456	35.6	10
2,6-Dinitrotoluene	ND		mg/kg	456	118.	10
Acenaphthene	ND		mg/kg	456	45.6	10
3-Nitroaniline	ND		mg/kg	912	47.9	10
2,4-Dinitrophenol	ND		mg/kg	2740	777.	10
Dibenzofuran	ND		mg/kg	456	34.1	10
2,3,4,6-Tetrachlorophenol	ND		mg/kg	456	78.9	10
2,4-Dinitrotoluene	ND		mg/kg	456	31.9	10
4-Nitrophenol	ND		mg/kg	7570	2510	10
Fluorene	51.1	J	mg/kg	456	33.8	10
4-Chlorophenyl phenyl ether	ND		mg/kg	456	44.0	10
Diethylphthalate	ND		mg/kg	456	46.6	10
4-Nitroaniline	ND		mg/kg	2740	61.6	10
4,6-Dinitro-2-Methylphenol	ND		mg/kg	2740	876.	10
Azobenzene	ND		mg/kg	456	33.7	10
NitrosoDiPhenylAmine(NDPA)/DPA	ND		mg/kg	456	32.0	10
4-Bromophenyl phenyl ether	ND		mg/kg	456	42.9	10
Hexachlorobenzene	ND		mg/kg	456	44.4	10
Atrazine	ND		mg/kg	456	39.6	10
Pentachlorophenol	ND		mg/kg	2740	820.	10
Pentachloronitrobenzene	ND		mg/kg	456	45.0	10
Phenanthrene	ND		mg/kg	456	29.0	10
Anthracene	ND		mg/kg	456	23.3	10
Carbazole	ND		mg/kg	456	29.1	10
Di-n-butylphthalate	ND		mg/kg	456	43.4	10
Fluoranthene	ND		mg/kg	456	39.3	10

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Mansfield Lab						
Benzidine	ND		mg/kg	12800	2960	10
Pyrene	ND		mg/kg	456	37.7	10
Butylbenzylphthalate	ND		mg/kg	456	92.2	10
3,3'-Dichlorobenzidine	ND		mg/kg	912	77.8	10
Benz(a)anthracene	ND		mg/kg	456	26.4	10
Chrysene	ND		mg/kg	456	31.9	10
Bis(2-Ethylhexyl)phthalate	ND		mg/kg	456	120.	10
Di-n-octylphthalate	ND		mg/kg	912	189.	10
Benzo(b)fluoranthene	ND		mg/kg	456	40.0	10
Benzo(k)fluoranthene	ND		mg/kg	456	34.8	10
Benzo(a)pyrene	ND		mg/kg	456	32.9	10
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	456	37.6	10
Dibenz(a,h)anthracene	ND		mg/kg	456	47.3	10
Benzo(ghi)perylene	ND		mg/kg	456	35.4	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	96		30-130
Phenol-d5	85		30-130
Nitrobenzene-d5	251	Q	30-130
2-Fluorophenol	100		30-130
2,4,6-Tribromophenol	53		30-130
Terphenyl-d14	96		30-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8270D-SIM(M)
 Analytical Date: 09/07/22 07:00
 Analyst: CC
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs - Mansfield Lab						
cis/trans-Decalin	2720		mg/kg	2.77	0.551	2
Naphthalene	4340		mg/kg	5.54	1.59	2
C1-Naphthalenes	6590		mg/kg	5.54	1.59	2
2-Methylnaphthalene	5570		mg/kg	5.54	1.43	2
1-Methylnaphthalene	3800		mg/kg	5.54	1.75	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	100		50-130
Phenanthrene-d10	112		50-130
Benzo(a)pyrene-d12	85		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 09/05/22 17:46
Analyst: CC

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01-04 Batch: WG1682562-1					
cis/trans-Decalin	ND		mg/kg	1.50	0.298
C1-Decalins	ND		mg/kg	1.50	0.298
C2-Decalins	ND		mg/kg	1.50	0.298
C3-Decalins	ND		mg/kg	1.50	0.298
C4-Decalins	ND		mg/kg	1.50	0.298
Naphthalene	ND		mg/kg	3.00	0.862
C1-Naphthalenes	ND		mg/kg	3.00	0.862
C2-Naphthalenes	ND		mg/kg	3.00	0.862
C3-Naphthalenes	ND		mg/kg	3.00	0.862
C4-Naphthalenes	ND		mg/kg	3.00	0.862
2-Methylnaphthalene	ND		mg/kg	3.00	0.774
1-Methylnaphthalene	ND		mg/kg	3.00	0.945
Benzothiophene	ND		mg/kg	3.00	0.940
C1-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C2-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C3-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
C4-Benzo(b)thiophenes	ND		mg/kg	3.00	0.940
Biphenyl	ND		mg/kg	3.00	0.927
2,6-Dimethylnaphthalene	ND		mg/kg	3.00	0.713
Dibenzofuran	ND		mg/kg	3.00	0.945
Acenaphthylene	ND		mg/kg	3.00	0.572
Acenaphthene	ND		mg/kg	3.00	0.529
2,3,5-Trimethylnaphthalene	ND		mg/kg	3.00	0.491
Fluorene	ND		mg/kg	3.00	0.800
C1-Fluorenes	ND		mg/kg	3.00	0.800
C2-Fluorenes	ND		mg/kg	3.00	0.800
C3-Fluorenes	ND		mg/kg	3.00	0.800
Dibenzothiophene	ND		mg/kg	3.00	0.827
4-Methyldibenzothiophene(4MDT)	ND		mg/kg	3.00	0.827

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 09/05/22 17:46
Analyst: CC

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01-04 Batch: WG1682562-1					
2/3-Methyldibenzothiophene(2MDT)	11.2		mg/kg	3.00	0.827
1-Methyldibenzothiophene(1MDT)	ND		mg/kg	3.00	0.827
C1-Dibenzothiophenes BS	ND		mg/kg	3.00	0.827
C2-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C3-Dibenzothiophenes	ND		mg/kg	3.00	0.827
C4-Dibenzothiophenes	ND		mg/kg	3.00	0.827
Phenanthrene	ND		mg/kg	3.00	0.994
3-Methylphenanthrene (3MP)	ND		mg/kg	3.00	0.994
2-Methylphenanthrene (2MP)	ND		mg/kg	3.00	0.994
2-Methylanthracene (2MA)	ND		mg/kg	3.00	0.994
9/4-Methylphenanthrene (9MP)	ND		mg/kg	3.00	0.994
1-Methylphenanthrene (1MP)	ND		mg/kg	3.00	0.994
C1-Phenanthrenes/Anthracenes	1.23	J	mg/kg	3.00	0.994
C2-Phenanthrenes/Anthr BS	ND		mg/kg	3.00	0.994
C3-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
C4-Phenanthrenes/Anthracenes	ND		mg/kg	3.00	0.994
Retene	ND		mg/kg	3.00	0.736
Anthracene	ND		mg/kg	3.00	0.618
Carbazole	ND		mg/kg	3.00	0.981
Fluoranthene	ND		mg/kg	3.00	0.953
Benzo(b)fluorene	ND		mg/kg	3.00	0.869
Pyrene	ND		mg/kg	3.00	0.789
C1-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C2-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C3-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
C4-Fluoranthenes/Pyrenes	ND		mg/kg	3.00	0.789
Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C1-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C2-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM(M)
Analytical Date: 09/05/22 17:46
Analyst: CC

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL
PAHs - Mansfield Lab for sample(s): 01-04 Batch: WG1682562-1					
C3-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
C4-Naphthobenzothiophenes	ND		mg/kg	3.00	0.839
Benz(a)anthracene	ND		mg/kg	3.00	0.612
Chrysene/Triphenylene	ND		mg/kg	3.00	0.606
C1-Chrysenes	ND		mg/kg	3.00	0.606
C2-Chrysenes BS	ND		mg/kg	3.00	0.606
C3-Chrysenes	ND		mg/kg	3.00	0.606
C4-Chrysenes	ND		mg/kg	3.00	0.606
Benzo(b)fluoranthene	ND		mg/kg	3.00	0.780
Benzo(j)+(k)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(a)fluoranthene	ND		mg/kg	3.00	0.595
Benzo(e)pyrene	ND		mg/kg	3.00	0.619
Benzo(a)pyrene	ND		mg/kg	3.00	0.856
Perylene	ND		mg/kg	3.00	0.579
Indeno(1,2,3-cd)pyrene	ND		mg/kg	3.00	0.814
Dibenz(a,h)+(a,c)anthracene	ND		mg/kg	3.00	0.810
Benzo(g,h,i)perylene	ND		mg/kg	3.00	0.797

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Naphthalene-d8	96		50-130
Phenanthrene-d10	93		50-130
Benzo(a)pyrene-d12	89		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/02/22 16:20
Analyst: PS

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatle Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1682567-1					
n-Nitrosodimethylamine	ND		mg/kg	50.0	12.6
Pyridine	ND		mg/kg	200	8.85
Benzaldehyde	ND		mg/kg	50.0	12.6
Aniline	ND		mg/kg	50.0	7.54
Bis(2-chloroethyl)ether	ND		mg/kg	50.0	9.18
Phenol	ND		mg/kg	50.0	4.75
2-Chlorophenol	ND		mg/kg	50.0	3.30
1,3-Dichlorobenzene	ND		mg/kg	50.0	10.2
1,4-Dichlorobenzene	ND		mg/kg	50.0	10.4
1,2-Dichlorobenzene	ND		mg/kg	50.0	10.9
Benzyl Alcohol	ND		mg/kg	100	33.2
Bis(2-chloroisopropyl)ether	ND		mg/kg	50.0	8.34
2-Methylphenol	ND		mg/kg	50.0	4.30
Acetophenone	ND		mg/kg	50.0	6.30
Hexachloroethane	ND		mg/kg	50.0	8.36
N-Nitroso-di-n-propylamine	ND		mg/kg	50.0	8.51
4-Methylphenol	ND		mg/kg	50.0	6.54
Nitrobenzene	ND		mg/kg	50.0	5.21
Isophorone	ND		mg/kg	50.0	5.48
2-Nitrophenol	ND		mg/kg	50.0	5.39
2,4-Dimethylphenol	ND		mg/kg	50.0	8.24
Benzoic Acid	ND		mg/kg	3000	635.
Bis(2-chloroethoxy)methane	ND		mg/kg	50.0	5.03
2,4-Dichlorophenol	ND		mg/kg	50.0	5.37
1,2,4-Trichlorobenzene	ND		mg/kg	50.0	3.09
Naphthalene	ND		mg/kg	50.0	3.36
4-Chloroaniline	ND		mg/kg	50.0	4.57
Hexachlorobutadiene	ND		mg/kg	50.0	9.70
Caprolactam	ND		mg/kg	100	7.34

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/02/22 16:20
Analyst: PS

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1682567-1					
P-Chloro-M-Cresol	ND		mg/kg	50.0	7.22
2-Methylnaphthalene	ND		mg/kg	50.0	3.93
1,2,4,5-Tetrachlorobenzene	ND		mg/kg	50.0	4.76
Hexachlorocyclopentadiene	ND		mg/kg	300	54.8
2,4,6-Trichlorophenol	ND		mg/kg	50.0	4.47
2,4,5-Trichlorophenol	ND		mg/kg	50.0	5.96
Biphenyl	ND		mg/kg	50.0	5.25
2-Chloronaphthalene	ND		mg/kg	50.0	3.48
2-Nitroaniline	ND		mg/kg	50.0	8.08
Acenaphthylene	ND		mg/kg	50.0	4.36
Dimethylphthalate	ND		mg/kg	50.0	3.90
2,6-Dinitrotoluene	ND		mg/kg	50.0	12.9
Acenaphthene	ND		mg/kg	50.0	5.00
3-Nitroaniline	ND		mg/kg	100	5.25
2,4-Dinitrophenol	ND		mg/kg	300	85.2
Dibenzofuran	ND		mg/kg	50.0	3.74
2,3,4,6-Tetrachlorophenol	ND		mg/kg	50.0	8.65
2,4-Dinitrotoluene	ND		mg/kg	50.0	3.50
4-Nitrophenol	ND		mg/kg	830	275.
Fluorene	ND		mg/kg	50.0	3.70
4-Chlorophenyl phenyl ether	ND		mg/kg	50.0	4.82
Diethylphthalate	ND		mg/kg	50.0	5.11
4-Nitroaniline	ND		mg/kg	300	6.75
4,6-Dinitro-2-Methylphenol	ND		mg/kg	300	96.0
Azobenzene	ND		mg/kg	50.0	3.69
NitrosoDiPhenylAmine(NDPA)/DPA	ND		mg/kg	50.0	3.51
4-Bromophenyl phenyl ether	ND		mg/kg	50.0	4.70
Hexachlorobenzene	ND		mg/kg	50.0	4.87
Atrazine	ND		mg/kg	50.0	4.34

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/02/22 16:20
Analyst: PS

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1682567-1					
Pentachlorophenol	ND		mg/kg	300	89.9
Pentachloronitrobenzene	ND		mg/kg	50.0	4.93
Phenanthrene	ND		mg/kg	50.0	3.18
Anthracene	ND		mg/kg	50.0	2.55
Carbazole	ND		mg/kg	50.0	3.19
Di-n-butylphthalate	ND		mg/kg	50.0	4.76
Fluoranthene	ND		mg/kg	50.0	4.31
Benzidine	ND		mg/kg	1400	324.
Pyrene	ND		mg/kg	50.0	4.13
Butylbenzylphthalate	ND		mg/kg	50.0	10.1
3,3'-Dichlorobenzidine	ND		mg/kg	100	8.53
Benz(a)anthracene	ND		mg/kg	50.0	2.90
Chrysene	ND		mg/kg	50.0	3.50
Bis(2-Ethylhexyl)phthalate	ND		mg/kg	50.0	13.1
Di-n-octylphthalate	ND		mg/kg	100	20.7
Benzo(b)fluoranthene	ND		mg/kg	50.0	4.38
Benzo(k)fluoranthene	ND		mg/kg	50.0	3.81
Benzo(a)pyrene	ND		mg/kg	50.0	3.61
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	50.0	4.12
Dibenz(a,h)anthracene	ND		mg/kg	50.0	5.18
Benzo(ghi)perylene	ND		mg/kg	50.0	3.88

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 1,8270D
Analytical Date: 09/02/22 16:20
Analyst: PS

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 16:03

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Mansfield Lab for sample(s): 01-04 Batch: WG1682567-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorobiphenyl	111		30-130
Phenol-d5	98		30-130
Nitrobenzene-d5	118		30-130
2-Fluorophenol	108		30-130
2,4,6-Tribromophenol	101		30-130
Terphenyl-d14	119		30-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs - Mansfield Lab Associated sample(s): 01-04 Batch: WG1682562-2 WG1682562-3								
Naphthalene	108		119		50-130	10		30
2-Methylnaphthalene	104		110		50-130	6		30
Acenaphthylene	96		102		50-130	6		30
Acenaphthene	100		103		50-130	3		30
Fluorene	103		105		50-130	2		30
Phenanthrene	101		105		50-130	4		30
Anthracene	108		108		50-130	0		30
Fluoranthene	109		107		50-130	2		30
Pyrene	112		109		50-130	3		30
Benz(a)anthracene	90		94		50-130	4		30
Chrysene/Triphenylene	94		97		50-130	3		30
Benzo(b)fluoranthene	108		106		50-130	2		30
Benzo(j)+(k)fluoranthene	104		105		50-130	1		30
Benzo(a)pyrene	100		102		50-130	2		30
Indeno(1,2,3-cd)pyrene	103		103		50-130	0		30
Dibenz(a,h)+(a,c)anthracene	102		101		50-130	1		30
Benzo(g,h,i)perylene	115		114		50-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
PAHs - Mansfield Lab Associated sample(s): 01-04 Batch: WG1682562-2 WG1682562-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
Naphthalene-d8	95		100		50-130
Phenanthrene-d10	96		94		50-130
Benzo(a)pyrene-d12	98		93		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-04 Batch: WG1682567-2 WG1682567-3								
n-Nitrosodimethylamine	109	Q	105	Q	27-88	4		30
Pyridine	110	Q	107	Q	10-105	3		30
Benzaldehyde	91	Q	94	Q	26-77	3		30
Aniline	76		78		25-84	3		30
Bis(2-chloroethyl)ether	112		115		40-140	3		30
Phenol	102		103		30-130	1		30
2-Chlorophenol	104		105		30-130	1		30
1,3-Dichlorobenzene	103		102		40-140	1		30
1,4-Dichlorobenzene	103		103		40-140	0		30
1,2-Dichlorobenzene	103		105		40-140	2		30
Benzyl Alcohol	87		86		40-140	1		30
Bis(2-chloroisopropyl)ether	115		114		40-140	1		30
2-Methylphenol	105		105		30-130	0		30
Acetophenone	102		100		40-140	2		30
Hexachloroethane	102	Q	100	Q	25-81	2		30
N-Nitroso-di-n-propylamine	114		114		40-140	0		30
4-Methylphenol	108		109		30-130	1		30
Nitrobenzene	115		118		40-140	3		30
Isophorone	106		109		40-140	3		30
2-Nitrophenol	101		104		30-130	3		30
2,4-Dimethylphenol	133	Q	137	Q	30-130	3		30
Benzoic Acid	552	Q	564	Q	10-44	2		30
Bis(2-chloroethoxy)methane	110		112		40-140	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-04 Batch: WG1682567-2 WG1682567-3								
2,4-Dichlorophenol	103		105		30-130	2		30
1,2,4-Trichlorobenzene	103		105		40-140	2		30
Naphthalene	104		105		40-140	1		30
4-Chloroaniline	72		73		40-140	1		30
Hexachlorobutadiene	110		111		40-140	1		30
Caprolactam	100		102		40-140	2		30
P-Chloro-M-Cresol	100		103		30-130	3		30
2-Methylnaphthalene	101		101		40-140	0		30
1,2,4,5-Tetrachlorobenzene	104		105		40-140	1		30
Hexachlorocyclopentadiene	92	Q	92	Q	12-87	0		30
2,4,6-Trichlorophenol	101		103		30-130	2		30
2,4,5-Trichlorophenol	102		101		30-130	1		30
Biphenyl	97		96		40-140	1		30
2-Chloronaphthalene	102		101		40-140	1		30
2-Nitroaniline	105		107		40-140	2		30
Acenaphthylene	95		95		40-140	0		30
Dimethylphthalate	100		101		40-140	1		30
2,6-Dinitrotoluene	99		96		40-140	3		30
Acenaphthene	98		97		40-140	1		30
3-Nitroaniline	84		82		40-140	2		30
2,4-Dinitrophenol	121	Q	117	Q	10-96	3		30
Dibenzofuran	103		103		40-140	0		30
2,3,4,6-Tetrachlorophenol	105		105		30-130	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-04 Batch: WG1682567-2 WG1682567-3								
2,4-Dinitrotoluene	104		102		40-140	2		30
4-Nitrophenol	111		110		30-130	1		30
Fluorene	95		96		40-140	1		30
4-Chlorophenyl phenyl ether	102		102		40-140	0		30
Diethylphthalate	101		102		40-140	1		30
4-Nitroaniline	104		102		40-140	2		30
4,6-Dinitro-2-Methylphenol	92		92		30-130	0		30
Azobenzene	101		103		40-140	2		30
NitrosoDiPhenylAmine(NDPA)/DPA	105		104		40-140	1		30
4-Bromophenyl phenyl ether	102		103		40-140	1		30
Hexachlorobenzene	110		114		40-140	4		30
Atrazine	99		100		40-140	1		30
Pentachlorophenol	104		104		30-130	0		30
Pentachloronitrobenzene	106		110		40-140	4		30
Phenanthrene	102		105		40-140	3		30
Anthracene	104		106		40-140	2		30
Carbazole	106		107		40-140	1		30
Di-n-butylphthalate	100		100		40-140	0		30
Fluoranthene	110		110		40-140	0		30
Benzidine	139	Q	138	Q	10-72	1		30
Pyrene	101		100		40-140	1		30
Butylbenzylphthalate	89		90		40-140	1		30
3,3'-Dichlorobenzidine	73		74		40-140	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01-04 Batch: WG1682567-2 WG1682567-3								
Benz(a)anthracene	104		102		40-140	2		30
Chrysene	108		111		40-140	3		30
Bis(2-Ethylhexyl)phthalate	88		90		40-140	2		30
Di-n-octylphthalate	74		76		40-140	3		30
Benzo(b)fluoranthene	88		86		40-140	2		30
Benzo(k)fluoranthene	102		106		40-140	4		30
Benzo(a)pyrene	98		98		40-140	0		30
Indeno(1,2,3-cd)Pyrene	100		98		40-140	2		30
Dibenz(a,h)anthracene	99		98		40-140	1		30
Benzo(ghi)perylene	92		93		40-140	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorobiphenyl	111		109		30-130
Phenol-d5	100		98		30-130
Nitrobenzene-d5	116		116		30-130
2-Fluorophenol	106		106		30-130
2,4,6-Tribromophenol	108		109		30-130
Terphenyl-d14	112		112		30-130

PETROLEUM HYDROCARBONS

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8015D(M)
 Analytical Date: 09/01/22 22:48
 Analyst: WR
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	4550		mg/kg	185	54.8	1
n-Decane (C10)	19500		mg/kg	185	58.9	1
n-Undecane (C11)	46600	E	mg/kg	185	55.1	1
n-Dodecane (C12)	46200	E	mg/kg	185	40.2	1
n-Tridecane (C13)	36200		mg/kg	185	50.7	1
2,6,10-Trimethyldodecane (1380)	6410		mg/kg	185	27.8	1
n-Tetradecane (C14)	20700		mg/kg	185	27.8	1
2,6,10-Trimethyltridecane (1470)	4170		mg/kg	185	22.0	1
n-Pentadecane (C15)	6810		mg/kg	185	22.0	1
n-Hexadecane (C16)	1180		mg/kg	185	27.8	1
Norpristane (1650)	144	J	mg/kg	185	60.9	1
n-Heptadecane (C17)	219		mg/kg	185	60.9	1
Pristane	110	J	mg/kg	185	39.4	1
n-Octadecane (C18)	91.8	J	mg/kg	185	37.1	1
Phytane	31.9	J	mg/kg	185	23.2	1
n-Nonadecane (C19)	ND		mg/kg	185	47.5	1
n-Eicosane (C20)	ND		mg/kg	185	26.1	1
n-Heneicosane (C21)	ND		mg/kg	185	22.1	1
n-Docosane (C22)	ND		mg/kg	185	19.3	1
n-Tricosane (C23)	ND		mg/kg	185	23.5	1
n-Tetracosane (C24)	ND		mg/kg	185	30.9	1
n-Pentacosane (C25)	ND		mg/kg	185	97.7	1
n-Hexacosane (C26)	ND		mg/kg	185	27.1	1
n-Heptacosane (C27)	ND		mg/kg	185	22.2	1
n-Octacosane (C28)	ND		mg/kg	185	39.6	1
n-Nonacosane (C29)	ND		mg/kg	185	123.	1
n-Triacontane (C30)	ND		mg/kg	185	21.2	1
n-Hentriacontane (C31)	ND		mg/kg	185	26.2	1

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-01
Client ID: PRODUCT SAMPLE #1 / (JP-5)
Sample Location: Not Specified

Date Collected: 08/02/22 10:44
Date Received: 08/12/22
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	185	23.3	1
n-Tritriacontane (C33)	ND		mg/kg	185	26.0	1
n-Tetatriacontane (C34)	ND		mg/kg	185	29.4	1
n-Pentatriacontane (C35)	ND		mg/kg	185	32.2	1
n-Hexatriacontane (C36)	ND		mg/kg	185	36.7	1
n-Heptatriacontane (C37)	ND		mg/kg	185	41.0	1
n-Octatriacontane (C38)	ND		mg/kg	185	43.0	1
n-Nonatriacontane (C39)	ND		mg/kg	185	60.0	1
n-Tetracontane (C40)	ND		mg/kg	185	60.0	1
Total Petroleum Hydrocarbons (C9-C44)	884000		mg/kg	6090	1340	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	86		50-130
d50-Tetracosane	88		50-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-01 D
 Client ID: PRODUCT SAMPLE #1 / (JP-5)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8015D(M)
 Analytical Date: 09/07/22 19:05
 Analyst: WR
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Undecane (C11)	42500		mg/kg	923	276.	5
n-Dodecane (C12)	46700		mg/kg	923	201.	5
Total Saturated Hydrocarbons	189000	J	mg/kg	185	19.3	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	89		50-130
d50-Tetracosane	86		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-02
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8015D(M)
 Analytical Date: 09/02/22 00:14
 Analyst: WR
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	12800		mg/kg	185	54.9	1
n-Decane (C10)	25400		mg/kg	185	59.0	1
n-Undecane (C11)	25800		mg/kg	185	55.2	1
n-Dodecane (C12)	23400		mg/kg	185	40.3	1
n-Tridecane (C13)	19400		mg/kg	185	50.8	1
2,6,10-Trimethyldodecane (1380)	3440		mg/kg	185	27.8	1
n-Tetradecane (C14)	13000		mg/kg	185	27.8	1
2,6,10-Trimethyltridecane (1470)	3920		mg/kg	185	22.1	1
n-Pentadecane (C15)	7810		mg/kg	185	22.1	1
n-Hexadecane (C16)	3820		mg/kg	185	27.9	1
Norpristane (1650)	770		mg/kg	185	61.0	1
n-Heptadecane (C17)	1630		mg/kg	185	61.0	1
Pristane	766		mg/kg	185	39.5	1
n-Octadecane (C18)	730		mg/kg	185	37.1	1
Phytane	239		mg/kg	185	23.2	1
n-Nonadecane (C19)	192		mg/kg	185	47.5	1
n-Eicosane (C20)	39.4	J	mg/kg	185	26.2	1
n-Heneicosane (C21)	ND		mg/kg	185	22.1	1
n-Docosane (C22)	ND		mg/kg	185	19.3	1
n-Tricosane (C23)	ND		mg/kg	185	23.5	1
n-Tetracosane (C24)	ND		mg/kg	185	31.0	1
n-Pentacosane (C25)	ND		mg/kg	185	97.9	1
n-Hexacosane (C26)	ND		mg/kg	185	27.2	1
n-Heptacosane (C27)	ND		mg/kg	185	22.3	1
n-Octacosane (C28)	ND		mg/kg	185	39.7	1
n-Nonacosane (C29)	ND		mg/kg	185	123.	1
n-Triacontane (C30)	ND		mg/kg	185	21.2	1
n-Hentriacontane (C31)	ND		mg/kg	185	26.2	1

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-02
 Client ID: PRODUCT SAMPLE #2 / (F-24)
 Sample Location: Not Specified

Date Collected: 08/01/22 13:45
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	185	23.3	1
n-Tritriacontane (C33)	ND		mg/kg	185	26.0	1
n-Tetatriacontane (C34)	ND		mg/kg	185	29.4	1
n-Pentatriacontane (C35)	ND		mg/kg	185	32.3	1
n-Hexatriacontane (C36)	ND		mg/kg	185	36.8	1
n-Heptatriacontane (C37)	ND		mg/kg	185	41.1	1
n-Octatriacontane (C38)	ND		mg/kg	185	43.1	1
n-Nonatriacontane (C39)	ND		mg/kg	185	60.1	1
n-Tetracontane (C40)	ND		mg/kg	185	60.1	1
Total Petroleum Hydrocarbons (C9-C44)	843000		mg/kg	6100	1340	1
Total Saturated Hydrocarbons	143000	J	mg/kg	185	19.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	88		50-130
d50-Tetracosane	91		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8015D(M)
 Analytical Date: 09/02/22 01:40
 Analyst: WR
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	1210		mg/kg	176	52.4	1
n-Decane (C10)	2330		mg/kg	176	56.3	1
n-Undecane (C11)	4140		mg/kg	176	52.7	1
n-Dodecane (C12)	6480		mg/kg	176	38.5	1
n-Tridecane (C13)	9820		mg/kg	176	48.4	1
2,6,10-Trimethyldodecane (1380)	1730		mg/kg	176	26.5	1
n-Tetradecane (C14)	11300		mg/kg	176	26.5	1
2,6,10-Trimethyltridecane (1470)	2960		mg/kg	176	21.0	1
n-Pentadecane (C15)	13200		mg/kg	176	21.0	1
n-Hexadecane (C16)	13400		mg/kg	176	26.6	1
Norpristane (1650)	3650		mg/kg	176	58.2	1
n-Heptadecane (C17)	13800		mg/kg	176	58.2	1
Pristane	5090		mg/kg	176	37.7	1
n-Octadecane (C18)	11900		mg/kg	176	35.4	1
Phytane	3370		mg/kg	176	22.2	1
n-Nonadecane (C19)	8880		mg/kg	176	45.4	1
n-Eicosane (C20)	7020		mg/kg	176	25.0	1
n-Heneicosane (C21)	5280		mg/kg	176	21.1	1
n-Docosane (C22)	3190		mg/kg	176	18.4	1
n-Tricosane (C23)	1780		mg/kg	176	22.4	1
n-Tetracosane (C24)	841		mg/kg	176	29.5	1
n-Pentacosane (C25)	449		mg/kg	176	93.4	1
n-Hexacosane (C26)	162	J	mg/kg	176	25.9	1
n-Heptacosane (C27)	63.4	J	mg/kg	176	21.2	1
n-Octacosane (C28)	40.4	J	mg/kg	176	37.9	1
n-Nonacosane (C29)	ND		mg/kg	176	118.	1
n-Triacontane (C30)	ND		mg/kg	176	20.2	1
n-Hentriacontane (C31)	ND		mg/kg	176	25.0	1

Project Name: HDOH RED HILL

Lab Number: L2243669

Project Number: 103S518817512

Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-03
 Client ID: PRODUCT SAMPLE #3 / (F-76)
 Sample Location: Not Specified

Date Collected: 08/02/22 10:27
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	176	22.2	1
n-Tritriacontane (C33)	ND		mg/kg	176	24.8	1
n-Tettratriacontane (C34)	ND		mg/kg	176	28.1	1
n-Pentatriacontane (C35)	ND		mg/kg	176	30.8	1
n-Hexatriacontane (C36)	ND		mg/kg	176	35.1	1
n-Heptatriacontane (C37)	ND		mg/kg	176	39.2	1
n-Octatriacontane (C38)	ND		mg/kg	176	41.1	1
n-Nonatriacontane (C39)	ND		mg/kg	176	57.3	1
n-Tetracontane (C40)	ND		mg/kg	176	57.3	1
Total Petroleum Hydrocarbons (C9-C44)	886000		mg/kg	5820	1280	1
Total Saturated Hydrocarbons	132000	J	mg/kg	176	18.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	101		50-130
d50-Tetracosane	91		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

SAMPLE RESULTS

Lab ID: L2243669-04
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8015D(M)
 Analytical Date: 09/02/22 03:05
 Analyst: WR
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Nonane (C9)	4780		mg/kg	185	54.8	1
n-Decane (C10)	21800		mg/kg	185	59.0	1
n-Undecane (C11)	47900	E	mg/kg	185	55.2	1
n-Dodecane (C12)	47500	E	mg/kg	185	40.3	1
n-Tridecane (C13)	35700		mg/kg	185	50.7	1
2,6,10-Trimethyldodecane (1380)	5220		mg/kg	185	27.8	1
n-Tetradecane (C14)	20800		mg/kg	185	27.8	1
2,6,10-Trimethyltridecane (1470)	4480		mg/kg	185	22.0	1
n-Pentadecane (C15)	7620		mg/kg	185	22.0	1
n-Hexadecane (C16)	1430		mg/kg	185	27.8	1
Norpristane (1650)	160	J	mg/kg	185	61.0	1
n-Heptadecane (C17)	254		mg/kg	185	61.0	1
Pristane	138	J	mg/kg	185	39.5	1
n-Octadecane (C18)	103	J	mg/kg	185	37.1	1
Phytane	37.0	J	mg/kg	185	23.2	1
n-Nonadecane (C19)	ND		mg/kg	185	47.5	1
n-Eicosane (C20)	ND		mg/kg	185	26.2	1
n-Heneicosane (C21)	ND		mg/kg	185	22.1	1
n-Docosane (C22)	ND		mg/kg	185	19.3	1
n-Tricosane (C23)	ND		mg/kg	185	23.5	1
n-Tetracosane (C24)	ND		mg/kg	185	30.9	1
n-Pentacosane (C25)	ND		mg/kg	185	97.8	1
n-Hexacosane (C26)	ND		mg/kg	185	27.2	1
n-Heptacosane (C27)	ND		mg/kg	185	22.2	1
n-Octacosane (C28)	ND		mg/kg	185	39.6	1
n-Nonacosane (C29)	ND		mg/kg	185	123.	1
n-Triacontane (C30)	ND		mg/kg	185	21.2	1
n-Hentriacontane (C31)	ND		mg/kg	185	26.2	1

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-04
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Dotriacontane (C32)	ND		mg/kg	185	23.3	1
n-Tritriacontane (C33)	ND		mg/kg	185	26.0	1
n-Tetatriacontane (C34)	ND		mg/kg	185	29.4	1
n-Pentatriacontane (C35)	ND		mg/kg	185	32.2	1
n-Hexatriacontane (C36)	ND		mg/kg	185	36.8	1
n-Heptatriacontane (C37)	ND		mg/kg	185	41.0	1
n-Octatriacontane (C38)	ND		mg/kg	185	43.1	1
n-Nonatriacontane (C39)	ND		mg/kg	185	60.0	1
n-Tetracontane (C40)	ND		mg/kg	185	60.0	1
Total Petroleum Hydrocarbons (C9-C44)	926000		mg/kg	6100	1340	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	89		50-130
d50-Tetracosane	93		50-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**SAMPLE RESULTS**

Lab ID: L2243669-04 D
 Client ID: PRODUCT SAMPLE #4 / (GWS)
 Sample Location: Not Specified

Date Collected: 11/24/21 10:00
 Date Received: 08/12/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil
 Analytical Method: 1,8015D(M)
 Analytical Date: 09/07/22 20:35
 Analyst: WR
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A
 Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Saturated Hydrocarbons by GC-FID - Mansfield Lab						
n-Undecane (C11)	45700		mg/kg	924	276.	5
n-Dodecane (C12)	47600		mg/kg	924	201.	5
Total Saturated Hydrocarbons	196000	J	mg/kg	185	19.3	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	92		50-130
d50-Tetracosane	89		50-130

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 09/02/22 11:39
Analyst: WR

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-04 Batch: WG1682562-1					
n-Nonane (C9)	ND		mg/kg	200	59.3
n-Decane (C10)	ND		mg/kg	200	63.8
n-Undecane (C11)	ND		mg/kg	200	59.7
n-Dodecane (C12)	ND		mg/kg	200	43.6
n-Tridecane (C13)	ND		mg/kg	200	54.9
2,6,10-Trimethyldodecane (1380)	ND		mg/kg	200	30.1
n-Tetradecane (C14)	ND		mg/kg	200	30.1
2,6,10-Trimethyltridecane (1470)	ND		mg/kg	200	23.9
n-Pentadecane (C15)	84.0	JC	mg/kg	200	23.9
n-Hexadecane (C16)	ND		mg/kg	200	30.1
Norpristane (1650)	ND		mg/kg	200	66.0
n-Heptadecane (C17)	ND		mg/kg	200	66.0
Pristane	ND		mg/kg	200	42.7
n-Octadecane (C18)	ND		mg/kg	200	40.1
Phytane	ND		mg/kg	200	25.1
n-Nonadecane (C19)	ND		mg/kg	200	51.4
n-Eicosane (C20)	ND		mg/kg	200	28.3
n-Heneicosane (C21)	ND		mg/kg	200	23.9
n-Docosane (C22)	ND		mg/kg	200	20.9
n-Tricosane (C23)	ND		mg/kg	200	25.4
n-Tetracosane (C24)	ND		mg/kg	200	33.5
n-Pentacosane (C25)	ND		mg/kg	200	106.
n-Hexacosane (C26)	ND		mg/kg	200	29.4
n-Heptacosane (C27)	ND		mg/kg	200	24.1
n-Octacosane (C28)	ND		mg/kg	200	42.9
n-Nonacosane (C29)	ND		mg/kg	200	133.
n-Triacontane (C30)	ND		mg/kg	200	22.9
n-Hentriacontane (C31)	ND		mg/kg	200	28.3
n-Dotriacontane (C32)	ND		mg/kg	200	25.2

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 1,8015D(M)
Analytical Date: 09/02/22 11:39
Analyst: WR

Extraction Method: EPA 3580A
Extraction Date: 09/01/22 15:33

Parameter	Result	Qualifier	Units	RL	MDL
Saturated Hydrocarbons by GC-FID - Mansfield Lab for sample(s): 01-04 Batch: WG1682562-1					
n-Tritriacontane (C33)	ND		mg/kg	200	28.1
n-Tetratriacontane (C34)	ND		mg/kg	200	31.8
n-Pentatriacontane (C35)	ND		mg/kg	200	34.9
n-Hexatriacontane (C36)	ND		mg/kg	200	39.8
n-Heptatriacontane (C37)	ND		mg/kg	200	44.4
n-Octatriacontane (C38)	ND		mg/kg	200	46.6
n-Nonatriacontane (C39)	ND		mg/kg	200	64.9
n-Tetracontane (C40)	ND		mg/kg	200	64.9
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	6600	1450
Total Saturated Hydrocarbons	84.0	J	mg/kg	200	20.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
ortho-terphenyl	87		50-130
d50-Tetracosane	89		50-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Saturated Hydrocarbons by GC-FID - Mansfield Lab Associated sample(s): 01-04 Batch: WG1682562-2 WG1682562-3								
Nonane (C9)	102		101		50-130	1		30
n-Decane (C10)	102		99		50-130	3		30
n-Dodecane (C12)	108		108		50-130	0		30
n-Tetradecane (C14)	100		99		50-130	1		30
n-Hexadecane (C16)	112		112		50-130	0		30
n-Octadecane (C18)	113		114		50-130	1		30
n-Nonadecane (C19)	94		96		50-130	2		30
n-Eicosane (C20)	109		110		50-130	1		30
n-Docosane (C22)	106		107		50-130	1		30
n-Tetracosane (C24)	110		112		50-130	2		30
n-Hexacosane (C26)	105		106		50-130	1		30
n-Octacosane (C28)	101		103		50-130	2		30
n-Triacontane (C30)	102		103		50-130	1		30
n-Hexatriacontane (C36)	79		82		50-130	4		30

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
ortho-terphenyl	93		92		50-130
d50-Tetracosane	87		87		50-130

Project Name: HDOH RED HILL**Lab Number:** L2243669**Project Number:** 103S518817512**Report Date:** 09/08/22**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
N/A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2243669-01A	Vial unpreserved 20ml hard-cap	N/A	NA			Y	Absent		A2-SVOC-8270(14),A2-PIANO8260(365),A2-ALKPAH(365)
L2243669-01B	Vial unpreserved 20ml hard-cap	N/A	NA			Y	Absent		A2-SVOC-8270(14),A2-PIANO8260(365),A2-ALKPAH(365)
L2243669-02A	Vial unpreserved 20ml hard-cap	N/A	NA			Y	Absent		A2-SVOC-8270(14),A2-PIANO8260(365),A2-ALKPAH(365)
L2243669-02B	Vial unpreserved 20ml hard-cap	N/A	NA			Y	Absent		A2-SVOC-8270(14),A2-PIANO8260(365),A2-ALKPAH(365)
L2243669-03A	Vial unpreserved 20ml hard-cap	N/A	NA			Y	Absent		A2-SVOC-8270(14),A2-PIANO8260(365),A2-ALKPAH(365)
L2243669-03B	Vial unpreserved 20ml hard-cap	N/A	NA			Y	Absent		A2-SVOC-8270(14),A2-PIANO8260(365),A2-ALKPAH(365)
L2243669-04A	Vial unpreserved	N/A	NA			Y	Absent		A2-SVOC-8270(14),A2-PIANO8260(365),A2-ALKPAH(365)

Container Comments

L2243669-01A

Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

Data Qualifiers

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name: HDOH RED HILL
Project Number: 103S518817512

Lab Number: L2243669
Report Date: 09/08/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN-OF-CUSTODY RECORD



L2243669
TETRA TECH

Client Name/Account #: TetraTech, Inc.
 Address: 737 Bishop St., Suite 2340
 City/State/Zip: Honolulu, HI 96813
 Project Manager: Eric Jensen
 Telephone Number: 808.225.7084 email eric.jensen@tetratech.com
 Sampler Name: (Print) By NAVSUP- FLC, Procured by Anay Shende (DOH-SHWB)
 Sampler Signature: [Signature]

Report To: Eric Jensen
 Invoice To: Eric Jensen
 Project ID: HDOH Red Hill
 Project #: 103S518817512

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Multi-Incremental Sample	Preservative							Matrix					Analyze For:					RUSH TAT (Pre-Schedule)	Standard TAT	SAMPLER	
							Ice	HNO ₃ (Red Label)	HCl (VOA; Blue Label)	NaOH (Orange Label)	H ₂ SO ₄ Plastic (Yellow Label)	H ₂ SO ₄ Glass (Yellow Label)	None (20 mL Product VOA)	Other (one MeOH VOA)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify): Free Product	Analyzes pending	EPA Method 8015M (forensic method)	EPA Method 8270E (SVOCs)				EPA Method 8270M-Alkylated PAHs (forensic method)
01 Product Sample #1 / (JP-5)	8/2/22	10:44	2	X							2					X	X	X	X	X	X	X	X	X	X	X	AS
02 Product Sample #2 / (F-24)	8/1/22	13:45	2	X							2					X	X	X	X	X	X	X	X	X	X	X	AS
03 Product Sample #3 / (F-76)	8/2/22	10:27	2	X							2					X	X	X	X	X	X	X	X	X	X	X	AS
04 Product Sample #4 / (GWS)	11/24/22	10:00	1	X							1					X	X	X	X	X	X	X	X	X	X	X	AS

Special Instructions:
 NOTE 1: analyze all samples by EPA Method 8015M and EPA Method 8270E (SVOCs) and then perform either alkylated PAH analysis or PIANO analysis depending on the source materials identified in each sample.
 NOTE 2: Coordinate with Eric Litman (NewField) on specific requirements.
 NOTE 3: GWS= Groundwater Sump near Adit 3;
 NOTE 4: Samples are taken from the Tanks; hence marked a grab sample.
 * SAMPLE #4 is <30ML VOL.

Laboratory Comments:
 Temperature Upon Receipt:
 VOCs Free of Headpace? Y N
 N/A
 PRODUCT SAMPLES

Relinquished by:		Date		Time		Method of Shipment:		Received by:		Date		Time	
Anay Shende (ASHWB)		08/10/2022		14:00		FEDEX		Eric Jensen		8/10/22		1400	
Eric Jensen		8/10/22		1630				[Signature]		8/10/22		10:40 AM	

UPS 8/12/22 10:40