



Tetra Tech Inc (HI)
737 Bishop St, Suite 2340
Honolulu, Hawaii 96813
Tel: 808-441-6600
Email: Yvonne.parry@Tetrattech.com
RE: HDOH Red Hill

Work Order No.: 2201009

Dear Yvonne Parry:

Torrent Laboratory, Inc. received 1 sample(s) on January 04, 2022 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

A handwritten signature in blue ink that reads "Kathie Evans". The signature is written in a cursive style and is positioned above a horizontal line.

Kathie Evans
Project Manager

January 11, 2022

Date



Date: 1/11/2022

Client: Tetra Tech Inc (HI)

Project: HDOH Red Hill

Work Order: 2201009

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc

Methane analysis was sub-contracted to ELAP certified laboratory AAC. Sub-contract data will follow under a separate cover.



Sample Result Summary

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date Received: 01/04/22

Date Reported: 01/11/22

ERH2313-RHMW11 (Zone 5)

2201009-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
TOC	A5310B	1	0.40	2.0	29.0	mg/L
TPH as Diesel	SW8015B	1	0.037	0.10	0.114	mg/L



SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_BNASIM	Prep Batch Date/Time: 1/6/22	1:40:00PM
Prep Batch ID: 1138225	Prep Analyst: NDUM	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Pyridine	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
N-Nitrosdimethylamine	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Aniline	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Phenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-chloroethyl) ether	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2-Chlorophenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
1,3-Dichlorobenzene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
1,4-Dichlorobenzene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Benzyl Alcohol	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
1,2-Dichlorobenzene	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2-Methylphenol (o-Cresol)	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-chloroisopropyl)ether	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
3-/4-Methylphenol (p-/m-Cresol)	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
N-nitroso-di-n-propylamine	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Hexachloroethane	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Nitrobenzene	SW8270	1	0.900	18	ND		ug/L	01/11/22	17:51	TA	462738
Isophorone	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2-Nitrophenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dimethylphenol	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Benzoic Acid	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-Chloroethoxy)methane	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dichlorophenol	SW8270	1	0.180	3.6	ND		ug/L	01/11/22	17:51	TA	462738
1,2,4-Trichlorobenzene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,6-Dichlorophenol	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Naphthalene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
4-Chloroaniline	SW8270	1	0.180	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Hexachloro-1,3-butadiene	SW8270	1	0.450	18	ND		ug/L	01/11/22	17:51	TA	462738
4-Chloro-3-methylphenol	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2-Methylnaphthalene	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
1-Methylnaphthalene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Hexachlorocyclopentadiene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,4,6-Trichlorophenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,4,5-Trichlorophenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2-Chloronaphthalene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
2-Nitroaniline	SW8270	1	0.900	9.0	ND		ug/L	01/11/22	17:51	TA	462738
1,4-Dinitrobenzene	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Dimethyl phthalate	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
1,3-Dinitrobenzene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Acenaphthylene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738



SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_BNASIM	Prep Batch Date/Time: 1/6/22	1:40:00PM
Prep Batch ID: 1138225	Prep Analyst:	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,6-Dinitrotoluene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
1,2-Dinitrobenzene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
3-Nitroaniline	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Acenaphthene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dinitrophenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
4-Nitrophenol	SW8270	1	0.900	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Dibenzofuran	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dinitrotoluene	SW8270	1	0.180	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,3,5,6-Tetrachlorophenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
2,3,4,6-Tetrachlorophenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Diethylphthalate	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Fluorene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
4-Chlorophenyl phenyl ether	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
4-Nitroaniline	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
4,6-Dinitro-2-methylphenol	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Diphenylamine	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Azobenzene	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
4-Bromophenyl phenyl ether	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Hexachlorobenzene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Pentachlorophenol	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Phenanthrene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Anthracene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Carbazole	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Di-n-butylphthalate	SW8270	1	0.450	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Fluoranthene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Benzidine	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Pyrene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Benzyl butyl phthalate	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Benz[a]anthracene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
3,3-Dichlorobenzidine	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Chrysene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-Ethylhexyl)phthalate	SW8270	1	0.180	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Di-n-octyl phthalate	SW8270	1	0.180	3.6	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[b]fluoranthene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[k]fluoranthene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[a]pyrene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Indeno[1,2,3-cd]pyrene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Dibenzo[a,h]anthracene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[g,h,i]perylene	SW8270	1	0.180	0.54	ND		ug/L	01/11/22	17:51	TA	462738



SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_BNASIM	Prep Batch Date/Time: 1/6/22	1:40:00PM
Prep Batch ID: 1138225	Prep Analyst: NDUM	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Acceptance Limits											
2-Fluorophenol (S)	SW8270		15 - 105		43.4		%	01/11/22	17:51	TA	462738
Phenol-d6 (S)	SW8270		15 - 100		27.1		%	01/11/22	17:51	TA	462738
Nitrobenzene-d5 (S)	SW8270		30 - 100		87.0		%	01/11/22	17:51	TA	462738
2-Fluorobiphenyl (S)	SW8270		30 - 105		97.1		%	01/11/22	17:51	TA	462738
2,4,6-Tribromophenol (S)	SW8270		15 - 125		116		%	01/11/22	17:51	TA	462738
p-Terphenyl-d14 (S)	SW8270		30 - 125		117		%	01/11/22	17:51	TA	462738



SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_TPH	Prep Batch Date/Time: 1/4/22	10:32:00AM
Prep Batch ID: 1138163	Prep Analyst:	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel	SW8015B	1	0.037	0.10	0.114	x	mg/L	01/05/22	10:47	SN	462653
TPH as Motor Oil	SW8015B	1	0.11	0.40	ND		mg/L	01/05/22	10:47	SN	462653
Acceptance Limits											
Pentacosane (S)	SW8015B		59 - 129		86.9		%	01/05/22	10:47	SN	462653

NOTE: x - Diesel result due to unknown organics within diesel quantified range



SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_TPH SG	Prep Batch Date/Time: 1/5/22	9:20:00AM
Prep Batch ID: 1138164	Prep Analyst:	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.037	0.10	ND		mg/L	01/05/22	23:01	SN	462632
TPH as Motor Oil (SG)	SW8015B	1	0.11	0.40	ND		mg/L	01/05/22	23:01	SN	462632
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 129		99.0		%	01/05/22	23:01	SN	462632



SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001B
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: TOC-W-P	Prep Batch Date/Time: 1/10/22	3:53:00PM
Prep Batch ID: 1138306	Prep Analyst:	BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TOC	A5310B	1	0.40	2.0	29.0		mg/L	01/10/22	15:53	BJAY	462730



SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001C
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 5030VOC	Prep Batch Date/Time: 1/4/22	10:37:00AM
Prep Batch ID: 1138173	Prep Analyst: JZHAO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.26	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Chloromethane	SW8260B	1	0.17	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Vinyl Chloride	SW8260B	1	0.21	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Bromomethane	SW8260B	1	0.21	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Chloroethane	SW8260B	1	0.11	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Trichlorofluoromethane	SW8260B	1	0.19	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,1-Dichloroethene	SW8260B	1	0.14	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Freon 113	SW8260B	1	0.34	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Methylene Chloride	SW8260B	1	0.13	1.0	ND		ug/L	01/04/22	15:41	JZ	462617
trans-1,2-Dichloroethene	SW8260B	1	0.16	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
MTBE	SW8260B	1	0.077	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
tert-Butanol	SW8260B	1	2.9	5.0	ND		ug/L	01/04/22	15:41	JZ	462617
DIPE	SW8260B	1	0.12	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,1-Dichloroethane	SW8260B	1	0.12	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
ETBE	SW8260B	1	0.064	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
cis-1,2-Dichloroethene	SW8260B	1	0.15	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
2,2-Dichloropropane	SW8260B	1	0.094	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Bromochloromethane	SW8260B	1	0.15	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Chloroform	SW8260B	1	0.12	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Carbon Tetrachloride	SW8260B	1	0.16	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,1,1-Trichloroethane	SW8260B	1	0.16	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,1-Dichloropropene	SW8260B	1	0.19	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Benzene	SW8260B	1	0.065	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
TAME	SW8260B	1	0.072	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dichloroethane	SW8260B	1	0.11	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Trichloroethylene	SW8260B	1	0.15	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Dibromomethane	SW8260B	1	0.11	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dichloropropane	SW8260B	1	0.089	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Bromodichloromethane	SW8260B	1	0.076	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
cis-1,3-Dichloropropene	SW8260B	1	0.078	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Toluene	SW8260B	1	0.14	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Tetrachloroethylene	SW8260B	1	0.24	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
trans-1,3-Dichloropropene	SW8260B	1	0.22	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,1,2-Trichloroethane	SW8260B	1	0.076	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Dibromochloromethane	SW8260B	1	0.18	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,3-Dichloropropane	SW8260B	1	0.22	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dibromoethane	SW8260B	1	0.079	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Chlorobenzene	SW8260B	1	0.16	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Ethylbenzene	SW8260B	1	0.20	0.50	ND		ug/L	01/04/22	15:41	JZ	462617



SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001C
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 5030VOC	Prep Batch Date/Time: 1/4/22	10:37:00AM
Prep Batch ID: 1138173	Prep Analyst:	JZHAO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	0.087	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
m,p-Xylene	SW8260B	1	0.39	1.0	ND		ug/L	01/04/22	15:41	JZ	462617
o-Xylene	SW8260B	1	0.15	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Styrene	SW8260B	1	0.11	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Bromoform	SW8260B	1	0.076	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Isopropyl Benzene	SW8260B	1	0.22	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
n-Propylbenzene	SW8260B	1	0.30	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
Bromobenzene	SW8260B	1	0.15	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,1,1,2-Tetrachloroethane	SW8260B	1	0.079	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
2-Chlorotoluene	SW8260B	1	0.25	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,3,5-Trimethylbenzene	SW8260B	1	0.24	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,2,3-Trichloropropane	SW8260B	1	0.15	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
4-Chlorotoluene	SW8260B	1	0.22	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
tert-Butylbenzene	SW8260B	1	0.26	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,2,4-Trimethylbenzene	SW8260B	1	0.23	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
sec-Butyl Benzene	SW8260B	1	0.30	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
p-Isopropyltoluene	SW8260B	1	0.27	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,3-Dichlorobenzene	SW8260B	1	0.17	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,4-Dichlorobenzene	SW8260B	1	0.18	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
n-Butylbenzene	SW8260B	1	0.27	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dichlorobenzene	SW8260B	1	0.16	0.50	ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.76	2.0	ND		ug/L	01/04/22	15:41	JZ	462617
Hexachlorobutadiene	SW8260B	1	0.62	2.0	ND		ug/L	01/04/22	15:41	JZ	462617
1,2,4-Trichlorobenzene	SW8260B	1	0.93	2.0	ND		ug/L	01/04/22	15:41	JZ	462617
Naphthalene	SW8260B	1	1.2	2.0	ND		ug/L	01/04/22	15:41	JZ	462617
1,2,3-Trichlorobenzene	SW8260B	1	1.2	2.0	ND		ug/L	01/04/22	15:41	JZ	462617
(S) Dibromofluoromethane	SW8260B		61.2 - 131		109		%	01/04/22	15:41	JZ	462617
(S) Toluene-d8	SW8260B		75.1 - 127		96.6		%	01/04/22	15:41	JZ	462617
(S) 4-Bromofluorobenzene	SW8260B		64.1 - 120		99.7		%	01/04/22	15:41	JZ	462617



SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001C
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 5030GRO	Prep Batch Date/Time: 1/4/22	10:37:00AM
Prep Batch ID: 1138176	Prep Analyst: JZHAO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	29	50	ND		ug/L	01/04/22	15:41	JZ	462617
(S) 4-Bromofluorobenzene	8260TPH		41.5 - 125		86.8		%	01/04/22	15:41	JZ	462617



MB Summary Report

Work Order:	2201009	Prep Method:	3510_TPH	Prep Date:	01/04/22	Prep Batch:	1138163
Matrix:	Water	Analytical Method:	SW8015B	Analyzed Date:	1/5/2022	Analytical Batch:	462653
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH as Diesel	0.037	0.10	ND	
TPH as Motor Oil	0.11	0.40	ND	
Pentacosane (S)			75.6	

Work Order:	2201009	Prep Method:	3510_TPH SG	Prep Date:	01/05/22	Prep Batch:	1138164
Matrix:	Water	Analytical Method:	SW8015B	Analyzed Date:	1/5/2022	Analytical Batch:	462632
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH as Diesel (SG)	0.037	0.10	ND	
TPH as Motor Oil (SG)	0.11	0.40	ND	
Pentacosane (S)			79.4	

Work Order:	2201009	Prep Method:	5030VOC	Prep Date:	01/04/22	Prep Batch:	1138173
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	1/4/2022	Analytical Batch:	462617
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	0.26	0.50	ND	
Chloromethane	0.17	0.50	ND	
Vinyl Chloride	0.21	0.50	ND	
Bromomethane	0.21	0.50	ND	
Chloroethane	0.11	0.50	ND	
Trichlorofluoromethane	0.19	0.50	ND	
1,1-Dichloroethene	0.14	0.50	ND	
Freon 113	0.34	0.50	ND	
Methylene Chloride	0.13	1.0	ND	
trans-1,2-Dichloroethene	0.16	0.50	ND	
MTBE	0.077	0.50	ND	
tert-Butanol	2.9	5.0	ND	
DIPE	0.12	0.50	ND	
1,1-Dichloroethane	0.12	0.50	ND	
ETBE	0.064	0.50	ND	
cis-1,2-Dichloroethene	0.15	0.50	ND	
2,2-Dichloropropane	0.094	0.50	ND	
Bromochloromethane	0.15	0.50	ND	
Chloroform	0.12	0.50	ND	
Carbon Tetrachloride	0.16	0.50	ND	
1,1,1-Trichloroethane	0.16	0.50	ND	
1,1-Dichloropropene	0.19	0.50	ND	



MB Summary Report

Work Order:	2201009	Prep Method:	5030VOC	Prep Date:	01/04/22	Prep Batch:	1138173
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	1/4/2022	Analytical Batch:	462617
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Benzene	0.065	0.50	ND		
TAME	0.072	0.50	ND		
1,2-Dichloroethane	0.11	0.50	ND		
Trichloroethylene	0.15	0.50	ND		
Dibromomethane	0.11	0.50	ND		
1,2-Dichloropropane	0.089	0.50	ND		
Bromodichloromethane	0.076	0.50	ND		
cis-1,3-Dichloropropene	0.078	0.50	ND		
Toluene	0.14	0.50	ND		
Tetrachloroethylene	0.24	0.50	ND		
trans-1,3-Dichloropropene	0.22	0.50	ND		
1,1,2-Trichloroethane	0.076	0.50	ND		
Dibromochloromethane	0.18	0.50	ND		
1,3-Dichloropropane	0.22	0.50	ND		
1,2-Dibromoethane	0.079	0.50	ND		
Chlorobenzene	0.16	0.50	ND		
Ethylbenzene	0.20	0.50	ND		
1,1,1,2-Tetrachloroethane	0.087	0.50	ND		
m,p-Xylene	0.39	1.0	ND		
o-Xylene	0.15	0.50	ND		
Styrene	0.11	0.50	ND		
Bromoform	0.076	0.50	ND		
Isopropyl Benzene	0.22	0.50	ND		
n-Propylbenzene	0.30	0.50	ND		
Bromobenzene	0.15	0.50	ND		
1,1,2,2-Tetrachloroethane	0.079	0.50	ND		
2-Chlorotoluene	0.25	0.50	ND		
1,3,5-Trimethylbenzene	0.24	0.50	ND		
1,2,3-Trichloropropane	0.15	0.50	ND		
4-Chlorotoluene	0.22	0.50	ND		
tert-Butylbenzene	0.26	0.50	ND		
1,2,4-Trimethylbenzene	0.23	0.50	ND		
sec-Butyl Benzene	0.30	0.50	ND		
p-Isopropyltoluene	0.27	0.50	ND		
1,3-Dichlorobenzene	0.17	0.50	ND		
1,4-Dichlorobenzene	0.18	0.50	ND		
n-Butylbenzene	0.27	0.50	0.27		
1,2-Dichlorobenzene	0.16	0.50	ND		
1,2-Dibromo-3-Chloropropane	0.76	2.0	ND		
Hexachlorobutadiene	0.62	2.0	ND		
1,2,4-Trichlorobenzene	0.93	2.0	ND		
Naphthalene	1.2	2.0	ND		
1,2,3-Trichlorobenzene	1.2	2.0	ND		
(S) Dibromofluoromethane			107		
(S) Toluene-d8			96.0		



MB Summary Report

Work Order:	2201009	Prep Method:	5030VOC	Prep Date:	01/04/22	Prep Batch:	1138173
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	1/4/2022	Analytical Batch:	462617
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
(S) 4-Bromofluorobenzene			98.7	

Work Order:	2201009	Prep Method:	5030GRO	Prep Date:	01/04/22	Prep Batch:	1138176
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	1/4/2022	Analytical Batch:	462617
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	29	50	37	
(S) 4-Bromofluorobenzene			89.8	



MB Summary Report

Work Order:	2201009	Prep Method:	3510_BNASIM	Prep Date:	01/06/22	Prep Batch:	1138225
Matrix:	Water	Analytical Method:	SW8270	Analyzed Date:	1/11/2022	Analytical Batch:	462738
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Pyridine	0.45	3.6	ND	
N-Nitrosodimethylamine	0.45	3.6	ND	
Aniline	0.90	3.6	ND	
Phenol	0.45	3.6	ND	
Bis(2-chloroethyl) ether	0.90	3.6	ND	
2-Chlorophenol	0.45	3.6	ND	
1,3-Dichlorobenzene	0.45	3.6	ND	
1,4-Dichlorobenzene	0.45	3.6	ND	
Benzyl Alcohol	0.90	3.6	ND	
1,2-Dichlorobenzene	0.90	3.6	ND	
2-Methylphenol (o-Cresol)	0.90	3.6	ND	
Bis(2-chloroisopropyl)ether	0.45	3.6	ND	
3-/4-Methylphenol (p-/m-Cresol)	0.45	3.6	ND	
N-nitroso-di-n-propylamine	0.90	3.6	ND	
Hexachloroethane	0.45	3.6	ND	
Nitrobenzene	0.90	18	ND	
Isophorone	0.90	3.6	ND	
2-Nitrophenol	0.45	3.6	ND	
2,4-Dimethylphenol	0.90	3.6	ND	
Benzoic Acid	0.45	3.6	ND	
Bis(2-Chloroethoxy)methane	0.90	3.6	ND	
2,4-Dichlorophenol	0.18	3.6	ND	
1,2,4-Trichlorobenzene	0.45	3.6	ND	
2,6-Dichlorophenol	0.90	3.6	ND	
Naphthalene	0.18	0.54	ND	
4-Chloroaniline	0.18	3.6	ND	
Hexachloro-1,3-butadiene	0.45	18	ND	
4-Chloro-3-methylphenol	0.90	3.6	ND	
2-Methylnaphthalene	0.90	3.6	ND	
1-Methylnaphthalene	0.45	3.6	ND	
Hexachlorocyclopentadiene	0.45	3.6	ND	
2,4,6-Trichlorophenol	0.45	3.6	ND	
2,4,5-Trichlorophenol	0.45	3.6	ND	
2-Chloronaphthalene	0.18	0.54	ND	
2-Nitroaniline	0.90	9.0	ND	
1,4-Dinitrobenzene	0.90	3.6	ND	
Dimethyl phthalate	0.90	3.6	ND	
1,3-Dinitrobenzene	0.45	3.6	ND	
Acenaphthylene	0.18	0.54	ND	
2,6-Dinitrotoluene	0.45	3.6	ND	
1,2-Dinitrobenzene	0.45	3.6	ND	
3-Nitroaniline	0.45	3.6	ND	
Acenaphthene	0.45	3.6	ND	
2,4-Dinitrophenol	0.45	3.6	ND	
4-Nitrophenol	0.90	3.6	ND	



MB Summary Report

Work Order:	2201009	Prep Method:	3510_BNASIM	Prep Date:	01/06/22	Prep Batch:	1138225
Matrix:	Water	Analytical Method:	SW8270	Analyzed Date:	1/11/2022	Analytical Batch:	462738
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dibenzofuran	0.18	0.54	ND	
2,4-Dinitrotoluene	0.18	3.6	ND	
2,3,5,6-Tetrachlorophenol	0.45	3.6	ND	
2,3,4,6-Tetrachlorophenol	0.45	3.6	ND	
Diethylphthalate	0.45	3.6	ND	
Fluorene	0.45	3.6	ND	
4-Chlorophenyl phenyl ether	0.45	3.6	ND	
4-Nitroaniline	0.45	3.6	ND	
4,6-Dinitro-2-methylphenol	0.45	3.6	ND	
Diphenylamine	0.45	3.6	ND	
Azobenzene	0.45	3.6	ND	
4-Bromophenyl phenyl ether	0.45	3.6	ND	
Hexachlorobenzene	0.18	0.54	ND	
Pentachlorophenol	0.18	0.54	ND	
Phenanthrene	0.18	0.54	ND	
Anthracene	0.18	0.54	ND	
Carbazole	0.18	0.54	ND	
Di-n-butylphthalate	0.45	3.6	ND	
Fluoranthene	0.18	0.54	ND	
Benzidine	0.18	0.54	ND	
Pyrene	0.18	0.54	ND	
Benzyl butyl phthalate	0.18	0.54	ND	
Benz[a]anthracene	0.18	0.54	ND	
3,3-Dichlorobenzidine	0.18	0.54	ND	
Chrysene	0.18	0.54	ND	
Bis(2-Ethylhexyl)phthalate	0.18	3.6	0.336	
Di-n-octyl phthalate	0.18	3.6	ND	
Benzo[b]fluoranthene	0.18	0.54	ND	
Benzo[k]fluoranthene	0.18	0.54	ND	
Benzo[a]pyrene	0.18	0.54	ND	
Indeno[1,2,3-cd]pyrene	0.18	0.54	ND	
Dibenz[a,h]anthracene	0.18	0.54	ND	
Benzo[g,h,i]perylene	0.18	0.54	ND	
2-Fluorophenol (S)			61.2	
Phenol-d6 (S)			37.6	
Nitrobenzene-d5 (S)			97.1	
2-Fluorobiphenyl (S)			97.8	
2,4,6-Tribromophenol (S)			119	
p-Terphenyl-d14 (S)			116	



MB Summary Report

Work Order:	2201009	Prep Method:	TOC-W-P	Prep Date:	01/10/22	Prep Batch:	1138306
Matrix:	Water	Analytical Method:	A5310B	Analyzed Date:	1/10/2022	Analytical Batch:	462730
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
TOC	0.40	2.0	0.46		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2201009	Prep Method:	3510_TPH	Prep Date:	01/04/22	Prep Batch:	1138163
Matrix:	Water	Analytical Method:	SW8015B	Analyzed Date:	1/5/2022	Analytical Batch:	462653
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel	0.037	0.10	ND	1.0	95.5	90.0	5.93	52 - 115	30	
Pentacosane (S)				200	115	107		59 - 129		

Work Order:	2201009	Prep Method:	3510_TPH SG	Prep Date:	01/05/22	Prep Batch:	1138164
Matrix:	Water	Analytical Method:	SW8015B	Analyzed Date:	1/5/2022	Analytical Batch:	462632
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel (SG)	0.037	0.10	ND	1.0	66.6	74.1	10.7	42 - 115	30	
TPH as Motor Oil (SG)			ND	200				40 - 129		

Work Order:	2201009	Prep Method:	5030VOC	Prep Date:	01/04/22	Prep Batch:	1138173
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	1/4/2022	Analytical Batch:	462617
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	0.14	0.50	ND	17.9	96.9	93.6	3.53	61.4 - 129	30	
Benzene	0.16	0.50	ND	17.9	110	107	3.62	66.9 - 140	30	
Trichloroethylene	0.15	0.50	ND	17.9	103	98.6	3.90	69.3 - 144	30	
Toluene	0.14	0.50	ND	17.9	113	108	4.58	76.6 - 123	30	
Chlorobenzene	0.16	0.50	ND	17.9	109	103	5.80	73.9 - 137	30	
(S) Dibromofluoromethane				17.9	105	100		61.2 - 131		
(S) Toluene-d8				17.9	110	104		75.1 - 127		
(S) 4-Bromofluorobenzene				17.9	102	97.4		64.1 - 120		

Work Order:	2201009	Prep Method:	5030GRO	Prep Date:	01/04/22	Prep Batch:	1138176
Matrix:	Water	Analytical Method:	SW8260B	Analyzed Date:	1/4/2022	Analytical Batch:	462617
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	29	50	37	238	83.1	90.8	8.70	52.4 - 127	30	
(S) 4-Bromofluorobenzene				11.9	79.7	83.5		41.5 - 125		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2201009	Prep Method:	3510_BNASIM	Prep Date:	01/06/22	Prep Batch:	1138225
Matrix:	Water	Analytical Method:	SW8270	Analyzed Date:	1/11/2022	Analytical Batch:	462738
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	0.45	3.6	ND	2.000	32.1	32.5	1.39	15 - 95	30	
2-Chlorophenol	0.45	3.6	ND	2.000	72.4	74.8	3.39	15 - 105	30	
1,4-Dichlorobenzene	0.45	3.6	ND	2.000	68.3	70.6	2.88	35 - 105	30	
N-nitroso-di-n-propylamine	0.90	3.6	ND	2.000	69.6	95.3	31.5	40 - 115	30	
1,2,4-Trichlorobenzene	0.45	3.6	ND	2.000	73.5	76.1	3.34	45 - 110	30	
4-Chloro-3-methylphenol	0.90	3.6	ND	2.000	78.2	80.5	3.15	15 - 110	30	
Acenaphthene	0.18	0.54	ND	2.000	83.9	86.3	1.39	45 - 110	30	
4-Nitrophenol	0.90	3.6	ND	2.000	87.3	92.7	5.56	15 - 140	30	
2,4-Dinitrotoluene	0.18	0.54	ND	2.000	91.3	93.8	2.70	40 - 115	30	
Pentachlorophenol	0.18	0.54	ND	2.000	112	101	10.3	15 - 120	30	
Pyrene	0.18	0.54	ND	2.000	91.0	93.2	2.17	45 - 125	30	
2-Fluorophenol (S)				1111	66.2	67.1		15 - 105		
Phenol-d6 (S)				1111	41.5	41.6		15 - 100		
Nitrobenzene-d5 (S)				555.6	96.0	98.1		30 - 100		
2-Fluorobiphenyl (S)				555.6	107	109		15 - 125		
2,4,6-Tribromophenol (S)				1111	121	123		15 - 125		
p-Terphenyl-d14 (S)				555.6	118	120		30 - 125		

Work Order:	2201009	Prep Method:	TOC-W-P	Prep Date:	01/10/22	Prep Batch:	1138306
Matrix:	Water	Analytical Method:	A5310B	Analyzed Date:	1/10/2022	Analytical Batch:	462730
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TOC	0.40	2.0	0.46	10	95.7	95.3	0.419	80 - 120	20	



Duplicate QC Summary Report

Work Order: 2201009	Prep Method: TOC-W-P	Prep Date: 1/10/2022	Prep Batch: 1138306
Matrix:	Analytical Method: A5310B	Analyzed Date: 01/10/22	Analytical Batch: 462730
Units:	Lab Sample ID: 2201009-001B-DUP-1138306		

<u>Parameters</u>	<u>MDL</u>	<u>PQL</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>% RPD</u>
TOC	0.40	2.0	29.0	29.4	1.37



Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - mg/L and mg/Kg (equivalent to PPM - parts per million in liquid and solid), ug/L and ug/Kg (equivalent to PPB - parts per billion in liquid and solid), ug/m3 , mg/m3 , ppbv and ppmv (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), ug/Wipe (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H - Indicates that the recommended holding time for the analyte or compound has been exceeded
J - Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R - The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S - Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.



Sample Receipt Checklist

Client Name: Tetra Tech Inc (HI)

Date and Time Received: 1/4/2022 1:00:00PM

Project Name: HDOH Red Hill

Received By: Helena Ueng

Work Order No.: 2201009

Physically Logged By: Helena Ueng

Checklist Completed By: Helena Ueng

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present? Yes
Chain of custody signed when relinquished and received? Yes
Chain of custody agrees with sample labels? Yes
Custody seals intact on sample bottles? Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler? Not Present
Shipping Container/Cooler In Good Condition? Yes
Samples in proper container/bottle? Yes
Samples containers intact? No
Sufficient sample volume for indicated test? Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes
Container/Temp Blank temperature in compliance? Yes Temperature: 2.0 °C
Water-VOA vials have zero headspace? Yes
Water-pH acceptable upon receipt? N/A
pH Checked by: N/A pH Adjusted by: N/A

Comments:

Samples were received frozen--1 of 6 HCL voas was broken (bottom of vial fell out), 2 other voas had septa ballooned ~10cm above vial cap; 3 remaining intact vials will be used for VOC & methane analyses. Sample volume aliquoted from amber upon lab receipt into HCL preserved vials for TOC analysis.



Login Summary Report

Client ID: TL5162 Tetra Tech Inc (HI)
Project Name: HDOH Red Hill
Project # : 103S518817512
Report Due Date: 1/11/2022

QC Level: II
TAT Requested: 5+ day:5
Date Received: 1/4/2022
Time Received: 1:00 pm

Comments:
Work Order # : **2201009**

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
2201009-001A	ERH2313-RHMW11 (Zone 5)	12/30/21 11:00	Water	02/13/22			SVOC_W_SIMFull TPHDOSG_W_8015B TPHDO_W_8015B(M)	
<u>Sample Note:</u>	SVOCs by SIM and TPHd/mo w & w/o silica gel							
2201009-001B	ERH2313-RHMW11 (Zone 5)	12/30/21 11:00	Water	02/13/22			TOC_5310B	
2201009-001C	ERH2313-RHMW11 (Zone 5)	12/30/21 11:00	Water	02/13/22			VOC_W_8260B VOC_W_GRO	
<u>Sample Note:</u>	VOCs & TPHg (only 2 voas available)							
2201009-001D	ERH2313-RHMW11 (Zone 5)	12/30/21 11:00	Water	02/13/22			Sub_RSK-175	Yes
<u>Sample Note:</u>	Only 1 voa available for RSK-SUB							

