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HYDROGEOLOGY • ENGINEERING

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October 18, 2022

VIA FEDERAL EXPRESS STANDARD

Mr. Steve Rounds
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Southern California Region
9211 Oakdale Avenue
Chatsworth, CA 91311-6520

Re: Data Submittal for Groundwater Monitoring and Groundwater Extraction
and Treatment Pilot Testing, Third Quarter 2022, Raytheon Company (Former
Hughes Aircraft Company) Facility, 1901 West Malvern Avenue, Fullerton, California

Dear Mr. Rounds:

This letter has been prepared for the submittal of groundwater monitoring and groundwater treatment pilot testing data collected during the third quarter 2022 for the former Raytheon Company site located at 1901 West Malvern Avenue, Fullerton, California (the Site) (Figure 1). Groundwater monitoring activities were completed in general accordance with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC)-approved Groundwater Monitoring Work Plan and Sampling and Analysis Plan (GMWPSAP) and subsequent addenda (DTSC, 2003 and 2011; Hargis + Associates, Inc. [H+A], 2003, 2011a, 2011b, and 2017). Groundwater treatment pilot testing continued throughout the third quarter 2022 in general accordance with the DTSC-approved Groundwater Extraction and Treatment System (GETS) Pilot Testing, Corrective Measures Study Work Plan Addendum No. 6 (DTSC, 2013; H+A, 2013). The results of the third quarter 2022 groundwater monitoring and pilot GETS operation from June through August 2022 are included in this data submittal.

GROUNDWATER MONITORING

Groundwater monitoring consists of measuring groundwater levels and collecting groundwater samples from monitor wells and piezometers at the Site (Figure 2). Quarterly water level measurements were taken at all wells and piezometers, and groundwater samples were collected from extraction wells and select monitor wells in August 2022 in general accordance with the GMWPSAP and Addendum No. 1 (H+A, 2003 and 2011a) (Table 1).

Water Level Measurement and Groundwater Sample Collection

Groundwater monitoring included water level measurements in all Site monitor wells, piezometers, and extraction wells (Figures 2 and 3). Quarterly groundwater levels were measured in all wells on August 1, 2022 (Table 2).

Groundwater samples were collected August 2 through August 5, 2022 (Appendix A). Analytical results are summarized in Table 3 and provided in Appendix B. Additional groundwater monitoring was conducted as part of routine operation and monitoring of the pilot GETS. A summary of the pilot GETS operation and monitoring is provided below. Full discussion of groundwater monitoring results will be presented in the next annual report.

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Folsom, CA
Mesa, AZ
Tucson, AZ

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Original and field duplicate groundwater samples were analyzed by Advanced Technology Laboratories, Inc., Signal Hill, California (ATL) (Appendix B). Laboratory split groundwater samples were analyzed by Eurofins Calscience, Tustin, California (Appendix B). Chain-of-custody documentation was enclosed with each sample shipment. Results of groundwater sample volatile organic compound (VOC) and 1,4-dioxane analyses have been summarized (Table 3).

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples collected in August 2022 consisted of trip blanks, field duplicates, an equipment rinsate blank, and laboratory split samples. Trip blanks were provided by ATL. Field duplicate samples and laboratory split samples were collected for analysis of VOCs and 1,4-dioxane from extraction well EW-01 and monitor wells MW-33 and MW-36 in August 2022 (Table 3).

The relative percent difference (RPD) was calculated between the results of each field duplicate and each laboratory split sample with its corresponding original sample. The RPD for 1,1-dichloroethylene (1,1-DCE) between the original and the split groundwater samples collected from EW-01 was outside of acceptable limits, therefore the data was qualified as estimated. All other results for groundwater samples collected from MW-33 and MW-36 are within quality control criteria. The following table summarizes the principal Site compounds, 1,1-DCE, trichloroethylene (TCE) and 1,4-dioxane results in the original, field duplicate and laboratory split groundwater samples, as well as the calculated RPDs and assigned qualifier flag, if any.

Well ID / Collection Date	Compound	Original (ug/l)	Duplicate (ug/l)	RPD (percent)	Split (ug/l)	RPD (percent)	Qualifier Flag
EW-01 08/03/22	1,1-DCE	55	58	5	28	65	E
	TCE	0.11	0.13	17	0.18	48	
	1,4-dioxane	33	30	10	31	6	
MW-33 08/02/22	1,1-DCE	6.3	5.7	10	5.1	21	
	TCE	0.46 J	0.63	31	0.76	49	
	1,4-dioxane	<0.20	<0.20	NA	<0.50	NA	
MW-36 08/04/22	1,1-DCE	99	97	2	75	28	
	TCE	<0.50	<0.50	NA	<0.50	NA	
	1,4-dioxane	6.2	7.7	22	6.8	9	

ug/l = micrograms per liter

NA = not applicable

The following table summarizes H+A project QA/QC criteria for field duplicate and laboratory split RPDs.

Range of detection	RPD Criteria (percent)	Project Qualifier Flag	Note
PQL to 10x PQL	< 100	E (estimated) or U (unusable)	Project qualifier flag may be assigned if RPD criteria is not met and/or result is not consistent with data trending
10x PQL to 100x PQL	< 30		
>100x PQL	< 50		

PQL = practical quantitation limit (undiluted)

< = less than

> = greater than

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There were no detections of 1,4-dioxane in the equipment rinsate blank or method blanks analyzed with groundwater samples collected during the August 2022 groundwater monitoring event (Table 3; Appendix B). Additionally, there were no detections of VOCs in the trip blanks, equipment rinsate blank or method blanks analyzed with groundwater samples collected during the August 2022 groundwater sampling event.

The data quality assessment also included review of laboratory QA/QC results. The laboratory analysis of 1,4-dioxane from the groundwater samples collected from monitor wells MW-32A, MW-32C, and MW-42 on August 3, 2022; monitor wells MW-34A and MW-39 on August 4, 2022; and extraction wells EW-02 and MW-29 on August 11, 2022 were performed beyond the analysis method holding time, therefore, the 1,4-dioxane results were qualified as estimated. The cause of the holding time exceedance was related to laboratory instrumentation issues at ATL that were occurring during the groundwater sampling event. All other laboratory QA/QC results are within acceptable criteria.

GROUNDWATER EXTRACTION AND TREATMENT PILOT STUDY

This section summarizes the pilot GETS operation within the three-month period of monitoring conducted June through August 2022. The pilot GETS consists of four groundwater extraction wells, the treatment system, and the disposal system; however, the current phase of pilot testing is operating using only two extraction wells, EW-02 and MW-29. Current extraction rates are nominally 40 gallons per minute (gpm) from extraction well EW-02 and nominally 10 gpm from extraction well MW-29. The treatment system processes extracted groundwater through an advanced oxidation unit that utilizes ultraviolet (UV) light and hydrogen peroxide (UV Ox), followed by a granular activated carbon polish prior to disposal to the sanitary sewer.

During the third quarter of 2022, the pilot GETS was operational approximately 94 percent of the available runtime and approximately 4.2 million gallons of groundwater was treated and discharged to the sanitary sewer (Table 4). The average operational monthly discharge flowrate to the sanitary sewer from June to August 2022 was approximately 34.4 gpm. Since startup of the pilot GETS, approximately 239 million gallons of groundwater has been treated at an average operational flowrate of 39.9 gpm through the end of August 2022 (Table 4).

Current monthly and quarterly pilot GETS monitoring activities include collecting groundwater samples from extraction wells EW-02 and MW-29 in addition to collecting samples at treatment system sampling ports: Influent, Post-Particulate-Filter, Post-UV-Ox, Carbon-Breakthrough, and Carbon-Effluent (Tables 5 and 6; Figures 4 and 5). Samples collected during these activities were transmitted to ATL for analysis in accordance with chain-of-custody procedures. Analytical results of the extraction wells and treatment system sampling have been summarized (Table 6; Appendix B).

The UV Ox advanced oxidation treatment unit is designed to remove 1,4-dioxane and most VOCs in groundwater. The carbon adsorption units provide a polish following the UV Ox treatment and remove possible low-level VOCs remaining in groundwater post UV Ox (principally low-level ethanes). The UV Ox advanced oxidation and carbon adsorption treatment units effectively removed VOCs and 1,4-dioxane from extracted groundwater in the third quarter of 2022. The samples collected from the effluent of the UV Ox treatment unit (Post-UV-Ox), carbon breakthrough, and carbon effluent were analyzed for VOCs and 1,4-dioxane. Results indicated non-detect values for 1,4-dioxane and VOCs. Estimated concentrations of 1,1-dichloroethane, trichlorofluoromethane, chloroform, and chloromethane were detected above the method detection limit but below the reporting limit from select samples collected from the Post-UV-OX, carbon breakthrough, and carbon effluent during the third quarter of 2022, and results were qualified by the laboratory with "J" qualifiers (Table 6; Appendix B).

The pilot GETS continues to remove VOCs and 1,4-dioxane from extracted groundwater. During the third quarter of 2022, the pilot GETS removed approximately 2.3 pounds of VOCs and 1.0 pounds of 1,4-dioxane from extracted groundwater. Since startup of the pilot GETS in July 2008, approximately 198 pounds of VOCs and 56 pounds of 1,4-dioxane have been removed from groundwater through August 2022 (Figure 7). Operation of

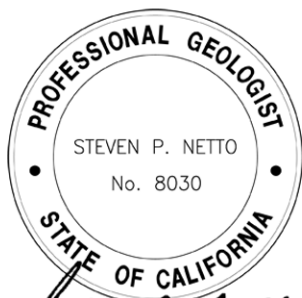
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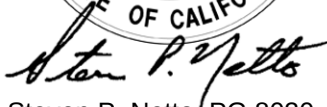
the pilot GETS continues to be optimized to maximize the treatment of 1,4-dioxane and VOCs in extracted groundwater.

If you have any questions or require additional information, please contact us at 858-455-6500.

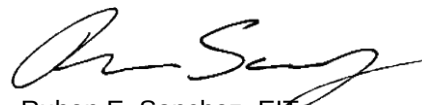
Sincerely,

HARGIS + ASSOCIATES, INC.




Steven P. Netto, PG 8030, CHG 872
Senior Hydrogeologist


Andrew M. Donnelly
Hydrogeologist


Ruben E. Sanchez, EIT
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Enclosures

Tables	Table 1: Groundwater Monitoring Program Table 2: Groundwater Levels, Third Quarter 2022 Table 3: Prevalent Volatile Organic Compounds and 1,4-Dioxane in Groundwater, Third Quarter 2022 Table 4: Pilot Groundwater Extraction and Treatment System Operational Summary Table 5: Pilot Groundwater Extraction and Treatment System Sampling Schedule Table 6: Select Compounds Monitored in Pilot Groundwater Extraction and Treatment System Samples
Figures	Figure 1: Site Location Figure 2: Well and Piezometer Locations Figure 3: Water Level and Water Quality, Unit B, August 2022 Figure 4: Pilot Groundwater Extraction and Treatment System Operation and Extraction Well Water Levels Figure 5: 1,1-Dichloroethylene and 1,4-Dioxane Concentrations in Extraction Wells Figure 6: 1,4-Dioxane and Bromate in Influent and Post-Oxidation Samples Figure 7: Pilot Groundwater Extraction and Treatment System Mass Removal
Appendices	Appendix A: Groundwater Sampling Field Forms (provided on CD in hard copy) Appendix B: Laboratory Analytical Reports (provided on CD in hard copy)

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cc w/encl: 1 copy w-CD
Mr. Paul Pongetti, Department of Toxic Substances Control, Cypress
Mr. Dave Mark, Orange County Water District

2 copies w-CDs
Ms. Delaney Felix, City of Fullerton

Via Email Notification (CD Provided Upon Request)
Mr. Jon Hone, Raytheon Company
Mr. Danny Samorano, Raytheon Company
Mr. Roy Herndon, Orange County Water District
Ms. Kim Buss, Orange County Public Works
Ms. Yvette Hanna, City of Fullerton
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Mr. Paul Rodolf, Hydraflow
Mr. Robinson Sioson, Hydraflow
Mr. Chris Ross, Engineering Analytics, Inc.

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REFERENCES

- California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), 2003. Letter from A. Plaza to P. Brewer, Raytheon Systems Company, re: Review of Additional Groundwater Assessment Workplan and Groundwater Monitoring Workplan and Sampling and Analysis Plan. May 20, 2003.
- _____, 2011. Email from W. Jeffers to C. Ross, S. Netto, P. Brewer, G. Taylor, re: Conditional Approval of Addendum No. 1 to the Ground Water Monitoring Work Plan, Raytheon Fullerton. June 7, 2011.
- _____, 2013. Email from W. Jeffers to C. Ross and S. Netto, re: Groundwater Extraction and Treatment System Pilot Testing Corrective Measures Study Workplan, Addendum #6. April 16, 2013.
- Hargis + Associates, Inc. (H+A), 2003. Groundwater Monitoring Work Plan and Sampling and Analysis Plan (Revision 1.0), Raytheon Company (former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. April 25, 2003.
- _____, 2011a. Letter from C. Ross and S. Netto to W. Jeffers, DTSC, re: Addendum No. 1 to the *Groundwater Monitoring Work Plan and Sampling and Analysis Plan (Revision 1.0)*, by Hargis + Associates, Inc., dated April 25, 2003, for the Raytheon Company, (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. February 11, 2011.
- _____, 2011b. Letter from S. Netto and K. Simon to W. Jeffers, DTSC, re: Amendment A, Addendum No. 1 to the *Groundwater Monitoring Work Plan and Sampling and Analysis Plan (Revision 1.0)*, by Hargis + Associates, Inc., dated April 25, 2003, for the Raytheon Company, (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. June 16, 2011.
- _____, 2013. Groundwater Extraction and Treatment System Pilot Testing, Corrective Measures Study Workplan Addendum No. 6, Raytheon Company (former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. February 27, 2013.
- _____, 2017. Letter from S. Netto and T. Evans to S. Rounds, DTSC, re: Addendum No. 2 to the *Groundwater Monitoring Work Plan and Sampling and Analysis Plan (Revision 1.0)*, by Hargis + Associates, Inc., dated April 25, 2003, for the Raytheon Company, (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. October 6, 2017.

TABLES

TABLE 1
GROUNDWATER MONITORING PROGRAM

WELL IDENTIFIER	HYDROGEOLOGIC ZONE	SAMPLED AUG 2022	SAMPLING FREQUENCY			
			QUARTERLY	SEMIANNUAL	ANNUAL	BIENNIAL
			FEB, MAY, AUG, NOV	FEBRUARY, AUGUST	FEBRUARY	FEB (EVEN YEARS)
P-07	Perched				VOCs; 1,4-Dioxane	
P-09	Perched				VOCs; 1,4-Dioxane	
MW-35A	Other					VOCs; 1,4-Dioxane
MW-17	A		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-18	A	✗		VOCs; 1,4-Dioxane		
MW-19	A					VOCs
MW-22	A					VOCs; 1,4-Dioxane
MW-23	A					VOCs
MW-34A	A	✗		VOCs; 1,4-Dioxane		
MW-35B	A					VOCs; 1,4-Dioxane
MW-38	A				VOCs; 1,4-Dioxane	
MW-13	AB				VOCs; 1,4-Dioxane	
MW-15	AB	✗		VOCs		
MW-26A	AB		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-26B	AB		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-32A	AB	✗		VOCs; 1,4-Dioxane		
EW-01	B	✗	VOCs; 1,4-Dioxane			
EW-02*	B	✗	VOCs; 1,4-Dioxane			
MW-16	B	✗		VOCs; 1,4-Dioxane		
MW-26C	B	✗	VOCs; 1,4-Dioxane			
MW-27	B				VOCs; 1,4-Dioxane	
MW-28	B	✗	VOCs; 1,4-Dioxane			
MW-29*	B	✗	VOCs; 1,4-Dioxane			
MW-30A	B	✗	VOCs; 1,4-Dioxane			
MW-31	B	✗	VOCs; 1,4-Dioxane			
MW-32B	B	✗	VOCs; 1,4-Dioxane			
MW-33	B	✗	VOCs; 1,4-Dioxane			
MW-34B	B	✗	VOCs; 1,4-Dioxane			
MW-35C	B	✗	VOCs; 1,4-Dioxane			
MW-36	B	✗	VOCs; 1,4-Dioxane			
MW-39	B	✗	VOCs; 1,4-Dioxane			
MW-40	B	✗	VOCs; 1,4-Dioxane			
MW-41	B	✗	VOCs; 1,4-Dioxane			
MW-42	B	✗	VOCs; 1,4-Dioxane			
MW-43	B	✗	VOCs; 1,4-Dioxane			
MW-21	BC	✗	VOCs; 1,4-Dioxane			
MW-08	BC	✗	VOCs; 1,4-Dioxane			
MW-30B	BC	✗	VOCs; 1,4-Dioxane			
MW-34C	BC	✗		VOCs; 1,4-Dioxane		
MW-09	C	✗		VOCs; 1,4-Dioxane		
MW-24	C				VOCs; 1,4-Dioxane	
MW-32C	C	✗		VOCs; 1,4-Dioxane		
MW-06	D				VOCs	
MW-20	D	✗		VOCs; 1,4-Dioxane		
MW-25	D		WATER LEVEL MEASUREMENT ONLY			
MW-37	D				VOCs; 1,4-Dioxane	

FOOTNOTES:

* = Extraction well monitored monthly as part of the Groundwater Extraction and Treatment System Pilot Testing

VOCs = volatile organic compounds

TABLE 2
GROUNDWATER LEVELS
THIRD QUARTER 2022

Well Identifier	Date Measured	Reference Point Elevation ^(a) (feet msl)	Depth to Water (feet btoc)	Water Level Elevation (feet msl)	Remediation System On
<u>Regional Groundwater System Monitor and Extraction Wells</u>					
MW-06	08/01/22	184.70	156.30	28.40	
MW-08	08/01/22	155.91	133.64	22.27	
MW-09	08/01/22	180.10	154.76	25.34	
MW-13	08/01/22	141.84	126.56	15.28	
MW-15	08/01/22	144.95	130.68	14.27	
MW-16	08/01/22	142.40	127.47	14.93	
MW-17	08/01/22	142.70	129.56	13.14	
MW-18	08/01/22	142.32	130.07	12.25	
MW-19	08/01/22	142.06	129.68	12.38	
MW-20	08/01/22	184.19	150.79	33.40	
MW-21	08/01/22	141.18	118.43	22.75	
MW-22	08/01/22	138.65	126.31	12.34	
MW-23	08/01/22	137.33	126.50	10.83	
MW-24	08/01/22	142.83	117.86	24.97	
MW-25	08/01/22	142.64	117.98	24.66	
MW-26A	08/01/22	137.04	121.65	15.39	
MW-26B	08/01/22	137.05	122.43	14.62	
MW-26C	08/01/22	137.22	123.59	13.63	
MW-27	08/01/22	137.16	123.12	14.04	
MW-28	08/01/22	140.77	127.24	13.53	
MW-29	06/02/22	139.81	181.29	-41.48	Pilot GETS
MW-29	06/23/22	139.81	175.79	-35.98	Pilot GETS
MW-29	07/07/22	139.81	181.50	-41.69	Pilot GETS
MW-29	07/21/22	139.81	172.37	-32.56	Pilot GETS
MW-29	08/01/22	139.81	173.61	-33.80	Pilot GETS
MW-29	08/11/22	139.81	182.31	-42.50	Pilot GETS
MW-30A	08/01/22	129.44	116.91	12.53	
MW-30B	08/01/22	129.39	114.20	15.19	
MW-31	08/01/22	119.60	106.35	13.25	
MW-32A	08/01/22	92.88	81.89	10.99	
MW-32B	08/01/22	92.89	80.88	12.01	

TABLE 2
GROUNDWATER LEVELS
THIRD QUARTER 2022

Well Identifier	Date Measured	Reference Point Elevation ^(a) (feet msl)	Depth to Water (feet btoc)	Water Level Elevation (feet msl)	Remediation System On
<u>Reginal Groundwater System Monitor and Extraction Wells (continued)</u>					
MW-32C	08/01/22	92.88	71.41	21.47	
MW-33	08/01/22	83.19	73.18	10.01	
MW-34A	08/01/22	153.25	147.69	5.56	
MW-34B	08/01/22	153.11	141.02	12.09	
MW-34C	08/01/22	153.29	140.34	12.95	
MW-35A	08/01/22	93.57	91.28	2.29	
MW-35B	08/01/22	93.56	86.81	6.75	
MW-35C	08/01/22	93.55	82.58	10.97	
MW-36	08/01/22	86.65	77.19	9.46	
MW-37	08/01/22	155.60	135.95	19.65	
MW-38	08/01/22	154.90	151.58	3.32	
MW-39	08/01/22	84.25	75.22	9.03	
MW-40	08/01/22	123.40	108.52	14.88	
MW-41	08/01/22	155.60	143.80	11.80	
MW-42	08/01/22	82.80	74.06	8.74	
MW-43	08/01/22	76.64	68.33	8.31	
EW-01	08/01/22	141.07	125.91	15.16	
EW-02	06/02/22	132.97	119.68	13.29	Pilot GETS
EW-02	06/23/22	132.97	120.68	12.29	Pilot GETS
EW-02	07/07/22	132.97	122.02	10.95	Pilot GETS
EW-02	07/21/22	132.97	123.41	9.56	Pilot GETS
EW-02	08/01/22	132.97	123.74	9.23	Pilot GETS
EW-02	08/11/22	132.97	124.46	8.51	Pilot GETS
<u>Perched Zone Water Levels</u>					
P-07	08/01/22	142.31	112.38	29.93	
P-09	08/01/22	183.86	120.90	62.96	

FOOTNOTES:

^(a) Reference point elevations are relative to City of Fullerton datum.

btoc = Below top of casing

msl = Mean sea level

Pilot GETS = Pilot Groundwater Extraction and Treatment System On

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2022

Concentration (micrograms per liter)																
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)																Semi-VOCs
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (--/5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (--/150)	Toluene (1,000/150)	1,4-Dioxane (3*/1**)
Regional Groundwater System Monitor and Extraction Wells																
MW-08	08/03/22	ORG	< 0.50	< 0.50	< 0.50	0.18 J	< 0.50	24	2.3	< 0.50	< 0.50	< 0.50	40	< 0.50	< 0.50	1.3
MW-08 Historical Range***			< 0.50 - 0.95	< 0.50	< 0.50 - 0.86	< 0.50 - 5.1	< 0.50 - 0.99	< 0.50 - 500	< 0.50 - 13	< 0.50 - 2.6	< 0.50	< 0.50	< 0.50 - 480	< 0.50 - 1.0	< 0.50 - 2.3	< 0.20 - 130
MW-09 ⁽¹⁾	08/03/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.36 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-09 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 0.79	< 0.50	< 0.50 - 32	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.96	< 0.50 - 5.3	< 0.50	< 0.20 - 52 E
MW-15	08/03/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.36 J	< 0.50	< 0.50	< 0.50	< 0.50	2.3	6.9	< 0.50	NA
MW-15 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.22 J	< 0.50	< 0.50	< 0.50 - 14	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 7.8	< 0.50 - 20	< 0.50	< 0.50
MW-16	08/03/22	ORG	< 0.50	0.52	< 0.50	8.1	0.79	1,600	0.53	1.5	< 0.50	1.1	7.5	< 0.50	< 0.50	82
MW-16 Historical Range***			< 0.50	< 0.50 - 0.58	< 0.50 - 1.1	< 0.50 - 18	< 0.50 - 4.5	49 - 1,900	< 0.50 - 0.57	< 0.50 - 2.9	< 0.50 - 28 E	< 0.50 - 10	< 0.50 - 7.8	< 0.50	< 0.50	< 2.0 - 440
MW-18 ⁽²⁾	08/04/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	< 0.50	< 0.20
MW-18 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.51	< 0.50 - 1.2	< 0.50 - 0.12 J	< 0.50	< 0.50	< 0.50	< 0.50 - 6.3	< 0.50 - 0.82	< 0.20 - 7.7 E
MW-20	08/04/22	ORG	< 0.50	< 0.50	0.58	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-20 Historical Range***			< 0.50	< 0.50	< 0.50 - 1.8	< 0.50	< 0.50	< 0.50 - 82	< 0.50	< 0.50 - 0.14 J	< 0.50 - 0.63	< 0.50	< 0.50	< 0.50 - 0.58	< 0.50 - 0.22 J	< 0.20 - 3.9
MW-21	08/03/22	ORG	< 0.50	0.52	0.86	28	5.0	1,900	1.9	4.9	< 0.50	15	18	0.34 J	< 0.50	590
MW-21 Historical Range***			< 0.50	< 0.50 - 1.9	< 0.50 - 4.6	< 0.50 - 71	< 0.50 - 8.9	200 - 4,900	< 0.50 - 2.4	< 0.50 - 12	< 0.50 - 2.0	< 0.50 - 27	0.96 - 46	< 0.50 - 0.53	< 0.50	11 - 1,100
MW-26C ⁽³⁾	08/03/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-26C Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.7	< 0.50	< 0.50 - 120	< 0.50	< 0.50 - 0.79	< 0.50	< 0.50 - 0.77	< 0.50	< 0.50	< 0.50 - 22	< 0.20 - 57
MW-28 ⁽⁴⁾	08/04/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-28 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.20 J	< 0.50 - 0.94	< 0.50	< 0.50 - 76 E	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 19
MW-29	06/02/22	ORG	< 0.50	< 0.50	< 0.50	1.2	< 0.50	150	< 0.50	< 0.50	< 0.50	< 0.50	0.96	0.67	< 0.50	70
MW-29 ⁽⁵⁾	06/23/22	ORG	< 0.50	< 0.50	0.26 J	1.6	< 0.50	190	< 0.50	0.48 J	< 0.50	0.46 J	1.8	0.76	< 0.50	66
MW-29	07/07/22	ORG	< 0.50	< 0.50	< 0.50	1.8	< 0.50	230	< 0.50	< 0.50	< 0.50	< 0.50	1.9	0.99	< 0.50	80
MW-29	07/21/22	ORG	< 0.50	< 0.50	0.32 J	1.9	< 0.50	270	< 0.50	0.33 J	< 0.50	0.53	2.0	0.98	< 0.50	80
MW-29	08/11/22	ORG	< 0.50	< 0.50	< 0.50	1.8	< 0.50	220	< 0.50	0.64	< 0.50	0.62	2.0	0.71	< 0.50	95 E
MW-29 Historical Range***			< 0.50 - 0.57	< 0.50 - 1.8	< 0.50 - 0.80	< 0.50 - 9.2	< 0.50 - 1.4	85 - 900 E	< 0.50 - 0.61	< 0.50 - 6.6	< 0.50	< 0.50 - 2.3	< 0.50 - 8.3	< 0.50 - 2.2	< 0.50	26 BE - 301
MW-30A	08/05/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-30A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 2.9	< 0.50 - 0.67	< 0.50 - 270	< 0.50	< 0.50 - 0.58	< 0.50	< 0.50 - 1.1	< 0.50 - 1.9	< 0.50	< 0.50	< 0.20 - 95
MW-30B ⁽⁶⁾	08/05/22	ORG	< 0.50	< 0.50	< 0.50	0.13 J	0.21 J	28	5.7	< 0.50	< 0.50	< 0.50	94	< 0.50	< 0.50	0.93
Historical High/Low							High									
MW-30B Historical Range***			< 0.50	< 0.50	< 0.50 - 0.77	< 0.50 - 0.15 J	< 0.50	< 0.50 - 31 E	< 0.50 - 8.2	< 0.50 - 0.51	< 0.50	< 0.50	< 0.50 - 110	< 0.50	< 0.50 - 4.5	< 0.20 - 28 E

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2022

Concentration (micrograms per liter)																
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)																Semi-VOCs
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (~5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (~150)	Toluene (1,000/150)	1,4-Dioxane (3*/1**)
Regional Groundwater System Monitor and Extraction Wells (cont'd)																
MW-31	08/05/22	ORG	< 0.50	< 0.50	< 0.50	2.3	< 0.50	270	0.92	0.62	< 0.50	0.45 J	14	< 0.50	< 0.50	16
MW-31 Historical Range***			< 0.50	< 0.50 - 0.23 J	< 0.50 - 0.58	< 0.50 - 5.0	< 0.50 - 0.51	25 - 430	< 0.50 - 3.0 E	< 0.50 - 2.5	< 0.50	< 0.50 - 1.2	0.50 - 21	< 0.50	< 0.50 - 1.0	< 0.20 - 33 E
MW-32A	08/03/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 E
MW-32A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 1.6
MW-32B	08/03/22	ORG	< 0.50	< 0.50	< 0.50	0.46 J	< 0.50	61	1.7	< 0.50	< 0.50	< 0.50	16	< 0.50	< 0.50	1.8
MW-32B Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 3.6	< 0.50	16 - 290	1.4 - 7.9	< 0.50	< 0.50	< 0.50	13 - 75	< 0.50	< 0.50 - 0.14 J	< 2.0 - 8.0
MW-32C	08/03/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 E
MW-32C Historical Range***			< 0.50	< 0.50	< 0.50 - 0.24 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.56	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 1.0
MW-33	08/02/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.3	< 0.50	< 0.50	< 0.50	< 0.50	0.46 J	< 0.50	< 0.50	< 0.20
MW-3300	08/02/22	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.7	< 0.50	< 0.50	< 0.50	< 0.50	0.63	< 0.50	< 0.50	< 0.20
MW-33	08/02/22	SPT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.1	< 0.50	< 0.50	< 0.50	< 0.50	0.76	< 0.50	< 0.50	< 0.50
MW-33 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 12	< 0.50	< 0.50 - 0.32 J	< 0.50	< 0.50	< 0.50 - 2.0	< 0.50	< 0.50 - 1.4	< 0.20 - 0.22
MW-34A	08/04/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.40 J	< 0.50	< 0.20 E
MW-34A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 2.3	< 0.50 - 2.8	< 0.20
MW-34B	08/04/22	ORG	< 0.50	< 0.50	< 0.50	0.73	< 0.50	71	< 0.50	< 0.50	< 0.50	< 0.50	0.23 J	< 0.50	< 0.50	7.1
MW-34B Historical Range***			< 0.50	< 0.50	< 0.50 - 0.50	< 0.50 - 9.8	< 0.50 - 1.7	20 E - 1,100	< 0.50	< 0.50 - 0.54	< 0.50	< 0.50 - 2.6	< 0.50 - 2.1	< 0.50	< 0.50 - 2.6	< 2.0 E - 260
MW-34C ⁽⁷⁾	08/02/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-34C Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.33 J, E	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 9.6	< 0.20 - 0.39
MW-35C	08/02/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-35C Historical Range***			< 0.50	< 0.50	< 0.50 - 120	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 0.06 J
MW-36	08/04/22	ORG	< 0.50	< 0.50	< 0.50	0.85	< 0.50	99	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.2
MW-3600	08/04/22	FD	< 0.50	< 0.50	< 0.50	0.87	< 0.50	97	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	7.7
MW-36	08/04/22	SPT	< 0.50	< 0.50	< 0.50	0.75	< 0.50	75	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.8
MW-36 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.15 J	< 0.50 - 1.9	< 0.50	2.9 - 220	< 0.50	< 0.50	< 0.50	< 0.50 - 0.24 J	< 0.50 - 0.26 J	< 0.50	< 0.50 - 5.9	< 0.20 - 15
MW-39 ⁽⁸⁾	08/04/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 E
MW-39 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 1.4	< 0.20
MW-40	08/05/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-40 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.29 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 0.61

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2022

.....Concentration (micrograms per liter).....																
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)																Semi-VOCs
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (--/5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (--/150)	Toluene (1,000/150)	1,4-Dioxane (3*/1**)
<u>Regional Groundwater System Monitor and Extraction Wells (cont'd)</u>																
MW-41 ⁽⁹⁾	08/04/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.58	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-41 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.86	< 0.50 - 1.3	< 0.50	< 0.50 - 130	< 0.50	< 0.50 - 0.20 J	< 0.50	< 0.50 - 0.39 J	< 0.50 - 0.49 J	< 0.50	< 0.50	< 0.20 - 18
MW-42	08/03/22	ORG	< 0.50	< 0.50	< 0.50	0.76	< 0.50	52	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.1 E
Historical High/Low						High										
MW-42 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 0.74 J, E	< 0.50	0.41 J - 53	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 2.5
MW-43	08/05/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-43 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
EW-01 ⁽¹⁰⁾	08/03/22	ORG	< 0.50	< 0.50	< 0.50	0.81	< 0.50	55 E	< 0.50	0.20 J	< 0.50	0.32 J	0.11 J	< 0.50	< 0.50	33
EW-0100 ⁽¹¹⁾	08/03/22	FD	< 0.50	< 0.50	< 0.50	0.77	< 0.50	58 E	< 0.50	0.20 J	< 0.50	0.13 J	0.13 J	< 0.50	< 0.50	30
EW-01	08/03/22	SPT	< 0.50	< 0.50	< 0.50	0.72	< 0.50	28 E	< 0.50	< 0.50	< 0.50	0.24 J	0.18 J	< 0.50	< 0.50	31
EW-01 Historical Range***			< 0.50 - 2.0	< 0.50 - 0.53	< 0.50 - 1.2	< 0.50 - 16	< 0.50 - 4.0	< 0.50 - 1,600 E	< 0.50 - 0.52	< 0.50 - 4.3	< 0.50	< 0.50 - 10	< 0.50 - 3.3	< 0.50 - 0.61	< 0.50 - 4.6	< 2.0 - 990 E
EW-02	06/02/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	11	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
EW-02	06/23/22	ORG	< 0.50	< 0.50	0.13 J	0.13 J	< 0.50	16	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.3
EW-02	07/07/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.9
EW-02	07/21/22	ORG	< 0.50	< 0.50	0.13 J	0.17 J	< 0.50	21	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.5
EW-02	08/11/22	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	16	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.3 E
EW-02 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.5	< 0.50	2.3 - 160	< 0.50	< 0.50	< 0.50	< 0.50 - 0.59	< 0.50	< 0.50	< 0.50 - 0.85	< 2.0 - 48
<u>QUALITY ASSURANCE/QUALITY CONTROL SAMPLES</u>																
TB-060222	06/02/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-062322	06/23/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-070722	07/07/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-072122	07/21/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-080222A	08/02/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-080222B	08/02/22	TB-SPT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
RB-080322	08/03/22	RB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.14 J	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-080422A	08/04/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-080422B ⁽¹²⁾	08/04/22	TB-SPT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
RB-080422	08/04/22	RB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-080522	08/05/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-081122	08/11/22	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2022

.....Concentration (micrograms per liter).....																
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)															Semi-VOCs	
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (--/5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (--/150)	Toluene (1,000/150)	1,4-Dioxane (3*/1**)

NOTE: Detections are shown in **BOLD** type.

- (1) Chloromethane was detected at a concentration of 0.13 J ug/l in the original sample for monitor well MW-09 on 08/03/22
(2) Chloromethane was detected at a concentration of 0.21 J ug/l in the original sample for monitor well MW-18 on 08/04/22
(3) Chloromethane was detected at a concentration of 0.13 J ug/l in the original sample for monitor well MW-26C on 08/03/22
(4) Chloromethane was detected at a concentration of 0.33 J ug/l in the original sample for monitor well MW-28 on 08/04/22
(5) Chloromethane was detected at a concentration of 0.45 J ug/l in the original sample for extraction well MW-29 on 06/23/22
(6) Trans-1,2-Dichloroethene was detected at a concentration of 0.11 J ug/l in the original sample for monitor well MW-30B on 08/05/22
(7) Chloromethane was detected at a concentration of 0.13 J ug/l in the original sample for monitor well MW-34C on 08/02/22
(8) Chloromethane was detected at a concentration of 0.23 J ug/l in the original sample for monitor well MW-39 on 08/04/22
(9) Chloromethane was detected at a concentration of 0.13 J ug/l in the original sample for monitor well MW-41 on 08/04/22
(10) Chloromethane was detected at a concentration of 0.18 J ug/l in the original sample for monitor well EW-01 on 08/03/22
(11) Chloromethane was detected at a concentration of 0.20 J ug/l in the field duplicate sample for monitor well EW-0100 on 08/03/22
(12) Methylene Chloride was detected at a concentration of 0.65 J ug/l in the split lab QA/QC sample for trip blank TB-080422B on 08/04/22

FOOTNOTES:

1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
1,1,2-TCA = 1,1,2-Trichloroethane

TCE = Trichloroethene
TCFM = Trichlorofluoromethane
(<) = Less than; the value is the Limit of Detection for that compound
* = 1,4-Dioxane Action Level of 3 ug/l
** = California Notification Level for 1,4-Dioxane of 1 ug/l
*** = Historical Range determined using original samples exclusively
Semi-VOCs = Semivolatile organic compounds

NA = Not analyzed for constituent
FD = Field duplicate sample
ORG = Original sample
TB = Trip blank sample
RB = Rinsate blank sample
B = Analyte detected in the associated Method Blank
E = Data qualified as Estimated in accordance with quality control criteria.
J = Estimated Value; analyte detected at less than the Reporting Limit and greater than or equal to the Method Detection Limit

ug/l = Micrograms per liter
MCL = Maximum Contaminant Level
QA = Quality Assurance
SPT = Split sample

TABLE 4
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATIONAL SUMMARY

OPERATIONAL PERIOD (MONTH/QUARTER/YEAR)	WELLFIELD PRODUCTION ^(a) (gallons)	AVERAGE DISCHARGE RATE ^(b) (gpm)	AVERAGE OPERATIONAL DISCHARGE RATE ^(c) (gpm)	OPERATIONAL HOURS DURING OPERATIONAL PERIOD	HOURS IN OPERATIONAL PERIOD	% OPERATIONAL
2008^(d)	3,659,562	13.8	18.2	3,358	4,416	76%
2009	5,787,848	11.0	18.1	5,319	8,760	61%
2010	14,295,261	27.2	46.4	5,131	8,760	59%
2011	20,456,899	38.9	45.8	7,442	8,760	85%
2012^(e)	19,378,122	40.2	47.2	6,850	8,040	85%
2013^(f)	21,148,029	40.2	45.7	7,713	8,760	88%
2014^(g)	7,690,471	14.6	46.8	2,740	8,760	31%
2015^(h)	18,019,312	34.3	47.9	6,275	8,760	72%
2016⁽ⁱ⁾	21,977,404	41.8	44.2	8,284	8,736	95%
2017^(j)	18,364,603	34.6	39.8	7,684	8,835	87%
2018^(k)	18,144,835	34.5	38.3	7,889	8,760	90%
2019^(l)	18,725,398	35.8	40.3	7,737	8,710	89%
2020^(m)	19,500,449	36.9	38.1	8,521	8,807	97%
2021⁽ⁿ⁾	18,500,784	35.3	36.3	8,508	8,739	97%
December 2021	1,246,691	25.4	33.6	618	818	76%
January 2022	1,452,688	34.8	35.2	688	695	99%
February 2022	1,379,965	34.4	35.3	651	669	97%
Q1 2022	4,079,344	31.2	34.7	1,957	2,182	90%
March 2022	1,823,636	36.1	36.2	839	841	100%
April 2022	1,431,910	35.6	39.2	609	670	91%
May 2022	1,415,085	35.0	35.0	674	675	100%
Q2 2022	4,670,631	35.6	36.7	2,121	2,186	97%
June 2022	1,473,369	29.3	34.7	707	838	84%
July 2022	1,714,193	34.0	34.0	841	841	100%
August 2022	1,047,502	34.7	34.8	502	503	100%
Q3 2022	4,235,064	32.4	34.4	2,050	2,182	94%
SINCE INCEPTION	238,634,016	32.0	39.9	99,578	124,152	80%

Notes:

- (a) Based on Effluent totalizer readings from CEFF, which also includes relatively small amounts of monitor well purge water from quarterly sampling events, well installations, and aquifer testing.
- (b) Total volume of water treated during the operational period divided by the total number of minutes in that operational period.
- (c) Total volume of water treated during the operational period divided by the minutes of operation in that operational period.
- (d) Operational period beginning 7/1/2008 (first month of system operation).
- (e) 2012 Calendar year is from 1/1/2012 through 11/30/2012.
- (f) 2013 Calendar year is from 12/1/2012 through 11/30/2013.
- (g) 2014 Calendar year is from 12/1/2013 through 11/30/2014.
- (h) 2015 Calendar year is from 12/1/2014 through 11/30/2015.
- (i) 2016 Calendar year is from 12/1/2015 through 11/30/2016.
- (j) 2017 Calendar year is from 12/1/2016 through 11/30/2017.
- (k) 2018 Calendar year is from 12/1/2017 through 11/30/2018.
- (l) 2019 Calendar year is from 12/1/2018 through 11/30/2019.
- (m) 2020 Calendar year is from 12/1/2019 through 11/30/2020.
- (n) 2021 Calendar year is from 12/1/2020 through 11/30/2021.
- gpm = gallons per minute
- CEFF = Carbon effluent
- Refer to previous quarterly reports for detail of 2008 thru 2020 operational summary
- Treatment of groundwater from EW-02 initiated in 2010
- Treatment of groundwater from MW-29 initiated in 2014

TABLE 5
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLING SCHEDULE

				SAMPLE FREQUENCY AND LOCATION																									
				Daily Samples ¹ : Days 1-5						Weekly Samples ¹ : Weeks 1-4						Monthly Samples: Week 5+						Quarterly Samples: Week 1+							
				System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)		System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)		Extraction Wells (Well ID) ²	System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³		Post-Carbon (CEFF)	Extraction Wells (Well ID) ²	System Influent (INF)	Post-Oxidation (POX)	Post-Carbon (CEFF)			
COMPOUND(S) / CONSITITUENT	ANALYTICAL METHOD	SAMPLE CONTAINER	REPORTING DETECTION LIMITS (milligrams per liter)																										
COMPOUNDS/CONSTITUENTS NORMALLY REQUIRED AS PART OF NPDES OR WDR PERMITS, PURSUANT TO CRWQCB REGION 8 ORDER NO. R8-2003-0085																													
Volatile Organic Compounds	EPA 8260B	3 - 40 mL VOA, HCl	QAPP ⁴	X		X	X	X		X		X	X	X		X	X		X	X	X								
1,4-Dioxane	EPA 8270 Modified	1 L Amber	0.002	X						X						X	X												
1,4-Dioxane	EPA 8270 SIM	1 L Amber	0.0002			X						X							X	X	X								
Total Suspended Solids	SM2540D	1 L Poly	10															X											
Total Dissolved Solids	SM2540C	1 L Poly	10																							X	X	X	X
SELECTED METALS																													
Dissolved Metals (Iron, Manganese, Calcium, Sodium, Magnesium)	EPA 6010B	250 mL poly	QAPP ⁴	(a)																					X	X			
Selenium	EPA 6010B	250 mL poly	QAPP ⁴																						X	X			
SELECTED INORGANIC CONSTITUENTS																													
Hydroxide Alkalinity	SM2320B	1 L Poly	2.0	(a)														X	X						X	X			
Bicarbonate Alkalinity	SM2320B	1 L Poly	2.0	(a)														X	X						X	X			
Carbonate Alkalinity	SM2320B	1 L Poly	2.0	(a)														X	X						X	X			
Total Alkalinity	SM2320B	1 L Poly	2.0	(a)														X	X						X	X			
BROMATE EVALUATION																													
Bromate	EPA 317.0	125 mL Poly	0.0005			X						X					X	X		X									
Bromide	EPA 300.0	125 mL Poly	0.05	(a)						(a)							X	X											
OTHER CONSTITUENTS/COMPOUNDS																													
Total Organic Carbon	SM5310B	2 - 40 mL VOA, H2SO4	3.0	(a)														X	X						X	X			
Anions (Chloride, Sulfate, Nitrate, Nitrite, and Phosphate)	EPA 300.0	1 L Poly	Varies	(a)																					X	X	X		
Chemical Oxygen Demand	EPA 410.4	125 mL Amber, H2SO4	5.0	(a)																					X	X	X		
UV Absorption (UVA) @254nm	EPA 415.3	125 mL Amber/ 8 oz Jar	N/A		(a)													X							X	X	X		
Field Parameters																													
Dissolve Oxygen (DO)	N/A	N/A	N/A	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X								
Electrical Conductance (EC)	N/A	N/A	N/A	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X								
Redox Potential	N/A	N/A	N/A	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X								
Temperature	N/A	N/A	N/A	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X								
pH	N/A	N/A	N/A	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X								
Turbidity	N/A	N/A	N/A	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X								
Flow-Meter	N/A	N/A	N/A	X						X				X		X	X				X								
Residual Hydrogen Peroxide	N/A	N/A	N/A			(a)	(a)	(a)				X	X	X					X	X	X								

TABLE 5
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLING SCHEDULE

COMPOUND(S) / CONSTITUENT	ANALYTICAL METHOD	SAMPLE CONTAINER	REPORTING DETECTION LIMITS (milligrams per liter)	SAMPLE FREQUENCY AND LOCATION																						
				Daily Samples ¹ : Days 1-5						Weekly Samples ¹ : Weeks 1-4						Monthly Samples: Week 5+						Quarterly Samples: Week 1+				
				System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)		System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)		Extraction Wells (Well ID) ²	System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³		Post-Carbon (CEFF)	Extraction Wells (Well ID) ²	System Influent (INF)	Post-Oxidation (POX)	Post-Carbon (CEFF)

FOOTNOTES:

(a) Only one sample to be collected during sampling period.

¹ Daily and weekly samples collected during the first month of operation will be repeated after major modifications to system equipment or operating parameters, as detailed in the Workplan.

² If more than one extraction well is in operation, combined influent samples will be collected in addition to extraction wellhead samples, with the same sampling schedule as the extraction wellheads.

³ Carbon breakthrough will be collected from the effluent of the first carbon unit in series; when breakthrough of the first unit is detected, the breakthrough sample will be collected from the effluent of the second carbon unit in series.

⁴ QAPP, Quality Assurance Project Plan, Appendix B of Additional Groundwater Assessment Workplan, Hargis + Associates, Inc., April 25, 2003.

CRWQCB = California Regional Water Quality Control Board, Santa Ana Region 8

NPDES = National Pollutant Discharge Elimination System

WDR = Waste Discharge Requirement

N/A = Not applicable

mL = Milliliter

VOA = Volatile organic analysis

HCl = Hydrochloric acid

H₂SO₄ = Sulfuric acid

nm = Nanometers

EPA = U.S. Environmental Protection Agency

SIM = Selected ion monitoring

SM = Standard Method

L = Liter

poly = High density polyethylene bottle

Amber = Amber glass bottle

TABLE 6
SELECT COMPOUNDS MONITORED IN
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLES

Compound	Date	Units	MW-21 ^(a)	MW-29	EW-01 ^(a)	EW-02	INF	PF	POX	CBT	CEFF
1,1,2-Trichloroethane (5 ug/L MCL)	06/02/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	06/23/22	ug/L	--	0.46 J	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/07/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/21/22	ug/L	--	0.53	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	08/03/22	ug/L	15	--	0.32 J	--	--	--	--	--	--
	08/11/22	ug/L	--	0.62	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
1,1-Dichloroethane (5 ug/L MCL)	06/02/22	ug/L	--	1.2	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	06/23/22	ug/L	--	1.6	--	0.13 J	0.51	--	0.35 J	0.27 J	0.26 J
	07/07/22	ug/L	--	1.8	--	<0.50	0.58	--	<0.50	<0.50	<0.50
	07/21/22	ug/L	--	1.9	--	0.17 J	0.63	--	0.40 J	0.36 J	0.27 J
	08/03/22	ug/L	28	--	0.81	--	--	--	--	--	--
	08/11/22	ug/L	--	1.8	--	<0.50	0.64	--	<0.50	<0.50	<0.50
1,1-Dichloroethene (6 ug/L MCL)	06/02/22	ug/L	--	150	--	11	46	--	<0.50	<0.50	<0.50
	06/23/22	ug/L	--	190	--	16	57	--	<0.50	<0.50	<0.50
	07/07/22	ug/L	--	230	--	20	73	--	<0.50	<0.50	<0.50
	07/21/22	ug/L	--	270	--	21	77	--	<0.50	<0.50	<0.50
	08/03/22	ug/L	1,900	--	55 E	--	--	--	--	--	--
	08/11/22	ug/L	--	220	--	16	69	--	<0.50	<0.50	<0.50
1,2-Dichloroethane (0.5 ug/L MCL)	06/02/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	06/23/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/07/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/21/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	08/03/22	ug/L	5.0	--	<0.50	--	--	--	--	--	--
	08/11/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene (6 ug/L MCL)	06/02/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	06/23/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/07/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/21/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	08/03/22	ug/L	1.9	--	<0.50	--	--	--	--	--	--
	08/11/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
Tetrachloroethene (5 ug/L MCL)	06/02/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	06/23/22	ug/L	--	0.48 J	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/07/22	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	07/21/22	ug/L	--	0.33 J	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	08/03/22	ug/L	4.9	--	0.20 J	--	--	--	--	--	--
	08/11/22	ug/L	--	0.64	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
Trichloroethene (5 ug/L MCL)	06/02/22	ug/L	--	0.96	--	<0.50	0.52	--	<0.50	<0.50	<0.50
	06/23/22	ug/L	--	1.8	--	<0.50	0.58	--	<0.50	<0.50	<0.50
	07/07/22	ug/L	--	1.9	--	<0.50	0.54	--	<0.50	<0.50	<0.50
	07/21/22	ug/L	--	2.0	--	<0.50	0.59	--	<0.50	<0.50	<0.50
	08/03/22	ug/L	18	--	0.11 J	--	--	--	--	--	--
	08/11/22	ug/L	--	2.0	--	<0.50	0.69	--	<0.50	<0.50	<0.50
1,4-Dioxane (1 ug/L California Notification Level)	06/02/22	ug/L	--	70	--	<2.0	21	--	<0.20	<0.20	<0.20
	06/23/22	ug/L	--	66	--	4.3	24	--	<0.20	<0.20	<0.20
	07/07/22	ug/L	--	80	--	3.9	23	--	<0.20	<0.20	<0.20
	07/21/22	ug/L	--	80	--	5.5	25	--	<0.20	<0.20	<0.20
	08/03/22	ug/L	590	--	33	--	--	--	--	--	--
	08/11/22	ug/L	--	95 E	--	4.3 E	35 E	--	<0.20	<0.20	<0.20
Bromide	06/02/22	mg/L	--	0.39	--	0.21	0.29	--	--	--	--
	07/07/22	mg/L	--	0.41	--	0.24	0.28	--	--	--	--
	08/11/22	mg/L	--	0.47	--	0.25	0.30	--	--	--	--
Bromate (10 ug/L MCL)	06/02/22	ug/L	--	--	--	--	<25.0	--	<25.0	--	--
	07/07/22	ug/L	--	--	--	--	<25.0	--	<25.0	--	--
	08/11/22	ug/L	--	--	--	--	<25.0	--	<25.0	--	--
Total Suspended Solids	06/02/22	mg/L	--	--	--	--	--	<10	--	--	--
	07/07/22	mg/L	--	--	--	--	--	<10	--	--	--
	08/11/22	mg/L	--	--	--	--	--	<1.0	--	--	--
Total Dissolved Solids (500 mg/L MCL)	06/30/22	mg/L	--	800	--	1,300	630	--	680	--	650

TABLE 6
SELECT COMPOUNDS MONITORED IN
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLES

Compound	Date	Units	MW-21 ^(a)	MW-29	EW-01 ^(a)	EW-02	INF	PF	POX	CBT	CEFF

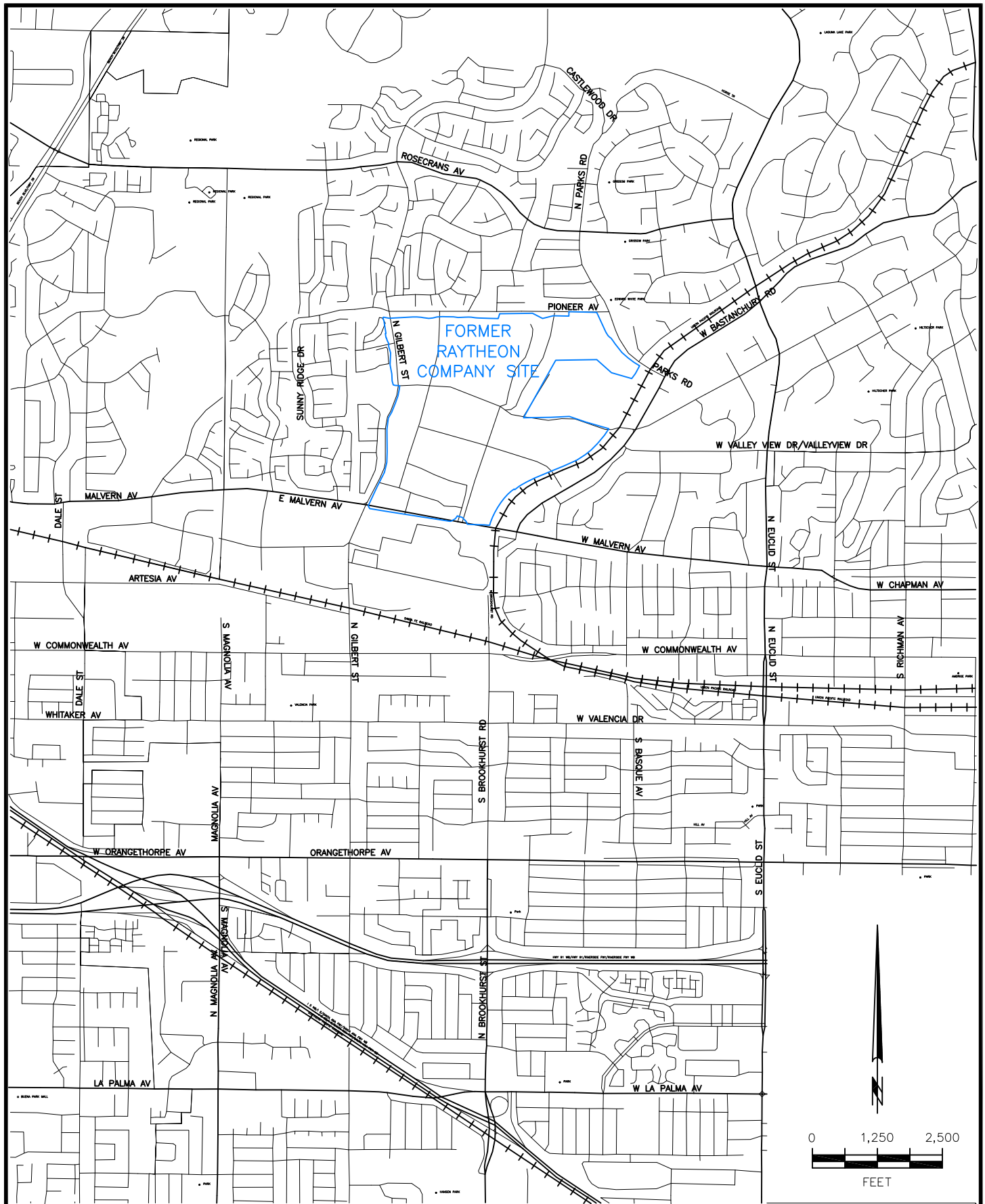
NOTE: Detections are shown in **BOLD** type.

FOOTNOTES:

- ^(a) = inactive extraction wells; extraction wells MW-21 and EW-01 operated routinely from July 2008 to November 2009
- MCL = Drinking Water Maximum Contaminant Level
- ug/L = Micrograms per liter
- mg/L = Milligrams per liter
- (--)= Not scheduled for performance monitoring
- (<) = Less than; the numerical value is the Limit of Detection for that compound
- MW = Monitor Well(s)
- EW = Extraction Well(s)
- INF = Influent; combined flow from active extraction wells
- PF = Post Particulate Filter
- POX = Post Advanced Oxidation
- CBT = Carbon Breakthrough
- CEFF = Carbon Effluent
- E = Data qualified as Estimated in accordance with quality control criteria.
- J = Estimated Value; analyte detected at less than the Reporting Limit and greater than or equal to the Method Detection Limit

FIGURES

May 11, 2011 - 10:09am ADE - T: \2011\500-599\532 Raytheon\Hydrogeology\H+A Base\Maps\410-8281.dwg



HARGIS+ASSOCIATES, INC.
Hydrogeology/Engineering

5/11 | RPT NO. 532.31 | 410-8281 | A

FIGURE 1. SITE LOCATION

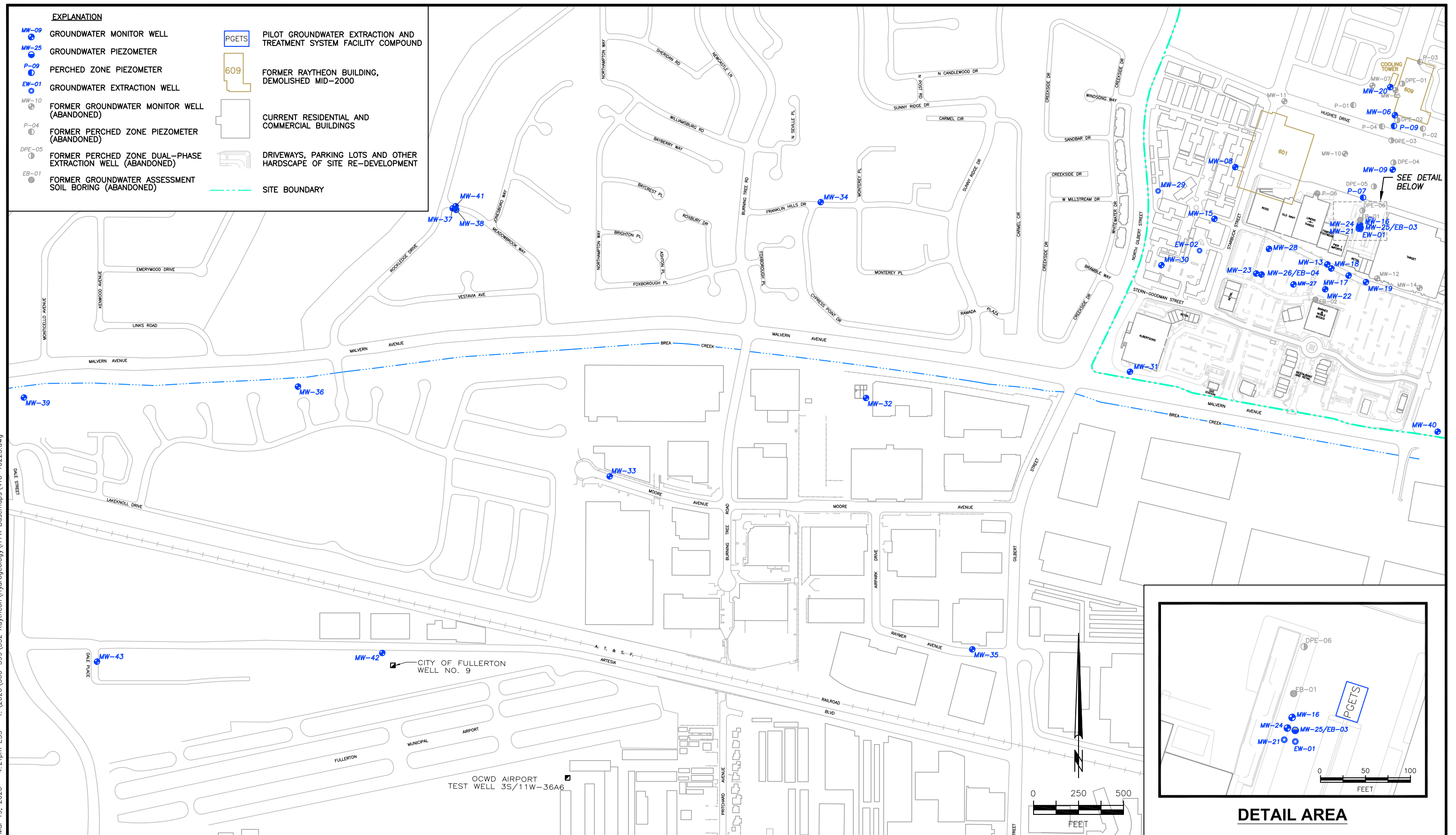
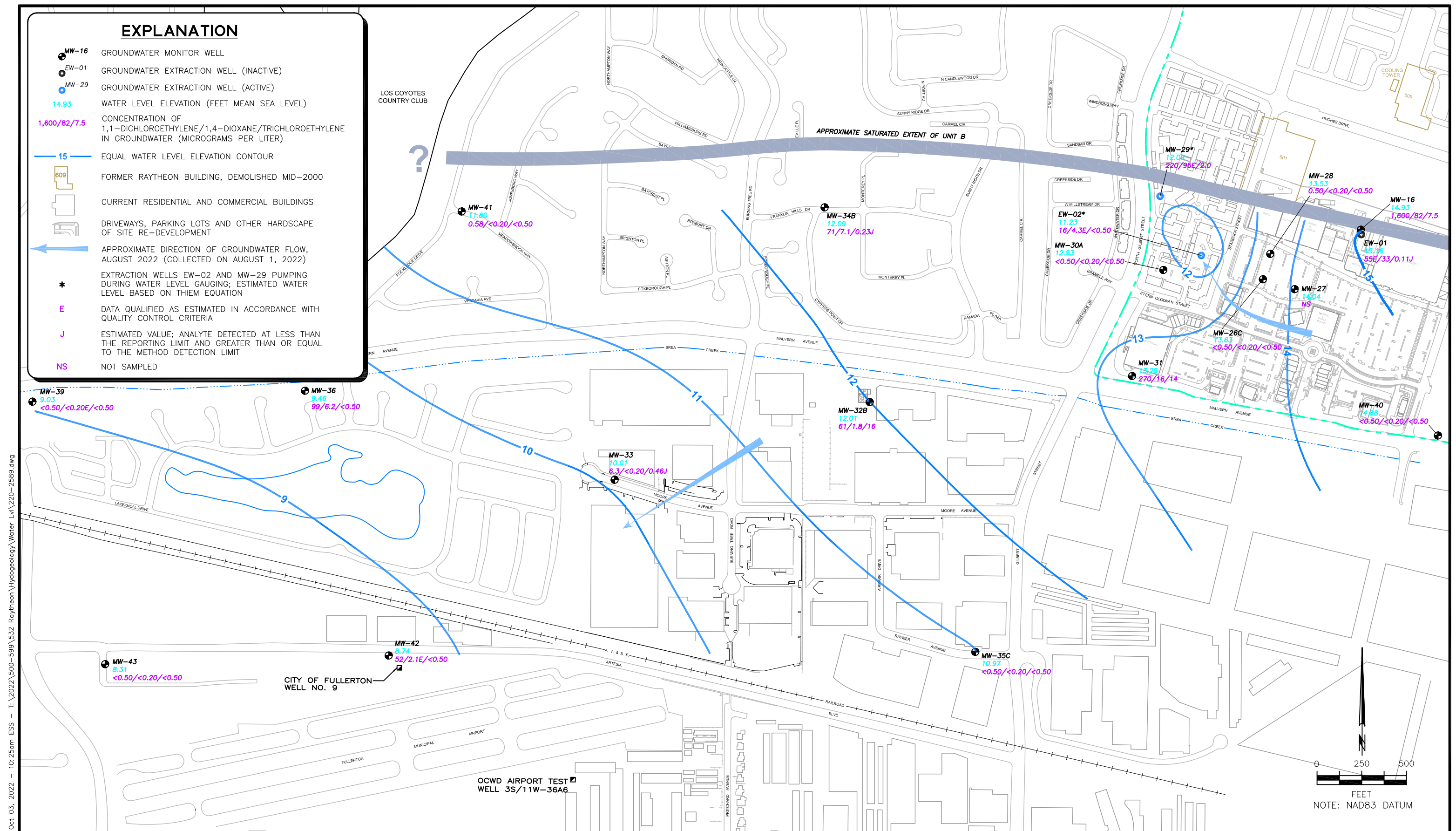


FIGURE 2.
WELL AND PIEZOMETER LOCATIONS



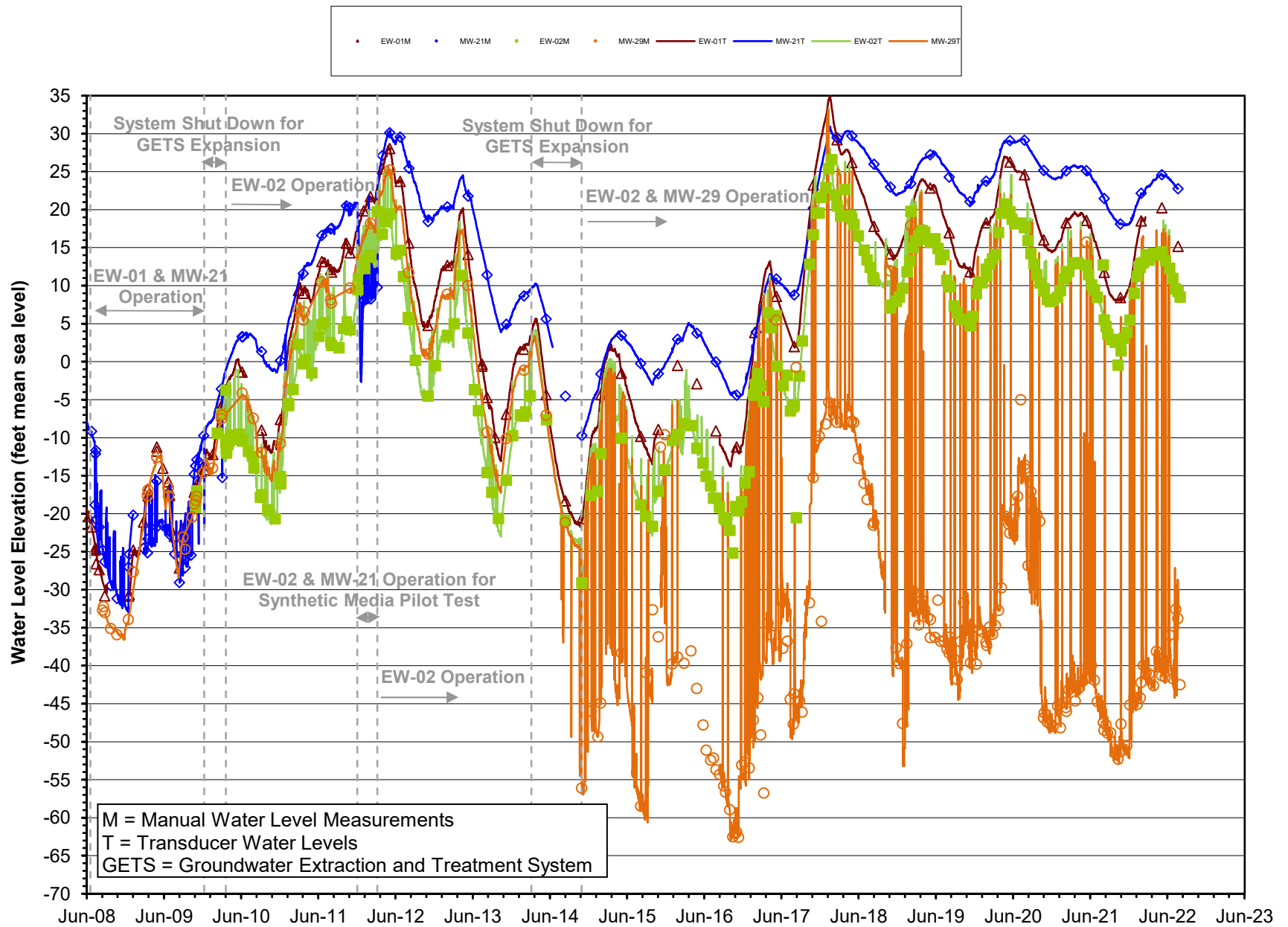


FIGURE 4.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATION
AND EXTRACTION WELL WATER LEVELS

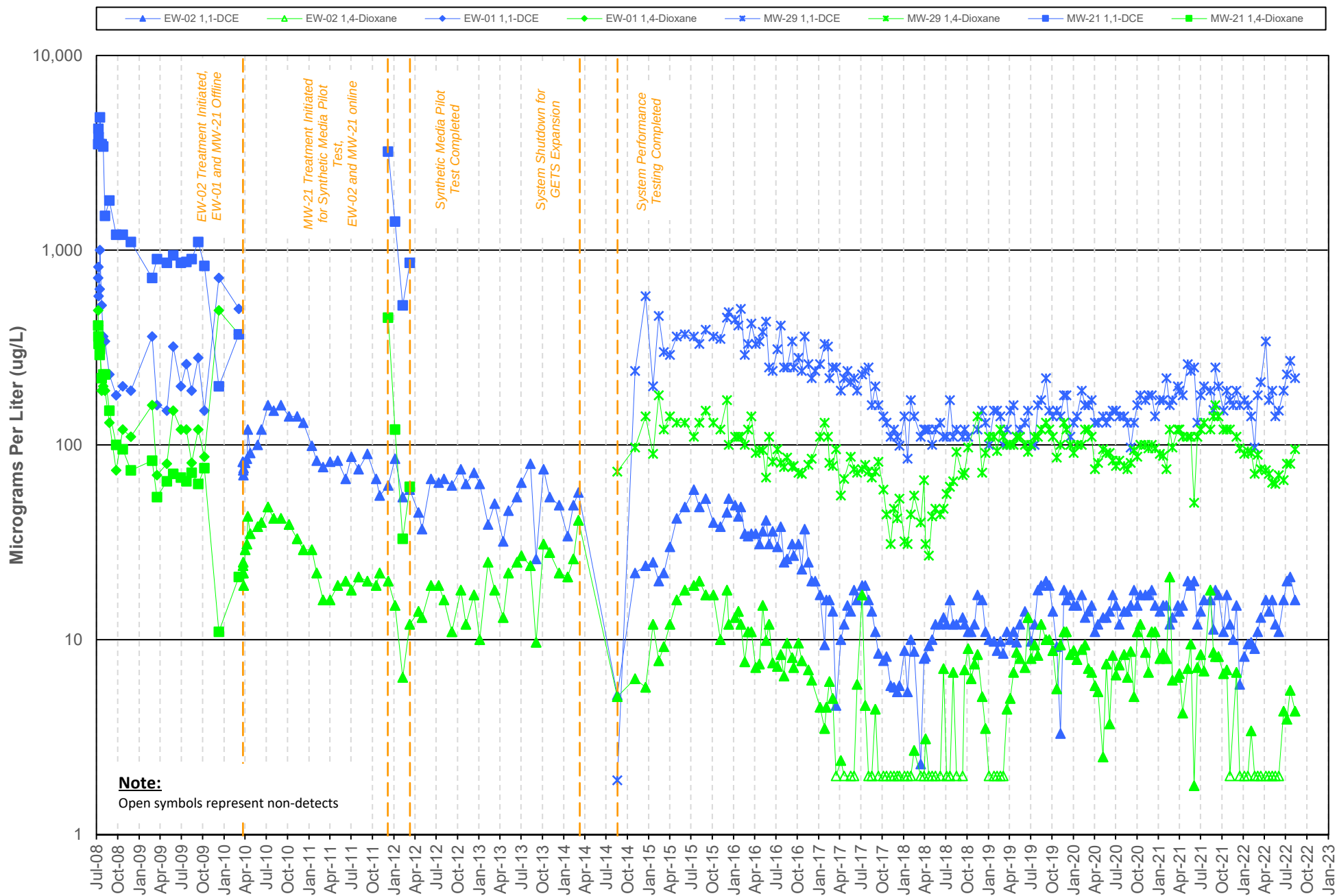


FIGURE 5.
1,1-DICHLOROETHYLENE AND 1,4-DIOXANE CONCENTRATIONS IN EXTRACTION WELLS

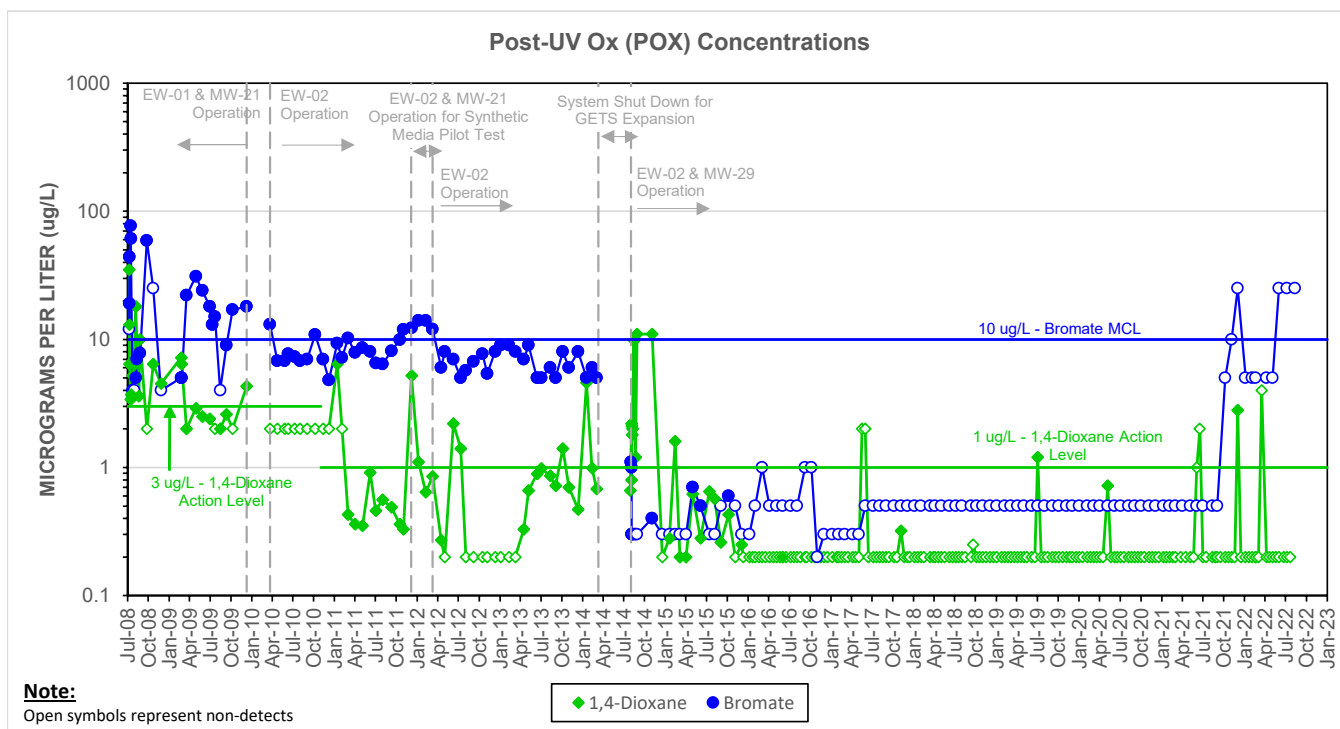
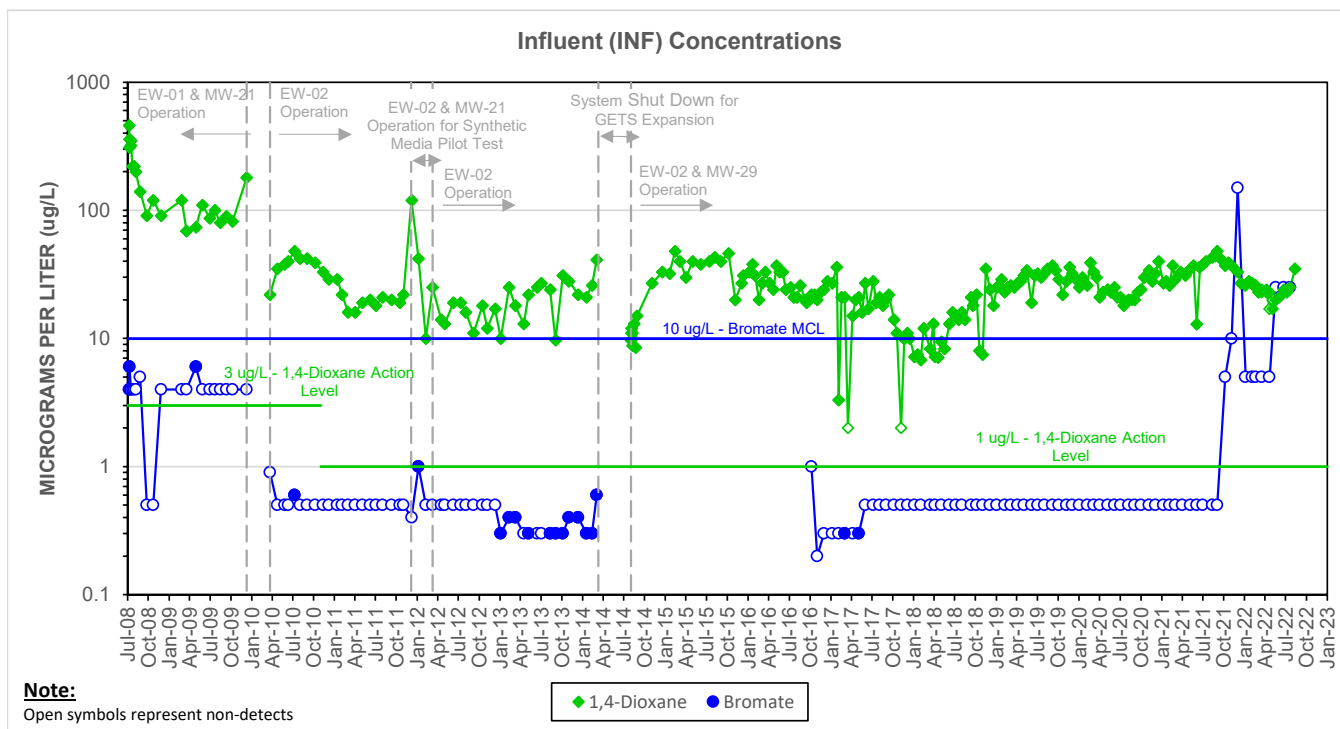


FIGURE 6.
1,4-DIOXANE AND BROMATE IN INFLUENT AND POST-OXIDATION SAMPLES

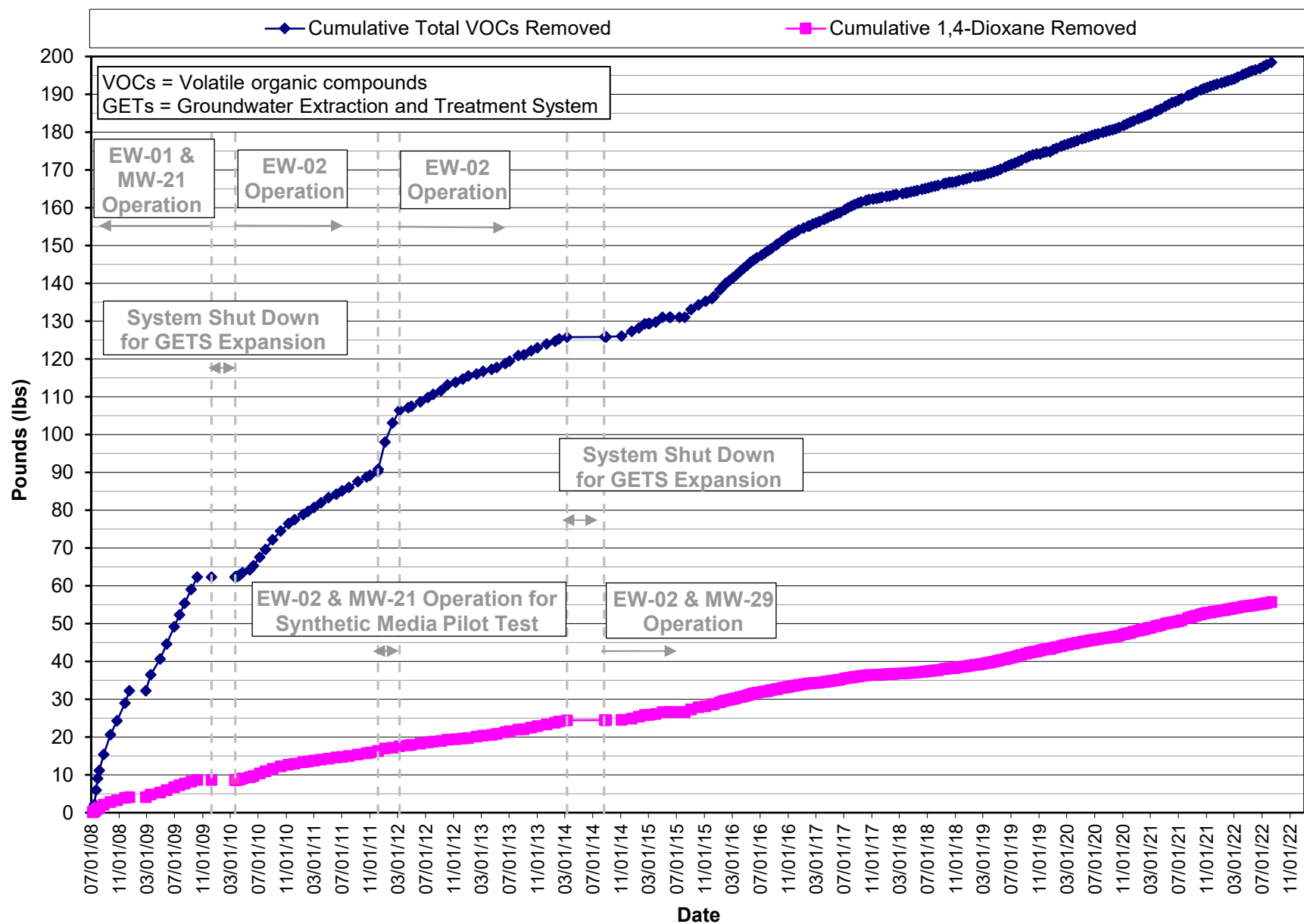


FIGURE 7.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM MASS REMOVAL

APPENDIX A
GROUNDWATER SAMPLING FIELD FORMS

AUGUST 2022

QUARTERLY GROUNDWATER MONITORING
FIELD NOTEBOOK
LOW VOLUME MONITOR WELLS

RAYTHEON COMPANY

532.30

1901 MALVERN AVE.
FULLERTON, CALIFORNIA



HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/3/22

Location: FULLERTON, CA

Presented by: Andrew Donnelly

A. GENERAL INTRODUCTION

1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES Go over the hospital route daily; wear traffic vests, use safety cones, and be aware of traffic whenever in or near the roadways; wear sunscreen and hydrate well; wear gloves and take appropriate precautions when handling contaminated groundwater; watch for black widow spiders in vaults. Notify your supervisor and field partner of any issues.

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Andrew Donnelly		HARGIS + ASSOC., INC	8/3/22
Alec Kelso		H+A	8/3/22
Amber Warden		H+A	8/3/22
Duran Sealee		H+A	08-03-22
Danielle Grollaker		H+A	8-3-22

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/4/22

Location: FULLERTON, CA

Presented by: Andrew Donnelly

A. GENERAL INTRODUCTION

1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES Go over the hospital route daily; wear traffic vests, use safety cones, and be aware of traffic whenever in or near the roadways; wear sunscreen and hydrate well; wear gloves and take appropriate precautions when handling contaminated groundwater; watch for black widow spiders in vaults. Notify your supervisor and field partner of any issues.

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Andrew Donnelly		HARGIS + ASSOC., INC	8/4/22
Amber Warden		H+A	8/4/22
Dannette Galbraith		H+A	8/4/22
Alec Kulso		H+N	8/4/22
Duran Seaver		H+A	08/04/22

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/5/22

Location: FULLERTON, CA

Presented by: Andrew Donnelly

A. GENERAL INTRODUCTION

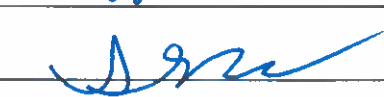
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
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B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES Go over the hospital route daily; wear traffic vests, use safety cones, and be aware of traffic whenever in or near the roadways; wear sunscreen and hydrate well; wear gloves and take appropriate precautions when handling contaminated groundwater; watch for black widow spiders in vaults. Notify your supervisor and field partner of any issues.

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Andrew Donnelly		HARGIS + ASSOC., INC	8/5/22
Alec Kulso		H+A	8/5/22
Amber Warden		H+A	8/5/22
PJ Soalee		H+A	08/5/22

INSTRUMENT CALIBRATION LOG FOR GROUNDWATER SAMPLING: Temp + pH + EC + DO + ORP

[illegible]

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: Aug 2022

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2022 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL ($\pm$ ft)	COMMENTS	INITIALS
P-07	08/1/22	1255	TOC	112.38	142.31		111.38			ANW/SDG
P-09	08/1/22	1042	TOC	120.90	183.86		120.81			ANW/SDG
MW-06	08/1/22	1045	TOC	156.30	184.70		153.72			↓
MW-08	08/1/22				155.91		132.04			
MW-09	08/1/22	0826	TOC	154.76	180.10		152.05			ANW/SDG
MW-13	08/1/22	0943	TOC	126.56	141.84		122.74			↓
MW-15	08/1/22				144.95		129.71			
MW-16	08/1/22	1219	TOC	127.47	142.40		122.48			ANW/SDG
MW-17	08/1/22	0948	TOC	129.56	142.70		122.70			ANW/SDG
MW-18	08/1/22	0938	TOC	130.07	142.32		123.16			↓
MW-19	08/1/22	1014	TOST	129.68	142.06		122.79			↓
MW-20	08/1/22	1050	TOC	150.79	184.19		149.03			↓
MW-21	08/1/22	1234	TOCT	118.43	141.18		116.58		Totalizer: NA Pumping? No	↓
MW-22	08/1/22	1018	TOST	126.31	138.65		119.44			ANW/SDG
MW-23	08/1/22	0838	TOST	126.50	137.33		119.66			ANW/SDG
MW-24	08/1/22	1222	TOST	117.86	142.83		117.75			↓
MW-25	08/1/22	1225	TOC	117.98	142.84		116.11			↓
MW-26A	08/1/22	0848	TOC	121.65	137.04		118.93			ANW/SDG
MW-26B	08/1/22	0850	TOC	122.43	137.05		121.55			↓
MW-26C	08/1/22	0856	TOC	123.59	137.22		118.47			↓

msl = Mean sea level
ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: Aug 2022

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2022 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (+ ft)	COMMENTS	INITIALS
* MW-27	08/1/22	1031	TOST	123.12	137.16		118.03			ANW/SDG
MW-28	08/1/22	0930	TOST	127.24	140.77		122.22			ANW/SDG
MW-29	08/1/22				139.81		181.11		Totalizer: Q=	
MW-30A	08/1/22				129.44		111.78			
MW-30B	08/1/22				129.39		109.80			
MW-31	08/1/22				119.60		101.16			
MW-32A	08/1/22	0810	TOST	81.89	92.88		76.20			ANW/SDG
MW-32B	08/1/22	0811	TOST	80.88	92.89		75.59		DTW: 80.88	↓
MW-32C	08/1/22	0812	TOST	71.41	92.88		67.70			↓
MW-33	08/1/22				83.19		67.61			
MW-34A	08/1/22	1325	TOST	147.69	153.25		140.89			ANW/SDG
MW-34B	08/1/22	1312	TOST	141.02	153.11		136.00			↓
MW-34C	08/1/22	1335	TOST	140.34	153.29		135.80			↓
MW-35A	08/1/22				93.57		76.91			
MW-35B	08/1/22				93.56		80.13			
MW-35C	08/1/22				93.55		76.90			
MW-36	08/1/22	1424	TOST	77.19	86.65		71.50			ANW/SDG
MW-37	08/1/22	1347	TOST	135.95	155.60		132.53			↓
MW-38	08/1/22	1402	TOST	151.58	154.90		144.54			↓
MW-39	08/1/22	1436	TOST	75.22	84.25		69.73			↓

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: Aug 2022

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2022 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-40	08/ /22				123.40		103.25			
MW-41	08/ 1 /22	1409	TDST	143.80	155.60		138.90			ANW/SDG
MW-42	08/ /22				82.80		68.45			
MW-43	08/ /22				78.64		62.64			
* EW-01	08/ 1 /22	1245	TDST	125.91	141.07		120.83		SOUNDING TUBE TO 172.65 Totalizer: NA Pumping? NO	ANW/SDG
EW-02	08/ /22				132.97		118.97		Totalizer: Q=	

msl = Mean sea level
ft = feet

**AUGUST 2022 GROUNDWATER SAMPLE PLAN
TEAM 1**

QA/QC	Total VOC's	1,4-Dioxane	APROX. GALLONS	ESTIMATED TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	AUGUST 2022 SAMPLING SCHEDULE	SAMPLE METHOD
	24	11	149	9	~~MW-34B~~	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded 240V
	ND	ND	164	19	~~MW-34A~~	Deep; A	VOCs; 1,4-Dioxane	Ded 240V
	ND	ND	96	15	~~MW-28~~	Deep; B	VOCs; 1,4-Dioxane	Ded 240V
FD/SAT MS/MSD	ND	ND	201	17	~~MW-34C~~	Deep; BC	VOCs; 1,4-Dioxane	Ded 240V
	ND	ND	218	27	~~MW-40~~	Deep; B	VOCs; 1,4-Dioxane	Ded 240V
	952	69	118	39	~~MW-16~~	Water Table; B	VOCs; 1,4-Dioxane (8270 MOD)	Geosub2
	60	1	19	19	~~MW-08~~	Water Table; BC	VOCs; 1,4-Dioxane	Geosub2
RB collected after sampling	8	NA	21	34	~~MW-15~~	Water Table; AB	VOCs	Geosub2
→	1	ND	153	60	~~MW-10~~	Deep; A	VOCs; 1,4-Dioxane	Geosub2
MS/MSD	2	ND	84	52	~~MW-20~~	Water Table; D	VOCs; 1,4-Dioxane	Geosub2
	4	ND	20.1	20	~~MW-09~~	Water Table; C	VOCs; 1,4-Dioxane	Geosub2
	ND	ND	171	89	~~MW-20C~~	Deep; B	VOCs; 1,4-Dioxane	Geosub2

NOTES

A **MS** and **MSD** (3x40ml VOA and 1L amber) should be collected every day/ alternating 1,4-Dioxane methods as indicated.

1,4-Dioxane analysis method is 8270 SIM unless specified otherwise (if historical detect is > 5.0 ug/l MOD is used).

1 = Day - # refers to the day scheduled to sample and the corresponding dedicated pipestand to use: ND=1; 0-10=2; 10 - 100=3; >100=4

Wells with dedicated pumps should follow concentration order when possible.

MW-36 and MW-39 Gate Access Code: 3252

RB = Rinsate blank taken on non-dedicated equipment each day- will vary with schedule and should be confirmed with both

**AUGUST 2022 GROUNDWATER SAMPLE PLAN
TEAM 2**

QA/QC	Total VOC's	1,4-Dioxane	APROX. GALLONS	ESTIMATE D TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	AUGUST 2022 SAMPLING SCHEDULE	SAMPLE METHOD
	1882	700	308	13	~~MW-24~~	Water Table; BC	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
FD/SPT	27	13	140	14	~~EW-01~~	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
	77	5	262	32	~~MW-31~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	110	1	120	34	~~MW-30B~~	Deep; BC	VOCs; 1,4-Dioxane	Ded.240V
	63	2	63	22	~~MW-32B~~	Deep; B	VOCs; 1,4-Dioxane	Ded. Redi-flo 2
	82	ND	984	76	~~MW-36~~	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded.240V
	43	2	885	51	~~MW-42~~	Deep; B	VOCs; 1,4-Dioxane	Ded 240V
FD/SPT	8	ND	828	46	~~MW-33~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	1	ND	135	16	~~MW-41~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	ND	ND	66	18	~~MW-30A~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	ND	ND	946	45	~~MW-35C~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	ND	ND	937	44	~~MW-43~~	Deep; B	VOCs; 1,4-Dioxane	Ded 240V
	ND	ND	671	65	~~MW-32A~~	Deep; AB	VOCs; 1,4-Dioxane	Ded.240V
MS/MSD	ND	ND	1,014	100	~~MW-32C~~	Water Table; C	VOCs; 1,4-Dioxane	Ded.240V
	ND	ND	834	44	~~MW-39~~	Deep. B	VOCs; 1,4-Dioxane	Ded.240V

NOTE

1 = Day - # refers to the day scheduled to sample and the corresponding dedicated pipestand to use: ND=1; 0-10=2; 10 - 100=3; >100=4

A **MS** and **MSD** (3x40ml VOA and 1L amber) should be collected every day/ alternating 1,4-Dioxane methods as indicated.

1,4-Dioxane analysis method is 8270 SIM unless specified otherwise (if historical detect is > 5.0 ug/l MOD is used).

Wells with dedicated pumps should follow concentration order when possible.

MW-36 and MW-39 Gate Access Code: 3252

RB = Rinsate blank taken on non-dedicated equipment each day- will vary with schedule and should be confirmed with both teams each morning.

GROUNDWATER SAMPLING INFORMATION

DATE: 08/2/2022

TASK: 532.30

WELL ID: MW-09

Time 1419 Static DTW (ft below reference point) 154.73	Casing Volume (CV) (gallons) 6.1 3 CV (gallons) 18.3	Weather Conditions 1418	Initials: ANW/AMK
Casing Total Depth (ft below reference point) 192.20	Purging Device ~~permeable pump~~ ^{sub} Sampling Device ~~ded. tubing~~	Time ~~1418~~ Temp 88°F	Begin Purge 1442 End Purge 1509
Water Column (feet) 37.47	Pump: Depth (ft brp) 190 Type ~~geosynth~~ 2 Voltage 120 HP 0.5	Skies Clear	Gallons Purged 27.3 CVs Purged 4.5
Casing Capacity (Diameter 2") (gallons per foot) 0.163	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) - From -	DTW (ft brp) 155.60 Time 1500

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Setting (units/sec)		COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)	Frequency Hz	Hz	
1442	154.73	0	0	BEGIN PURGE								
1445	155.50	3.05	0.5	24.0	6.92	2.782	+98.9	5.11	114.23	250		Q ≈ 1.0 GPM
1448	155.54	6.1	1.0	24.0	6.90	2.785	+104.0	4.40	208.76	250		
1451	155.54	9.15	1.5	23.8	6.90	2.786	+105.0	3.86	242.89	250		
1454	155.58	12.2	2.0	23.8	6.90	2.787	+104.1	3.57	375.55	250		
1457	155.60	15.25	2.5	23.8	6.90	2.789	+103.1	3.43	407.12	250		
1500	155.60	18.3	3.0	23.8	6.91	2.786	+102.0	3.40	375.86	250		COLLECT SAMPLE
1509	NM	27.3	4.5	END PURGE								

SAMPLE COLLECTION SAMPLE TIME 1509

ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA X
8270 SIM 1,4 dioxane	1	1 L Amber X
8270 MOD 1,4 dioxane		1 L Amber

DUPLICATES / SPLITS / BLANKS? Y ☒

If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/2/2022

TASK: 532.30

WELL ID: MW-08

Time <u>1545</u> Static DTW (ft below reference point)	<u>133.54</u>	Casing Volume (CV) (gallons) <u>5.3</u> 3 CV (gallons) <u>15.9</u>	Weather Conditions	Initials: <u>ANW/AMK</u>
Casing Total Depth (ft below reference point)	<u>166.1</u>	Purging Device <u>Sub pump</u> Sampling Device <u>ded. tubing</u>	Time <u>1514</u> Temp. <u>90°F</u>	Begin Purge <u>1559</u> End Purge <u>1618</u>
Water Column (feet)	<u>32.46</u>	Pump: Depth (ft brp) <u>163</u> Type <u>geosub</u> Voltage <u>115</u> HP <u>0.5</u>	Skies <u>clear</u>	Gallons Purged <u>16.9</u> CVs Purged <u>3.2</u>
Casing Capacity (Diameter <u>2"</u>) (gallons per foot)	<u>0.163</u>	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>135.29</u> Time <u>1617</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Setting (unless noted)	COMMENTS
				Temp. (°C)	pH	EC (MS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
<u>1559</u>	<u>133.54</u>	<u>0</u>	<u>0</u>	<u>BEGIN PURGE</u>							
<u>1602</u>	<u>135.00</u>	<u>2.65</u>	<u>0.5</u>	<u>23.6</u>	<u>7.33</u>	<u>1.739</u>	<u>+59.7</u>	<u>1.31</u>	<u>486.44</u>	<u>220</u>	<u>Q ≈ 1 GPM</u>
<u>1605</u>	<u>135.04</u>	<u>5.3</u>	<u>1.0</u>	<u>23.8</u>	<u>7.32</u>	<u>1.719</u>	<u>+59.9</u>	<u>1.23</u>	<u>486.38</u>	<u>220</u>	
<u>1608</u>	<u>135.04</u>	<u>7.95</u>	<u>1.5</u>	<u>23.7</u>	<u>7.32</u>	<u>1.722</u>	<u>+55.1</u>	<u>1.19</u>	<u>174.44</u>	<u>220</u>	
<u>1611</u>	<u>135.09</u>	<u>10.6</u>	<u>2.0</u>	<u>23.7</u>	<u>7.31</u>	<u>1.719</u>	<u>+50.4</u>	<u>1.15</u>	<u>241.08</u>	<u>220</u>	
<u>1614</u>	<u>135.10</u>	<u>13.25</u>	<u>2.5</u>	<u>23.6</u>	<u>7.31</u>	<u>1.719</u>	<u>+47.5</u>	<u>1.12</u>	<u>293.26</u>	<u>220</u>	
<u>1617</u>	<u>135.29</u>	<u>15.9</u>	<u>3.0</u>	<u>23.7</u>	<u>7.30</u>	<u>1.720</u>	<u>+46.4</u>	<u>1.00</u>	<u>156.79</u>	<u>220</u>	<u>COLLECT SAMPLE</u>
<u>1618</u>	<u>NM</u>	<u>16.9</u>	<u>3.2</u>	<u>END PURGE</u>							

SAMPLE COLLECTION SAMPLE TIME <u>1617</u>				AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE		NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	<u>3</u>	40 ml VOA	<u>X</u>				
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber	<u>X</u>				
8270 MOD 1,4 dioxane		1 L Amber					
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u> If yes, complete appropriate forms.							

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 3 /2022

TASK: 532.30

WELL ID: MW-32B

Time <u>0917</u> Static DTW (ft below reference point)	<u>81.04</u> ^{SV} screen <u>SV</u> Casing Volume (CV) (gallons)	<u>19.2</u> ^{SV} 3 CV (gallons)	<u>57.6</u>	Weather Conditions	Initials: <u>AMP/AMK</u>
Casing Total Depth (ft below reference point)	<u>999</u>	Purging Device <u>ded. ground for rediflo</u>	Sampling Device <u>ded. tubing</u>	Time <u>0930</u> Temp. <u>80</u>	Begin Purge <u>0940</u> End Purge <u>1003</u>
<u>pump to screen</u> Water Column (feet)	<u>32</u>	Pump: Depth (ft brp) <u>967</u> Type <u>rediflo 2</u> Voltage <u>115</u> HP <u>0.5</u>		Skies <u>clear</u>	Gallons Purged <u>69</u> CVs Purged <u>3.6</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>		Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>83.16</u> Time <u>1001</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0940	81.04	0	0	BEGIN PURGE							
0944	83.38	12	0.6	21.6	7.48	0.804	84.3	0.06	0.0	300	Q = 3 gpm
0947	83.16	21	1.1	21.6	7.47	0.804	85.3	0.05	0.0	300	
0950	83.16	30	1.6	21.6	7.47	0.804	87.3	0.05	0.0	300	
0954	83.16	42	2.2	21.6	7.45	0.802	93.3	0.05	0.00	300	
0958	83.16	54	2.8	21.6	7.43	0.802	92.1	0.05	0.00	300	
1001	83.16	63	3.3	21.6	7.43	0.802	91.3	0.05	0.00	300	COLLECT SAMPLE
1003	NM	69	3.6	END PURGE							

SAMPLE COLLECTION SAMPLE TIME <u>1001</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber
8270 MOD 1,4 dioxane	<u>1</u> 1 L Amber
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/3/2022

TASK: 532.30

WELL ID: MW-15

Time <u>1150</u> Static DTW (ft below reference point)	<u>130.48</u>	Casing Volume (CV) (gallons) <u>6.6</u> 3 CV (gallons) <u>19.7</u>	Weather Conditions	Initials: <u>AMD/AMK</u>
Casing Total Depth (ft below reference point)	<u>170.80</u>	Purging Device <u>submers. pump</u> Sampling Device <u>ded tubing</u>	Time <u>1150</u> Temp. <u>80</u>	Begin Purge <u>1225</u> End Purge <u>1307</u>
Water Column (feet)	<u>40.32</u>	Pump: Depth (ft brp) <u>~167</u> Type <u>geosub2</u> Voltage <u>120</u> HP <u>-</u>	Skies <u>clear</u>	Gallons Purged <u>21</u> CVs Purged <u>3.1</u>
Casing Capacity (Diameter <u>2"</u> (gallons per foot)	<u>0.163</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>131.10</u> Time <u>1307</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1225	130.48	0	0	BEGIN PURGE							
1232	130.92	3.5	0.5	25.1	7.05	1.919	80.7	4.00	86.99	253	Q = 0.5 gmp
1238	131.02	6.5	1.0	24.4	6.99	1.920	87.0	3.95	111	253	
1245	131.08	10.0	1.5	24.5	6.99	1.914	83.3	3.94	44	253	
1251	131.09	13.0	2.0	24.4	6.98	1.911	78.0	3.92	7	253	
1258	131.10	16.5	2.5	24.5	6.96	1.911	73.3	3.93	2	253	
1305	131.10	20.0	3.0	24.2	6.94	1.910	74.0	3.94	1.45	253	Collect Sample
1307	NM	21.0	3.1	END PURGE							

SAMPLE COLLECTION SAMPLE TIME 1305

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>36</u>	40 ml VOA
8270 SIM 1,4 dioxane		1 L Amber
8270 MOD 1,4 dioxane		1 L Amber

DUPLICATES / SPLITS / BLANKS? Y N

If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

Collected rinsate blank • RB-080322 @ 1450.

Installed new dedicated 3/8 in tubing in well

GROUNDWATER SAMPLING INFORMATION

DATE: 08/03/2022

TASK: 532.30

WELL ID: MN-21

Time <u>1347</u> Static DTW (ft below reference point) <u>118.80</u>	Casing Volume (CV) (gallons) <u>76</u> 3 CV (gallons) <u>228</u>	Weather Conditions Time <u>1348</u> Temp. <u>80</u>	Initials: <u>AMD/AMK</u>
Casing Total Depth (ft below reference point) <u>232.1</u>	Purging Device <u>ded pump</u> Sampling Device <u>ded sample port</u>	Skies <u>clear</u>	Begin Purge <u>1348</u> End Purge <u>1402</u>
Water Column (feet) <u>113.3</u>	Pump: Depth (ft brp) <u>-</u> Type <u>-</u> Voltage <u>-</u> HP <u>-</u>	Wind (mph) <u>2</u> From <u>E</u>	Gallons Purged <u>308</u> CVs Purged <u>4.1</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot) <u>0.66</u>	Monitor Well Recharge Rate: Slow <u>-</u> Fast <u>X</u>	DTW (ft brp) <u>139.41</u> Time <u>1402</u>	

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1348	118.80	0	0								
1350	137.37	44	0.6	22.4	8.37	2.202	14.3	1.61	12.3	-	Q = 22 gpm
1352	138.11	88	1.2	22.1	7.61	2.201	9.0	1.65	10.1	-	
1354	138.56	132	1.7	22.2	7.18	2.208	17.3	1.99	4.5	-	
1356	139.14	176	2.3	21.9	7.12	2.216	30.3	3.55	4.3	-	
1358	139.32	220	3.0	21.9	7.10	2.206	36.6	3.55	4.9	-	
1400	139.41	264	3.5	22.0	7.10	2.203	37.7	3.55	4.1	-	COLLECT SAMPLE
1402	NM	308	4.1								

SAMPLE COLLECTION SAMPLE TIME <u>1400</u>	AIR MONITORING PID/FID ppm: VAULT <u>NA</u> BKGD <u>NA</u> BREATHING ZONE <u>NA</u> DISCHARGE WATER <u>NA</u>
ANALYSIS QUANTITY TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)
8260B VOCs <u>3</u> 40 ml VOA	
8270 SIM 1,4 dioxane <u>1</u> 1 L Amber	
8270 MOD 1,4 dioxane <u>1</u> 1 L Amber	
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>	
If yes, complete appropriate forms.	

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ /2022

TASK: 532.30

WELL ID: EW-01

Time <u>1405</u> Static DTW (ft below reference point) <u>125.74</u>	Casing Volume (CV) (gallons) <u>33.1</u> 3 CV (gallons) <u>99.5</u>	Weather Conditions Time <u>1405</u> Temp. <u>89</u>	Initials: <u>AMP/AMK</u>
Casing Total Depth (ft below reference point) <u>181.00</u>	Purging Device <u>ded pump</u> Sampling Device <u>ded sample port</u>	Skies <u>clear</u>	Begin Purge <u>1410</u> End Purge <u>1425</u>
Water Column (feet) <u>55.26</u>	Pump: Depth (ft brp) <u>-</u> Type <u>-</u> Voltage <u>-</u> HP <u>-</u>	Wind (mph) <u>-</u> From <u>-</u>	Gallons Purged <u>150</u> CVs Purged <u>4.5</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow <u>-</u> Fast <u>X</u>		DTW (ft brp) <u>126.40</u> Time <u>1421</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1410	125.74	0	0	BEGIN PURGE							
1412	126.38	20	0.6	22.1	7.23	1.472	54.3	7.20	6.67	-	Q ≈ 10 gpm
1414	~~128.15~~	40	1.2	22.2	7.21	1.476	64.0	6.52	6.31	-	
1416	126.39	60	1.8	22.3	7.21	1.475	65.9	6.45	5.89	-	
1418	126.39	80	2.4	22.3	7.21	1.473	67.3	6.21	6.21	-	
1420	126.40	100	3.0	22.3	7.21	1.477	69.4	6.94	5.31	-	
1421	126.40	110	3.3	22.3	7.21	1.478	70.3	6.73	4.33	-	COLLECT SAMPLE
1425	NM	150	4.5	END PURGE							

SAMPLE COLLECTION SAMPLE TIME 1421

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>9</u>	40 ml VOA
8270 SIM 1,4 dioxane	<u>3</u>	1 L Amber
8270 MOD 1,4 dioxane	<u>3</u>	1 L Amber

DUPLICATES ☒ SPLITS ☒ BLANKS? ☒ Y N

If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

Collected duplicate sample EW-0100 @ 1423

Collected split sample EW-01 @ 1430

GROUNDWATER SAMPLING INFORMATION

DATE: 08/3/2022

TASK: 532.30

WELL ID: MW-16

Time <u>1530</u> Static DTW (ft below reference point)	<u>127.50</u>	Casing Volume (CV) (gallons) <u>33.6</u> 3 CV (gallons) <u>101</u>	Weather Conditions	Initials: <u>AMD/AMK</u>
Casing Total Depth (ft below reference point)	<u>178.50</u>	Purging Device <u>submers. pump</u> Sampling Device <u>ded. tubing</u>	Time <u>1540</u> Temp. <u>80</u>	Begin Purge <u>1540</u> End Purge <u>1632</u>
Water Column (feet)	<u>51.00</u>	Pump: Depth (ft brp) <u>~175</u> Type <u>geosub2</u> Voltage <u>120</u> HP <u>0.5</u>	Skies <u>clear</u>	Gallons Purged <u>52</u> CVs Purged <u>1.54</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.66</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>128.69</u> Time <u>1630</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Setting (uniness)		COMMENTS
				Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)	Frequency Hz		
1540	127.50	0	0	BEGIN PURGE								
1555	128.50	15	0.45	23.2	7.62	1.197	50.5	4.45	2.0	245	Q = 1 gpm	
1610	128.50	30	0.9	23.1	7.26	1.185	62.3	4.40	9.9	245		
1615	128.54	35	1.06	23.1	7.26	1.197	63.1	4.50	7.6	245		
1620	128.65	40	1.21	23.1	7.26	1.213	61.1	4.61	4.3	245		
1625	128.67	45	1.36	23.1	7.25	1.223	58.8	4.69	4.31	245		
1630	128.69	50	1.51	23.1	7.26	1.224	58.3	4.68	4.28	245	COLLECT SAMPLE	
1632	NM	52	1.54	END PURGE								

SAMPLE COLLECTION SAMPLE TIME <u>1630</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA
8270 SIM 1,4 dioxane	<u> </u> 1 L Amber
8270 MOD 1,4 dioxane	<u>1</u> 1 L Amber
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>	
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/2/2022

TASK: 532.30

WELL ID: MW-26C

Time 0900 Static DTW (ft below reference point) 123.67	Screen Volume (SV) (gallons) 49	3 SV (gallons) 147	Weather Conditions	Initials: ANW/AMK
Casing Total Depth (ft below reference point) 499	Purging Device sub pump	Sampling Device 3/8" LDPE tubing	Time 0900 Temp 73°F	Begin Purge 1005 End Purge 1132
Water Column (Pump Set Depth to Screen) (feet) 299	Pump: Depth (ft brp) 200	Type gldsub2 Voltage 115 HP 0.5	Skies clear	Gallons Purged 152.3 SVs Purged 3.1
Casing Capacity (Diameter 2") (gallons per foot) 0.163	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) From	DTW (ft brp) 124.15 Time 1129

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	Pump Setting (units)	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)			
1005	123.67	0	0									BEGIN PURGE
1019	124.11	24.5	0.5	23.1	9.21	0.461	-321.5	0.02	53.14	255		Q ≈ 1.75 GPM
1033	124.13	49.0	1.0	23.1	9.10	0.464	-337.8	0.06	104.07	255		
1047	124.15	73.5	1.5	23.2	7.66	0.772	-181.2	0.09	114.96	255		
1101	124.15	98.0	2.0	23.3	7.56	0.813	-151.2	0.14	88.46	255		
1115	124.18	122.5	2.5	23.5	7.58	0.823	-143.5	0.14	108.84	255		
1129	124.15	147.0	3.0	23.4	7.61	0.828	-140.2	0.14	99.84	255		COLLECT SAMPLE
1132	NM	152.3	3.1									END PURGE

SAMPLE COLLECTION SAMPLE TIME 1132		ANALYSIS QUANTITY TYPE	
8260B VOCs	3	40 ml VOA	X
8270 SIM 1,4 dioxane	1	1 L Amber	X
8270 MOD 1,4 dioxane		1 L Amber	
DUPLICATES / SPLITS / BLANKS?		(Y) N	
If yes, complete appropriate forms.			

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
 NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

Rinsate blank RB-080222 @ 1355

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 4 /2022

TASK: 532.30

WELL ID: MW-28

Time <u>0830</u> Static DTW (ft below reference point)	<u>127.24</u>	Screen Volume (SV) (gallons) <u>27</u> 3 SV (gallons) <u>81</u>	Weather Conditions	Initials: <u>AMD/AMK</u>
Casing Total Depth (ft below reference point)	<u>375</u>	Purging Device <u>ded. pump</u> Sampling Device <u>0-10 pipestand</u>	Time <u>0834</u> Temp. <u>75</u>	Begin Purge <u>0843</u> End Purge <u>0859</u>
Water Column (Pump Set Depth to Screen) (feet)	<u>45</u>	Pump: Depth (ft brp) <u>330</u> Type <u>grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>clear</u>	Gallons Purged <u>100</u> SVs Purged <u>3.7</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0</u> From <u>-</u>	DTW (ft brp) <u>135.68</u> Time <u>0857</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0843	127.24	0	0	BEGIN PURGE							
0845	135.06	13.5	0.5	21.8	7.36	1.098	128.6	3.99	7.9	-	Q = 6 gpm
0848	135.21	27	1.0	21.8	7.33	1.095	129.5	3.80	7.3	-	
0850	135.53	40.5	1.5	21.7	7.26	1.090	139.2	3.73	7.0	-	
0853	135.54	54	2.0	21.6	7.27	1.094	138.6	3.62	7.0	-	
0855	135.57	67.5	2.5	21.7	7.27	1.096	136.8	3.51	5.1	-	
0857	135.68	81	3.0	21.8	7.30	1.099	133.5	3.51	4.8	-	COLLECT SAMPLE
0859	NM	100	3.7	END PURGE							

SAMPLE COLLECTION SAMPLE TIME <u>0857</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber
8270 MOD 1,4 dioxane	<u>1</u> 1 L Amber
DUPLICATES / SPLITS / BLANKS?	Y <u>(N)</u>
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 4 /2022

TASK: 532.30

WELL ID: MW-20

Time <u>1001</u> Static DTW (ft below reference point)	<u>150.87</u>	Casing CV <u>28</u> CV <u>85</u>	Weather Conditions	Initials: <u>AMP/AMK</u>
Casing Total Depth (ft below reference point)	<u>198.2</u>	Screen Volume (SV) (gallons) <u>28</u> 3 SV (gallons) <u>85</u>	Time <u>1000</u> Temp. <u>80</u>	Begin Purge <u>1024</u> End Purge <u>1157</u>
Water Column (Pump Set Depth to Screen) (feet)	<u>47.33</u>	Purging Device <u>submers. pump</u> Sampling Device <u>3/8" ded. tubing</u>	Skies <u>clear</u>	Gallons Purged <u>69</u> SVs Purged <u>2.46</u>
Casing Capacity (Diameter <u>4</u> " (gallons per foot)	<u>0.60</u>	Pump: Depth (ft brp) <u>185</u> Type <u>geosub</u> Voltage <u>115</u> HP <u>0.5</u>	Wind (mph) <u>1</u> From <u>W</u>	DTW (ft brp) <u>153.03</u> Time <u>1154</u>
		Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>		

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
<u>1024</u>	<u>150.87</u>	<u>0</u>	<u>0</u>	<u>BEGIN PURGE</u>							
<u>1039</u>	<u>152.88</u>	<u>11.25</u>	<u>0.4</u>	<u>24.4</u>	<u>7.59</u>	<u>1.246</u>	<u>144.8</u>	<u>5.63</u>	<u>55</u>	<u>255</u>	<u>Q ≈ 0.75 gpm</u>
<u>1054</u>	<u>152.84</u>	<u>22.5</u>	<u>0.8</u>	<u>24.2</u>	<u>7.51</u>	<u>1.243</u>	<u>115.7</u>	<u>5.51</u>	<u>12</u>	<u>255</u>	
<u>1109</u>	<u>153.00</u>	<u>33.75</u>	<u>1.2</u>	<u>24.2</u>	<u>7.57</u>	<u>1.245</u>	<u>97.7</u>	<u>5.68</u>	<u>22</u>	<u>255</u>	
<u>1124</u>	<u>153.00</u>	<u>45.00</u>	<u>1.6</u>	<u>24.4</u>	<u>7.48</u>	<u>1.242</u>	<u>97.4</u>	<u>5.50</u>	<u>9</u>	<u>255</u>	
<u>1139</u>	<u>153.02</u>	<u>56.25</u>	<u>2.0</u>	<u>24.9</u>	<u>7.48</u>	<u>1.244</u>	<u>95.2</u>	<u>5.36</u>	<u>13</u>	<u>253</u>	
<u>1154</u>	<u>153.03</u>	<u>67.50</u>	<u>2.4</u>	<u>25.0</u>	<u>7.52</u>	<u>1.248</u>	<u>93.7</u>	<u>5.37</u>	<u>22</u>	<u>255</u>	
<u>1157</u>	<u>N/A</u>	<u>69.00</u>	<u>2.46</u>	<u>END PURGE</u>							<u>sample collected at 1154</u>

SAMPLE COLLECTION SAMPLE TIME 1154

ANALYSIS QUANTITY TYPE

8260B VOCs 912 40 ml VOA
 8270 SIM 1.4 dioxane 34 1 L Amber
 8270 MOD 1.4 dioxane _____ 1 L Amber

DUPLICATES / SPLITS BLANKS
 If yes, complete appropriate forms.

Y

N

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

Collected MS/MSD samples. Installed new 3/8" tubing into well. Length of tubing extends from TD to Hurst St where trailer is parked to the west. Collected rinsate blank sample RB-080422 @ 1220

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 4 /2022

TASK: 532.30

WELL ID: MW-18

Time <u>1340</u> Static DTW (ft below reference point)	<u>129.81</u>	Casing <u>CV</u> Screen Volume (SV) (gallons) <u>42</u> CV (gallons) <u>126</u>	Weather Conditions	Initials: <u>AMD/AMK</u>
Casing Total Depth (ft below reference point)	<u>194.1</u>	Purging Device <u>Submersible pump</u> Sampling Device <u>ded tubing</u>	Time <u>1340</u> Temp. <u>80</u>	Begin Purge <u>1345</u> End Purge <u>1518</u>
Water Column (Pump Set Depth to Screen) (feet)	<u>64.29</u>	Pump: Depth (ft brp) <u>~192</u> Type <u>geosynth</u> Voltage <u>115</u> HP <u>0.5</u>	Skies <u>clear</u>	Gallons Purged <u>69.75</u> SVs Purged <u>1.66</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot)	<u>0.66</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>✓</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>136.02</u> Time <u>1515</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Setting Frequency Hz (unitless)	COMMENTS
				Temp. (°C)	pH	M EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
<u>1245</u> <u>1345</u>	<u>129.81</u>	<u>0</u>	<u>0</u>								<u>BEGIN PURGE</u>
<u>1300</u> <u>1400</u>	<u>135.60</u>	<u>11.25</u>	<u>0.27</u>	<u>26.9</u>	<u>7.50</u>	<u>0.411</u>	<u>107.2</u>	<u>2.23</u>	<u>1.53</u>	<u>255</u>	<u>Q=0.75 gpm</u>
<u>1345</u> <u>1415</u>	<u>135.30</u>	<u>22.5</u>	<u>0.53</u>	<u>24.3</u>	<u>7.31</u>	<u>1.236</u>	<u>96.3</u>	<u>4.75</u>	<u>3.16</u>	<u>255</u>	
<u>1430</u>	<u>135.80</u>	<u>33.75</u>	<u>0.80</u>	<u>23.9</u>	<u>7.24</u>	<u>1.253</u>	<u>100.0</u>	<u>5.02</u>	<u>2.48</u>	<u>255</u>	
<u>1445</u>	<u>135.97</u>	<u>45.00</u>	<u>1.07</u>	<u>24.0</u>	<u>7.27</u>	<u>1.303</u>	<u>100.5</u>	<u>5.65</u>	<u>2.01</u>	<u>255</u>	
<u>1500</u>	<u>135.98</u>	<u>56.25</u>	<u>1.34</u>	<u>24.0</u>	<u>7.19</u>	<u>1.315</u>	<u>94.4</u>	<u>5.51</u>	<u>1.48</u>	<u>255</u>	
<u>1515</u>	<u>136.02</u>	<u>67.50</u>	<u>1.61</u>	<u>23.9</u>	<u>7.20</u>	<u>1.298</u>	<u>89.2</u>	<u>5.48</u>	<u>1.11</u>	<u>255</u>	
<u>1518</u>	<u>Nm</u>	<u>69.75</u>	<u>1.66</u>								<u>Sample Collected at 1515</u>

SAMPLE COLLECTION SAMPLE TIME <u>1515</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA <u>✓</u>
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber <u>✓</u>
8270 MOD 1,4 dioxane	<u>1</u> 1 L Amber
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>	
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
<u>Installed new 3/8" tubing.</u>			

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 5 /2022

TASK: 532.30

WELL ID: MW-40

Time <u>0850</u> Static DTW (ft below reference point) <u>109.30</u>	Screen Volume (SV) (gallons) <u>67.5</u> 3 SV (gallons) <u>202.5</u>	Weather Conditions	Initials: <u>AMD/AMK</u>
Casing Total Depth (ft below reference point) <u>970</u>	Purging Device <u>ded pump</u> Sampling Device <u>ND pipestand</u>	Time <u>0850</u> Temp. <u>75</u>	Begin Purge <u>0855</u> End Purge <u>0922</u>
Water Column (Pump Set Depth to Screen) (feet) <u>50</u>	Pump: Depth (ft brp) <u>920</u> Type <u>grundex</u> Voltage <u>240</u> HP <u>X</u>	Skies <u>some clouds</u>	Gallons Purged <u>216.4</u> SVs Purged <u>3.2</u>
Casing Capacity (Diameter <u>6"</u>) (gallons per foot) <u>1.35</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>110.21</u> Time <u>0920</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Setting (units)	Frequency	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)			
0855	109.30	0	0			BEGIN PURGE						
0859	110.16	~~34~~ 33.75	0.5	21.1	7.52	0.892	-218.0	0.07	1.98	-		Q ≈ 8 GPM
0904	110.19	67.50	1.0	21.4	7.63	0.855	-222.2	0.03	7.89	-		
0908	110.19	101.25	1.5	21.5	7.64	0.860	-199.7	0.18	19.96	-		
0912	110.19	135.00	2.0	21.7	7.59	0.854	-174.9	0.30	37.92	-		
0916	110.21	168.75	2.5	21.7	7.59	0.856	-170.2	0.33	61.69	-		
0920	110.21	202.50	3.0	21.6	7.59	0.853	-169.5	0.33	52.10	-		Sample Collected
0922	Nm	216.4	3.2			END PURGE						

SAMPLE COLLECTION SAMPLE TIME 0920

ANALYSIS QUANTITY TYPE

8260B VOCs	3	40 ml VOA	✓
8270 SIM 1,4 dioxane	1	1 L Amber	✓
8270 MOD 1,4 dioxane		1 L Amber	

DUPLICATES / SPLITS / BLANKS?

Y

(N)

AIR MONITORING PID/FID ppm: VAULT NA

BKGD NA

BREATHING ZONE NA

DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 5 /2022

TASK: 532.30

WELL ID: MW-30A

Time 1000 Static DTW (ft below reference point) 117.20	Screen Volume (SV) (gallons) 17.2 3 SV (gallons) 51.5	Weather Conditions	Initials: AMD/AMK
Casing Total Depth (ft below reference point) 564	Purging Device ded. pump Sampling Device NO pipestand	Time 1000 Temp. 85	Begin Purge 1005 End Purge 1017
Water Column (Pump Set Depth to Screen) (feet) 44	Pump: Depth (ft brp) 520 Type Grundfos Voltage 240 HP -	Skies clear	Gallons Purged 60.3 SVs Purged 3.5
Casing Capacity (Diameter 3") (gallons per foot) 0.39	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) - From -	DTW (ft brp) 119.21 Time 1015

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1005	117.20	0	0			BEGIN	PURGE				
1007	119.17	8.5	0.5	21.4	7.73	0.798	-175.6	0.29	2.12	-	Q ≈ 6 GPM
1009	119.17	17.0	1.0	21.4	7.68	0.798	-133.7	0.26	0.95	-	
1010	119.20	25.5	1.5	21.5	7.63	0.798	-100.1	0.29	2.00	-	
1012	119.21	34.0	2.0	21.6	7.56	0.797	-72.3	0.42	5.46	-	
1013	119.21	42.5	2.5	21.6	7.56	0.797	-57.9	0.43	10.59	-	
1015	119.21	~~51.5~~ 51.5	3.0	21.6	7.56	0.797	-49.5	0.43	17.32	-	Sample Collected
1017	NM	60.3	3.5			END	PURGE				

SAMPLE COLLECTION SAMPLE TIME 1015		AIR MONITORING PID/FID ppm: VAULT NA		BKGD NA		BREATHING ZONE NA		DISCHARGE WATER NA	
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)						
8260B VOCs	3	40 ml VOA							
8270 SIM 1,4 dioxane	1	1 L Amber							
8270 MOD 1,4 dioxane	1	1 L Amber							
DUPLICATES / SPLITS / BLANKS?		Y	(N)						

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 5 /2022

TASK: 532.30

WELL ID: MW-303

Time <u>1024</u> Static DTW (ft below reference point) <u>114.75</u>	Screen Volume (SV) (gallons) <u>37.4</u> 3 SV (gallons) <u>112.3</u>	Weather Conditions	Initials: <u>AMD/AMK</u>
Casing Total Depth (ft below reference point) <u>616</u>	Purging Device <u>ded pump</u> Sampling Device <u>7100 pipetstand</u>	Time <u>1025</u> Temp. <u>85</u>	Begin Purge <u>1049</u> End Purge <u>1126</u>
Water Column (Pump Set Depth to Screen) (feet) <u>96</u>	Pump: Depth (ft brp) <u>520</u> Type <u>Grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>clear</u>	Gallons Purged <u>112.4</u> SVs Purged <u>3.2</u>
Casing Capacity (Diameter <u>3</u> ") (gallons per foot) <u>0.39</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>✓</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>141.70</u> Time <u>1124</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1049	114.75	0	0			BEGIN	PURGE				
1053	136.50	18.7	0.5	21.6	7.39	1.365	-167.3	3.22	43	-	Q ≈ 46pm
1058	139.28	37.4	1.0	21.7	7.39	1.386	-166.3	3.22	40	-	
1103	140.60	56.1	1.5	21.7	7.37	1.386	-159.6	3.24	28	-	
1108	141.80	74.8	2.0	21.7	7.37	1.385	-159.5	3.21	26	-	Pump shut off at 1110. Back on at 1117
1121	139.10	93.3	2.5	21.7	7.32	1.377	-163.7	3.17	47	-	
1124	141.70	112.3	3.0	21.5	7.30	1.382	-130.2	3.04	71	-	Collect sample
1126	NM	119.4	3.2			END	PURGE				

SAMPLE COLLECTION SAMPLE TIME <u>1124</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA <u>✓</u>
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber <u>✓</u>
8270 MOD 1,4 dioxane	<u>1</u> 1 L Amber
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>	
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

AUGUST 2022

QUARTERLY GROUNDWATER MONITORING
FIELD NOTEBOOK
LARGE VOLUME MONITOR WELLS

RAYTHEON COMPANY

532.30

1901 MALVERN AVE.
FULLERTON, CALIFORNIA



HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 08/01/22

Location: FULLERTON, CA

Presented by:

A. GENERAL INTRODUCTION

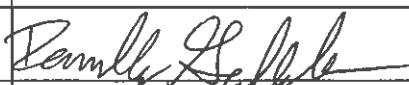
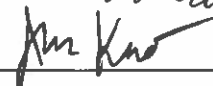
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES Go over the hospital route daily; wear traffic vests, use safety cones, and be aware of traffic whenever in or near the roadways; wear sunscreen and hydrate well; wear gloves and take appropriate precautions when handling contaminated groundwater; watch for black widow spiders in vaults. Notify your supervisor and field partner of any issues.

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Duran Sealee		HARGIS + ASSOC., INC	8/1/22
Amber Warden		H+A	8/1/22
Danielle Goldner		H+A	8/1/22
Alec Kulso		H+A	8/1/22



DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/2/22

Location: FULLERTON, CA

Presented by: DJS

A. GENERAL INTRODUCTION

1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES Go over the hospital route daily; wear traffic vests, use safety cones, and be aware of traffic whenever in or near the roadways; wear sunscreen and hydrate well; wear gloves and take appropriate precautions when handling contaminated groundwater; watch for black widow spiders in vaults. Notify your supervisor and field partner of any issues.

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Amber Warden		HARGIS + ASSOC., INC	8/2/22
Alec Kelso		H+A	8/2/22
DJS		H+A	8/2/22

INSTRUMENT CALIBRATION LOG FOR GROUNDWATER SAMPLING: Temp + pH + EC + DO + ORP

[illegible]

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: Aug 2022

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2022 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
P-07	08/ /22				142.31		111.38			
P-09	08/ /22				183.86		120.81			
MW-06	08/ /22				184.70		153.72			
MW-08	08/01/22	1316	TOC	133.66	155.91	22.27	132.04	-1.60		DJS/AMK
MW-09	08/ /22				180.10		152.05			
MW-13	08/ /22				141.84		122.74			
MW-15	08/01/22	1348	TOC	130.66	144.95	14.27	129.71	-0.97		DJS/AMK
MW-16	08/ /22				142.40		122.48			
MW-17	08/ /22				142.70		122.70			
MW-18	08/ /22				142.32		123.16			
MW-19	08/ /22				142.08		122.79			
MW-20	08/ /22				184.19		149.03			
MW-21	08/ /22				141.18		116.58		Totalizer: Pumping?	
MW-22	08/ /22				138.65		119.44			
MW-23	08/ /22				137.33		119.66			
MW-24	08/ /22				142.83		117.75			
MW-25	08/ /22				142.64		116.11			
MW-26A	08/ /22				137.04		118.93			
MW-26B	08/ /22				137.05		121.55			
MW-26C	08/ /22				137.22		118.47			

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: Aug 2022

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2022 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (+ ft)	COMMENTS	INITIALS
MW-27	08/ /22				137.16		118.03			
MW-28	08/ /22				140.77		122.22			
MW-29	08/01/22	1322	TOST	173.61	139.81	33.80	181.11	+ 7.50	Totalizer: 6307467.6 Q= 8.26	DJS/AMK
MW-30A	08/01/22	1331	TOST	116.91	129.44	12.53	111.78	- 5.13		
MW-30B	08/01/22	1214	TOST	114.20	129.39	15.19	109.80	- 4.40		
MW-31	08/01/22	1120	TOST	106.35	119.60	~~13.25~~ 10.99	101.16	- 5.19		
MW-32A	08/01/22	0945	TOST	81.86	92.88	10.99	76.20	- 5.69	DTW: 81.89, WL Change: -5.69	
MW-32B	08/01/22	0958	TOST	80.88	92.89	12.02	75.59	- 5.29	DTW: 80.89, WL Change: -5.29	
MW-32C	08/01/22	0938	TOST	71.41	92.88	21.47	67.70	- 3.71	DTW: 71.41, WL Change: -3.71	
MW-33	08/01/22	1421	TOST	73.18	83.19	10.01	67.61	- 5.57		
MW-34A	08/ /22				153.25		140.89			
MW-34B	08/ /22				153.11		136.00			
MW-34C	08/ /22				153.29		135.80			
MW-35A	08/01/22	1400	TOST	91.28	93.57	2.29	76.91	- 14.37		DJS/AMK
MW-35B	08/01/22	1402	TOST	86.81	93.56	6.75	80.13	- 6.68		
MW-35C	08/01/22	1404	TOST	82.58	93.55	10.97	76.90	- 5.68		
MW-36	08/ /22				86.65		71.50			
MW-37	08/ /22				155.60		132.53			
MW-38	08/ /22				154.90		144.54			
MW-39	08/ /22				84.25		69.73			

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: Aug 2022

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2022 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-40	08/01/22	1100	TOST	108.52	123.40	14.88	103.25	-5.27		DJS/AMK
MW-41	08/ /22				155.60		138.90			
MW-42	08/01/22	1040	TOST	74.06	82.80	8.74	68.45	-5.61		DJS/AMK
MW-43	08/01/22	1026	TOST	68.33	76.64	8.31	62.64	-5.69		↓
EW-01	08/ /22				141.07		120.83		SOUNDING TUBE TO 172.65 Totalizer: Pumping?	
EW-02	08/01/22	1250	TOST	123.74	132.97	9.23	118.97	-4.77	Totalizer: 572543 Q= 27.05	DJS/AMK

msl = Mean sea level
ft = feet

AUGUST 2022 GROUNDWATER SAMPLE PLAN

TEAM 2

QA/QC	Total VOC's	1,4-Dioxane	APROX. GALLONS	ESTIMATE D TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	AUGUST 2022 SAMPLING SCHEDULE	SAMPLE METHOD
	1882	700	308	13	MW-21	Water Table; BC	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
DUP/SPT	27	13	140	14	EW-01	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
	77	5	262	32	MW-31	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	110	1	120	34	MW-30B	Deep; BC	VOCs; 1,4-Dioxane	Ded. 240V
	63	2	63	22	MW-32B	Deep; B	VOCs; 1,4-Dioxane	Ded. Redi-flo 2
DUP/SPT	82	ND	984	76	MW-36	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded. 240V
	43	2	885	51	MW-42	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	8	ND	828	46	MW-33	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	1	ND	135	16	MW-41	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	ND	ND	66	18	MW-30A	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	ND	ND	946	45	MW-35C	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	ND	ND	937	44	MW-43	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	ND	ND	671	65	MW-32A	Deep; AB	VOCs; 1,4-Dioxane	Ded. 240V
MS/MSD	ND	ND	1,014	100	MW-32C	Water Table; C	VOCs; 1,4-Dioxane	Ded. 240V
	ND	ND	834	44	MW-39	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V

NOTE

1 = Day - # refers to the day scheduled to sample and the corresponding dedicated pipestand to use: ND=1; 0-10=2; 10 - 100=3; >100=4

A **MS** and **MSD** (3x40ml VOA and 1L amber) should be collected every day/ alternating 1,4-Dioxane methods as indicated.

1,4-Dioxane analysis method is 8270 SIM unless specified otherwise (if historical detect is > 5.0 ug/l MOD is used).

Wells with dedicated pumps should follow concentration order when possible.

MW-36 and MW-39 Gate Access Code: 3252

RB = Rinsate blank taken on non-dedicated equipment each day- will vary with schedule and should be confirmed with both teams each morning.

**AUGUST 2022 GROUNDWATER SAMPLE PLAN
TEAM 1**

QA/QC	Total VOC's	1,4-Dioxane	APPROX. GALLONS	ESTIMATED TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	AUGUST 2022 SAMPLING SCHEDULE	SAMPLE METHOD
	24	11	149	9	MW-34B	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded 240V
	ND	ND	164	19	MW-34A	Deep; A	VOCs; 1,4-Dioxane	Ded 240V
	ND	ND	96	15	MW-28	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
MS/MSD	ND	ND	201	17	MW-34C	Deep; BC	VOCs; 1,4-Dioxane	Ded 240V
	ND	ND	218	27	MW-40	Deep; B	VOCs; 1,4-Dioxane	Ded 240V
	952	69	118	39	MW-16	Water Table; B	VOCs; 1,4-Dioxane (8270 MOD)	Geosub2
	60	1	19	19	MW-08	Water Table; BC	VOCs; 1,4-Dioxane	Geosub2
	8	NA	21	34	MW-15	Water Table; AB	VOCs	Geosub2
	1	ND	153	60	MW-18	Deep; A	VOCs; 1,4-Dioxane	Geosub2
	2	ND	84	52	MW-20	Water Table; D	VOCs; 1,4-Dioxane	Geosub2
	4	ND	20.1	20	MW-09	Water Table; C	VOCs; 1,4-Dioxane	Geosub2
	ND	ND	171	89	MW-26C	Deep; B	VOCs; 1,4-Dioxane	Geosub2

NOTES

A **MS** and **MSD** (3x40ml VOA and 1L amber) should be collected every day/ alternating 1,4-Dioxane methods as indicated.

1,4-Dioxane analysis method is 8270 SIM unless specified otherwise (if historical detect is > 5.0 ug/l MOD is used).

1 = Day - # refers to the day scheduled to sample and the corresponding dedicated pipestand to use: ND=1; 0-10=2; 10 - 100=3; >100=4

Wells with dedicated pumps should follow concentration order when possible.

MW-36 and MW-39 Gate Access Code: 3252

RB = Rinsate blank taken on non-dedicated equipment each day- will vary with schedule and should be confirmed with both

GROUNDWATER SAMPLING INFORMATION

DATE: 08/02/2022

TASK: 532.30

WELL ID: MW-35C

Time <u>1037</u> Static DTW (ft below reference point) <u>83.05</u>	Screen Volume (SV) (gallons) <u>288</u> 3 SV (gallons) <u>864</u>	Weather Conditions	Initials: <u>OTS/SOG</u>
Casing Total Depth (ft below reference point) <u>1040</u>	Purging Device <u>det. pur</u> Sampling Device <u>NDPS</u>	Time <u>1039</u> Temp. <u>78°F</u>	Begin Purge <u>1040</u> End Purge <u>1134</u>
Water Column (Pump Set Depth to Screen) (feet) <u>480</u>	Pump: Depth (ft brp) <u>560</u> Type <u>grinder</u> Voltage <u>240</u> HP <u>1</u>	Skies <u>clear</u>	Gallons Purged <u>887</u> SVs Purged <u>3.1</u>
Casing Capacity (Diameter 4" (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>✓</u>	Wind (mph) _____ From _____	DTW (ft brp) <u>93.72</u> Time <u>1132</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1040	83.05	0	0	~ Begin Purge ~							
1056	93.65	144	0.5	20.2	7.57	0.764	-193.9	1.67	26.44	-	Q220 Gdn
1103	93.67	288	1.0	20.5	7.55	0.773	-90.6	2.38	73.31	-	
1111	93.20	432	1.5	20.5	7.52	0.790	-137.7	2.87	105.81	-	
1118	93.57	576	2.0	20.5	7.53	0.791	-89.3	2.83	106.7	-	
1126	93.57	720	2.5	20.5	7.53	0.790	-78.9	2.63	4.18	-	
1132	93.72	864	3.0	20.5	7.53	0.791	-26.1	2.84	6.75	-	COLLECT SAMPLE
1134	NM	887	3.1	END PURGE							

SAMPLE COLLECTION SAMPLE TIME 1135

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>3</u>	40 ml VOA <u>Y</u>
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber <u>X</u>
8270 MOD 1,4 dioxane		1 L Amber

DUPLICATES / SPLITS / BLANKS? Y (N)
If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/02/2022

TASK: 532.30

WELL ID: MW-33

Time 1345 Static DTW (ft below reference point) 73.14	Screen Volume (SV) (gallons) 276 3 SV (gallons) 828	Weather Conditions	Initials: DJS, SOG
Casing Total Depth (ft below reference point) 1020	Purging Device 2nd Pump Sampling Device 0-10 PS	Time 1345 Temp. 85°F	Begin Purge 1348 End Purge 1437
Water Column (Pump Set Depth to Screen) (feet) 460	Pump: Depth (ft brp) 560 Type Grundfos Voltage 240 HP -	Skies clear	Gallons Purged 891 SVs Purged 3.2
Casing Capacity (Diameter 1" (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) - From -	DTW (ft brp) 75.95 Time 1434

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1348	73.14	0	0							-	Q2 20 GPM
1355	75.71	134	0.5	20.6	7.61	0.696	-13.0	0.22	4.02	-	
1403	75.72	276	1.0	20.7	7.61	0.684	-42.8	0.01	3.10	-	
1410	75.81	414	1.5	20.9	7.56	0.704	-39.0	0.17	4.61	-	
1418	75.92	552	2.0	20.9	7.55	0.703	-72.6	0.16	10.60	-	
1425	75.92	640	2.5	20.9	7.54	0.703	-74.0	0.15	5.73	-	
1434	75.95	828	3.0	20.9	7.5	0.703	-75.1	0.14	4.28	-	COLLECT SAMPLE
1437	NM	891	3.2								END PURGE

SAMPLE COLLECTION SAMPLE TIME 1440	
ANALYSIS	QUANTITY TYPE
8260B VOCs	39 40 ml VOA X
8270 SIM 1,4 dioxane	3 1 L Amber X
8270 MOD 1,4 dioxane	1 L Amber
DUPLICATES / SPLITS / BLANKS? X N	
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
Collected field duplicate MW-3300 @ 1545			
Collected split sample MW-333 @ 1440			

GROUNDWATER SAMPLING INFORMATION

DATE: 08/02/2022

TASK: 532.30

WELL ID: MW-34C

Time 1543 Static DTW (ft below reference point) 146.49	Screen Volume (SV) (gallons) 57.6 3 SV (gallons) 173	Weather Conditions	Initials: DJJ / SDG
Casing Total Depth (ft below reference point) 576	Purging Device Jet Pump Sampling Device NDPS	Time 1546 Temp. 90°F	Begin Purge 1548 End Purge 1559
Water Column (Pump Set Depth to Screen) (feet) 96	Pump: Depth (ft brp) 480 Type grout Voltage 240HP	Skies partly cloudy	Gallons Purged 187 SVs Purged 3.2
Casing Capacity (Diameter 1.5") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) — From —	DTW (ft brp) 167.73 Time 1558

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1548	146.49	0	0	~	8.0	Purge	—	—	—	—	
1550	165.31	28.8	0.5	21.7	7.78	0.657	-151.3	0.12	30.8	—	Q 12 GPM
1551	166.60	57.7	1.0	21.7	7.80	0.657	-149.3	0.07	37.30	—	
1553	167.01	86.5	1.5	21.8	7.80	0.653	-146.6	0.03	38.18	—	
1554	167.05	115.3	2.0	21.8	7.77	0.671	-144.3	0.00	26.37	—	
1556	167.42	144.1	2.5	21.8	7.73	0.697	-143.3	0.00	10.36	—	
1558	167.79	173	3.0	21.8	7.68	0.641	-145.9	0.00	8.05	—	COLLECT SAMPLE
1559	NM	187	3.2	END PURGE				—	—	—	

SAMPLE COLLECTION SAMPLE TIME 1605	
ANALYSIS	QUANTITY TYPE
8260B VOCs	39 40 ml VOA X
8270 SIM 1,4 dioxane	3 1 L Amber X
8270 MOD 1,4 dioxane	1 L Amber
DUPLICATES / SPLITS / BLANKS? Y (N)	
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
MS/MSD collected			

GROUNDWATER SAMPLING INFORMATION

DATE: 08/03/2022

TASK: 532.30

WELL ID: MW-42

Time <u>0919</u> Static DTW (ft below reference point)	<u>74.56</u>	Screen Volume (SV) (gallons) <u>295</u> 3 SV (gallons) <u>885</u>	Weather Conditions	Initials: <u>DJS/ANW</u>
Casing Total Depth (ft below reference point)	<u>1052</u>	Purging Device <u>ded pump</u> Sampling Device <u>ND pipe</u>	Time <u>0916</u> Temp. <u>75°F</u>	Begin Purge <u>0926</u> End Purge <u>1010</u>
Water Column (Pump Set Depth to Screen) (feet)	<u>492</u>	Pump: Depth (ft brp) <u>560</u> Type <u>grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>partly cloudy</u>	Gallons Purged <u>900</u> SVs Purged <u>3.1</u>
Casing Capacity (Diameter 4") (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>83.92</u> Time <u>1008</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0926	74.56	0	0	— BEGIN PURGE —						—	
0939	83.60	147.5	0.5	20.06	8.08	0.651	-188.4	0.5	2.90	—	Q ≈ 20 GPM
0946	83.89	295	1.0	21.1	8.11	0.660	-187.9	0.03	23.61	—	
0949	83.89	442.5	1.5	22.5 21.9	8.13 8.13	0.658 0.662	-180.3 -183.9	0.04 0.06	50.17	—	
0955	83.91	590	2.0	21.3	8.14	0.657	-188.9	0.07	113.30	—	
1001	83.92	737.5	2.5	21.3	8.14	0.657	-186.6	0.08	2.45	—	
1008	83.92	885	3.0	21.3	8.14	0.657	-182.1	0.09	2.16	—	COLLECT SAMPLE
1010	NA	900	3.1	~ END PURGE ~						—	

SAMPLE COLLECTION SAMPLE TIME <u>1010</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA <u>X</u>
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber <u>X</u>
8270 MOD 1,4 dioxane	<u>1</u> 1 L Amber
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
 NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/03/2022

TASK: 532.30

WELL ID: MW-32A

Time <u>1103</u> Static DTW (ft below reference point) <u>82.32</u>	Screen Volume (SV) (gallons) <u>207</u> 3 SV (gallons) <u>621</u>	Weather Conditions	Initials: <u>DJS/ANW</u>
Casing Total Depth (ft below reference point) <u>905</u>	Purging Device <u>ded. pump</u> Sampling Device <u>ded. pipet stand</u>	Time <u>1100</u> Temp. <u>79°F</u>	Begin Purge <u>1107</u> End Purge <u>1158</u>
Water Column (Pump Set Depth to Screen) (feet) <u>345</u>	Pump: Depth (ft brp) <u>560</u> Type <u>grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>partly cloudy</u>	Gallons Purged <u>641</u> SVs Purged <u>3.1</u>
Casing Capacity (Diameter <u>4"</u> (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow <u>-</u> Fast <u>X</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>84.35</u> Time <u>1156</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1107	82.32	0	0								
1114	84.40	103.5	0.5	21.3	7.55	1.042	14.3	0.98	5.67	-	Q ≈ 10 GPM
1125	84.40	207	1.0	21.0	7.53	1.041	-17.6	1.16	44.60	-	
1133	84.20	310.5	1.5	~~23.4~~ 25.6	7.55	1.039	-7.7	1.33	32.60	-	
1140	84.20	414	2.0	21.2	7.54	1.036	-0.6	1.35	13.60	-	
1147	84.30	517.5	2.5	21.2	7.54	1.035	9.4	1.35	10.34	-	
1156	84.35	621	3.0	21.3	7.54	1.036	~~10.1~~ 1.36	1.36	11.25	-	COLLECT SAMPLE
1158	NM	641	3.1								

SAMPLE COLLECTION SAMPLE TIME 1158

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>3</u>	40 ml VOA <u>X</u>
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber <u>X</u>
8270 MOD 1,4 dioxane		1 L Amber

DUPLICATES / SPLITS / BLANKS? Y (N)

If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION
DATE: 08/ 3 /2022
TASK: 532.30
WELL ID: MW-32C

Time <u>1325</u> Static DTW (ft below reference point)	71.76	Screen Volume (SV) (gallons) <u>318</u> 3 SV (gallons) <u>954</u>	Weather Conditions Time <u>1320</u> Temp. <u>86°F</u> Skies <u>partly cloudy</u> Wind (mph) <u>-</u> From <u>-</u>
Casing Total Depth (ft below reference point)	1090	Purging Device <u>ded pump.</u> Sampling Device <u>ND pipetand</u>	Initials: <u>DJS/ANW</u>
Water Column (Pump Set Depth to Screen) (feet)	530	Pump: Depth (ft brp) <u>560</u> Type <u>groundfor</u> Voltage <u>240</u> HP <u>-</u>	Begin Purge <u>1325</u> End Purge <u>1500</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Gallons Purged <u>990</u> SVs Purged <u>3.1</u> <u>1325</u>
			DTW (ft brp) <u>471.76</u> Time <u>1457</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1325	71.76	0	0	—	—	—	—	—	—	—	
											BEGIN PURGE
1338	NM	159	0.5	21.0	8.17	0.536	-219.7	0.05	2.46	-	Q ≈ 12 GPM
1352	NM	318	1.0	21.3	8.27	0.536	-224.1	0.08	2.45	-	Transducer in sounding tube blocking WL measurement
1407	NM	477	1.5	21.5	8.27	0.535	-185.6	0.09	5.45	-	
1424	NM	636	2.0	21.6	8.28	0.535	-176.8	0.10	10.86	-	
1438	NM	745	2.5	21.5	8.26	0.535	-185.2	0.11	11.71	-	
1457	NM	954	3.0	21.5	8.27	0.534	-180.2	0.12	14.45	-	COLLECT SAMPLE
1500	NM	990	3.1							-	End Purge

SAMPLE COLLECTION SAMPLE TIME <u>1500</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>39</u> 40 ml VOA <u>X</u>
8270 SIM 1,4 dioxane	<u>X3</u> 1 L Amber <u>X</u>
8270 MOD 1,4 dioxane	1 L Amber
DUPLICATES / SPLITS / BLANKS? If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.) <u>collected MS/MSD</u>			

GROUNDWATER SAMPLING INFORMATION

DATE: 08/04/2022

TASK: 532.30

WELL ID: MW-39

Time 08:49 Static DTW (ft below reference point) 75.77	Screen Volume (SV) (gallons) 271 3 SV (gallons) 814	Weather Conditions	Initials: DJS, ANW
Casing Total Depth (ft below reference point) 1012	Purging Device ded pump Sampling Device ND PS	Time 08:50 Temp. 72°	Begin Purge 8:59 End Purge 9:57
Water Column (Pump Set Depth to Screen) (feet) 452	Pump: Depth (ft brp) 560 Type Grundfos Voltage 240 HP -	Skies Clear/Partly Cloudy	Gallons Purged 871 SVs Purged 3.1
Casing Capacity (Diameter 4" (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast ✓	Wind (mph) 3 From S-SE	DTW (ft brp) 91.15 Time 09:57

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
08:49	75.77	0	0	Begin Purge							Q ≈ 20 GPM
09:03	90.78	135.5	0.5	21.6	8.17	0.440	-219.2	0.05	2.20	-	
09:10	90.85	271	1.0	22.1	8.30	0.433	-243.9	0.01	2.47	-	
09:18	91.15	406	1.5	22.5	8.16	0.439	-199.1	0.04	2.17	-	
09:25	90.95	542	2.0	22.3	8.17	0.440	-198.8	0.06	2.03	-	
09:30	91.15	677.5	2.5	22.4	8.20	0.440	-207.2	0.07	2.16	-	
09:56	91.15	814	3.0	22.4	8.20	0.440	-198.9	0.09	3.29	-	COLLECT SAMPLE * bottom two feet, cut of three last to stop purge
09:57	NA	871	3.1	End Purge							

SAMPLE COLLECTION SAMPLE TIME 09:57			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA		
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)		
8260B VOCs	3	40 ml VOA ✓			
8270 SIM 1,4 dioxane	1	1 L Amber ✓			
8270 MOD 1,4 dioxane		1 L Amber			
DUPLICATES / SPLITS / BLANKS? Y (N)					

GROUNDWATER SAMPLING INFORMATION

DATE: 08/04/2022

TASK: 532.30

WELL ID: MW-36

Time 1018 Static DTW (ft below reference point) 77.53	Screen Volume (SV) (gallons) 320 3 SV (gallons) 961	Weather Conditions	Initials: DJS/ANW
Casing Total Depth (ft below reference point) 894.994	Purging Device ded pump Sampling Device 100 PS	Time 1015 Temp 75	Begin Purge 1020 End Purge 1148
Water Column (Pump Set Depth to Screen) (feet) 534	Pump: Depth (ft brp) 460 Type Grundfos Voltage 240 HP -	Skies Partly Cloudy	Gallons Purged 984 SVs Purged 3.1
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) 1 From N	DTW (ft brp) 81.41 Time 1135

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1020	77.53	0	0	~	Begin Purge	~					
1031	81.09	160	0.5	21.0	7.37	1.220	-32.9	0.05	68.59	-	Q ≈ 13 GPM
1044	81.20	320	1.0	21.6	7.58	0.876	-107.2	0.08	6.06	-	
1057	81.28	480	1.5	21.6	7.43	1.156	-89.6	0.08	17.68	-	
1111	81.41	640	2.0	21.7	7.39	1.219	-116.3	0.08	2.29	-	
1123	81.41	800	2.5	21.7	7.37	1.243	-110.4	0.08	2.47	-	
1135	81.41	961	3.0	21.7	7.36	1.258	-83.2	0.08	2.51	-	COLLECT SAMPLE
1148	NM	984	3.1	—	END PURGE	—	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME 1148

ANALYSIS	QUANTITY	TYPE
8260B VOCs	40 ml VOA	X
8270 SIM 1,4 dioxane	1 L Amber	
8270 MOD 1,4 dioxane	1 L Amber	X

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

Collected field duplicate/split sample MW-3600/MW-36 @ 12:30/11:48 respectively.

DUPLICATES/SPLITS/BLANKS?

(Y)

N

If yes, complete appropriate forms.

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 4 /2022

TASK: 532.30

WELL ID: MW-34A

Time <u>1343</u> Static DTW (ft below reference point) <u>147.85</u>	Screen Volume (SV) (gallons) <u>48</u> 3 SV (gallons) <u>144</u>	Weather Conditions	Initials: <u>DJS/ANW</u>
Casing Total Depth (ft below reference point) <u>280</u>	Purging Device <u>ded pump</u> Sampling Device <u>WD pipestand</u>	Time <u>1342</u> Temp. <u>84°F</u>	Begin Purge <u>1347</u> End Purge <u>1359</u>
Water Column (Pump Set Depth to Screen) (feet) <u>80</u>	Pump: Depth (ft brp) <u>200</u> Type <u>grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>mostly cloudy</u>	Gallons Purged <u>201</u> SVs Purged <u>4.1</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>5</u> From <u>S</u>	DTW (ft brp) <u>151.15</u> Time <u>1358</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1347	147.85	0	0								BEGIN PURGE
1350	150.73	24	0.5	21.9	7.06	1.433	-64.3	3.44	~~95.02~~ 95.02		Q ≈ 16 GPM
1352	151.08	48	1.0	21.3	7.13	1.471	-16.3	4.40	92.01	-	
1354	151.08	72	1.5	21.3	7.14	1.475	-10.5	4.43	109.03	-	
1355	151.10	96	2.0	21.3	7.14	1.472	5.1	4.43	69.08	-	
1356	151.12	120	2.5	21.3	7.14	1.474	13.5	4.44	62.06	-	
1358	151.15	144	3.0	21.3	7.14	1.474	13.5	19.1	22.41	-	COLLECT SAMPLE
1359	NM	201	4.1								END PURGE

SAMPLE COLLECTION SAMPLE TIME 1358

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>3</u>	40 ml VOA <u>X</u>
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber <u>X</u>
8270 MOD 1,4 dioxane		1 L Amber

DUPLICATES / SPLITS / BLANKS? Y (N)

If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 4 /2022

TASK: 532.30

WELL ID: MW-34B

Time <u>1410</u> Static DTW (ft below reference point) <u>141.15</u>	Screen Volume (SV) (gallons) <u>46</u> 3 SV (gallons) <u>138</u>	Weather Conditions	Initials: <u>DJS/ANW</u>
Casing Total Depth (ft below reference point) <u>536</u>	Purging Device <u>ded. pump</u> Sampling Device <u>10-100 pipestand</u>	Time <u>1405</u> Temp. <u>84°</u>	Begin Purge <u>1413</u> End Purge <u>1423</u>
Water Column (Pump Set Depth to Screen) (feet) <u>76</u>	Pump: Depth (ft brp) <u>460</u> Type <u>grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>mostly cloudy,</u> <u>light rain/sprinkles</u>	Gallons Purged <u>179</u> SVs Purged <u>3.9</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>7</u> From <u>S</u>	DTW (ft brp) <u>144.36</u> Time <u>1421</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1413	141.15	0	0	—	—	BEGIN	PURGE	—	—	—	
1414	143.81	23	0.5	22.7	7.33	0.913	40.0	2.00	7.94	—	Q ≈ 18 GPM
1416	143.72	46	1.0	23.3	7.32	0.903	-30.8	1.76	33.12	—	
1417	144.31	69	1.5	22.0	7.39	0.928	-22.5	1.51	53.85	—	
1418	144.35	92	2.0	22.1	7.35	0.929	-2.8	1.50	20.39	—	
1420	144.35	115	2.5	22.0	7.35	0.929	8.6	1.49	37.58	—	
1421	144.36	138	3.0	22.0	7.34	0.929	16.5	1.49	22.50	—	COLLECT SAMPLE
1423	~~144.36~~ NM	179	3.9	—	—	END PURGE	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME <u>1423</u>	AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
ANALYSIS QUANTITY TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs <u>3</u> 40 ml VOA <u>X</u>				
8270 SIM 1.4 dioxane <u>1</u> 1 L Amber <u>X</u>				
8270 MOD 1.4 dioxane <u>1</u> 1 L Amber <u>X</u>				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>				
If yes, complete appropriate forms.				

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 4 /2022

TASK: 532.30

WELL ID: MW-41

Time <u>1456</u> Static DTW (ft below reference point)	<u>133.75</u>	Screen Volume (SV) (gallons) <u>39</u> 3 SV (gallons) <u>117</u>	Weather Conditions	Initials: <u>DJS/ANW</u>
Casing Total Depth (ft below reference point)	<u>425</u>	Purging Device <u>ded. pump</u> Sampling Device <u>0-10 P.S.</u>	Time <u>1456</u> Temp. <u>84°F</u>	Begin Purge <u>1503</u> End Purge <u>1518</u>
Water Column (Pump Set Depth to Screen) (feet)	<u>65</u>	Pump: Depth (ft brp) <u>360</u> Type <u>grundfos</u> Voltage <u>240 HP -</u>	Skies <u>overcast</u>	Gallons Purged <u>134</u> SVs Purged <u>3.4</u>
Casing Capacity (Diameter <u>4"</u> (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>8</u> From <u>S</u>	DTW (ft brp) <u>152.64</u> Time <u>1515</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	... FIELD PARAMETERS ...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1503	133.75	0	0	BEGIN PURGE							
1505	152.58	19.5	0.5	21.7	6.79	2.178	-31.7	2.52	10.66	-	Q ≈ 10 GPM
1507	152.60	39	1.0	21.8	6.80	2.183	-17.6	4.13	30.08	-	
1509	152.58	58.5	1.5	21.9	6.80	2.186	48.7	4.19	41.29	-	
1511	152.60	78	2.0	21.8	6.80	2.188	48.9	4.26	34.20	-	
1513	152.64	97.5	2.5	21.9	6.81	2.188	ANW 71.1	4.25	24.09	-	
1515	152.64	117	3.0	21.9	6.81	2.187	72.2	4.31	31.59	-	COLLECT SAMPLE
1518	NM	134	3.4	END PURGE							

SAMPLE COLLECTION SAMPLE TIME <u>1516</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA <u>X</u>
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber <u>X</u>
8270 MOD 1,4 dioxane	<u> </u> 1 L Amber <u> </u>
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u> </u>	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
 NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 4 /2022

TASK: 532.30

WELL ID: MW-43

Time <u>0840</u> Static DTW (ft below reference point) <u>68.81</u>	Screen Volume (SV) (gallons) <u>291.6</u> 3 SV (gallons) <u>874.8</u>	Weather Conditions	Initials: <u>ANW/BJJ</u>
Casing Total Depth (ft below reference point) <u>1046</u>	Purging Device <u>ded pump</u> Sampling Device <u>NO pipe stand</u>	Time <u>0839</u> Temp. <u>73°F</u>	Begin Purge <u>0843</u> End Purge <u>0925</u>
Water Column (Pump Set Depth to Screen) (feet) <u>486</u>	Pump: Depth (ft brp) <u>560</u> Type <u>grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>partly cloudy</u>	Gallons Purged <u>890</u> SVs Purged <u>3.1</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>1</u> From <u>E</u>	DTW (ft brp) <u>76.06</u> Time <u>0920</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0843	68.81	0	0	—	—	BEGIN	PURGE	—	—	—	
0849	75.61	145.8	0.5	21.7	9.94	0.571	-165.9	3.01	10.68	—	Q ≈ 25 GPM
0854	76.03	291.6	1.0	21.6	8.73	0.498	-157.8	2.06	3.47	—	
0900	76.04	437	1.5	21.7	8.31	0.491	-119.9	2.83	2.00	—	
ANW 0906 0914	76.05	583	2.0	21.9	8.22	0.491	-70.4	4.40	2.75	—	
0914	76.06	729	2.5	22.0	8.14	0.490	-47.2	2.25	1.40	—	
0920	76.06	874	3.0	22.0	8.21	0.489	-42.0	4.88	1.27	—	COLLECT SAMPLE
0925	NM	890	3.1	—	—	END	PURGE	—	—	—	

SAMPLE COLLECTION SAMPLE TIME <u>0922</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA <u>X</u>
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber <u>X</u>
8270 MOD 1,4 dioxane	<u> </u> 1 L Amber <u> </u>
DUPLICATES / SPLITS / BLANKS? <u>Y</u> N	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
 NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION
DATE: 08/ 5 /2022
TASK: 532.30
WELL ID: MW-31

Time <u>1034</u> Static DTW (ft below reference point) <u>107.10</u>	Screen Volume (SV) (gallons) <u>81</u> 3 SV (gallons) <u>243</u>	Weather Conditions Time <u>1017</u> Temp. <u>79°F</u> Skies <u>partly cloudy</u> Wind (mph) <u>1</u> From <u>WSW</u>	Initials: <u>DJS/ANW</u> Begin Purge <u>1039</u> End Purge <u>1107</u> Gallons Purged <u>251</u> SVs Purged <u>3.1</u> DTW (ft brp) <u>111.72</u> Time <u>1105</u>
Casing Total Depth (ft below reference point) <u>996</u>	Purging Device <u>ded. pump</u> Sampling Device <u>10-100 pipestand</u>		
Water Column (Pump Set Depth to Screen) (feet) <u>54</u>	Pump: Depth (ft brp) <u>942</u> Type <u>grundfos</u> Voltage <u>240</u> HP <u>1</u>		
Casing Capacity (Diameter <u>6"</u>) (gallons per foot) <u>1.5</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>		

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1039	107.10	0	0								
											BEGIN PURGE
1043	111.65	40.6	0.5	23.1	7.65	1.104	74.2	3.44	7.41	-	Q ≈ 10 GPM
1047	111.71	81	1.0	21.9	7.70	1.472	71.6	3.64	43.85	-	
1052	111.73	121.5	1.5	22.1	7.83	1.290	22.6	2.78	30.10	-	
1057	111.74	162	2.0	21.8	7.73	1.205	25.9	2.94	19.12	-	
1101	111.68	202.5	2.5	21.8	7.71	1.166	36.3	3.61	11.15	-	
1105	111.72	243	3.0	21.8	7.83	1.140	48.6	4.90	9.39	-	COLLECT SAMPLE
1107	NM	251	3.1								END PURGE

SAMPLE COLLECTION SAMPLE TIME <u>1105</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA <u>X</u>
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber <u>X</u>
8270 MOD 1,4 dioxane	<u> </u> 1 L Amber <u> </u>
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>	
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
 NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

APPENDIX B
LABORATORY ANALYTICAL REPORTS

GROUNDWATER SAMPLING ANALYTICAL RESULTS

August 15, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

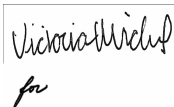
Re: ATL Work Order Number : 2202071

Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on August 03, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,



Victoria Michel, Project Assistant
Victoria.Michel@atlglobal.com

Authorized to Release on 08/15/22 14:43 on Behalf of



Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-080222A	2202071-01	Water	8/02/22 8:30	8/03/22 17:15
MW-35C	2202071-02	Water	8/02/22 11:35	8/03/22 17:15
MW-33	2202071-03	Water	8/02/22 14:40	8/03/22 17:15
MW-3300	2202071-04	Water	8/02/22 15:45	8/03/22 17:15
MW-34C	2202071-05	Water	8/02/22 16:05	8/03/22 17:15
MW-16	2202071-09	Water	8/03/22 16:30	8/03/22 17:15
MW-26C	2202071-10	Water	8/03/22 11:32	8/03/22 17:15
MW-09	2202071-11	Water	8/03/22 15:09	8/03/22 17:15
MW-08	2202071-12	Water	8/03/22 16:17	8/03/22 17:15
MW-32B	2202071-13	Water	8/03/22 10:01	8/03/22 17:15
MW-15	2202071-14	Water	8/03/22 13:05	8/03/22 17:15
MW-21	2202071-15	Water	8/03/22 14:00	8/03/22 17:15
EW-01	2202071-16	Water	8/03/22 14:21	8/03/22 17:15
EW-0100	2202071-17	Water	8/03/22 14:23	8/03/22 17:15
RB-080322	2202071-18	Water	8/03/22 14:50	8/03/22 17:15



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
L3	Laboratory control sample outside in-house established limits but within method criteria.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: TB-080222A

Lab ID: 2202071-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:26	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 14:26	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 14:26	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 14:26	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:26	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 14:26	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 14:26	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 14:26	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 14:26	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 14:26	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 14:26	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:26	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 14:26	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:26	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 14:26	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 14:26	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 14:26	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 14:26	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:26	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 14:26	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:26	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 14:26	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 14:26	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 14:26	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 14:26	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 14:26	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: TB-080222A

Lab ID: 2202071-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 14:26	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:26	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 14:26	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 14:26	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:26	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:26	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 14:26	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:26	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:26	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:26	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 14:26	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:26	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:26	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 14:26	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:26	
Surrogate: 1,2-Dichloroethane-d4	102 %		64 - 155		B2H0849	08/08/2022	08/08/22 14:26	
Surrogate: 4-Bromofluorobenzene	95.9 %		73 - 124		B2H0849	08/08/2022	08/08/22 14:26	
Surrogate: Dibromofluoromethane	102 %		78 - 129		B2H0849	08/08/2022	08/08/22 14:26	
Surrogate: Toluene-d8	100 %		84 - 117		B2H0849	08/08/2022	08/08/22 14:26	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-35C

Lab ID: 2202071-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:44	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 15:44	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 15:44	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 15:44	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:44	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 15:44	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 15:44	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 15:44	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 15:44	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 15:44	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 15:44	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:44	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 15:44	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:44	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 15:44	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 15:44	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 15:44	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 15:44	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:44	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 15:44	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:44	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 15:44	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 15:44	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 15:44	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 15:44	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 15:44	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-35C

Lab ID: 2202071-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 15:44	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:44	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 15:44	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 15:44	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:44	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:44	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 15:44	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:44	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:44	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:44	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 15:44	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:44	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:44	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 15:44	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:44	
Surrogate: 1,2-Dichloroethane-d4	103 %	64 - 155			B2H0849	08/08/2022	08/08/22 15:44	
Surrogate: 4-Bromofluorobenzene	97.4 %	73 - 124			B2H0849	08/08/2022	08/08/22 15:44	
Surrogate: Dibromofluoromethane	102 %	78 - 129			B2H0849	08/08/2022	08/08/22 15:44	
Surrogate: Toluene-d8	101 %	84 - 117			B2H0849	08/08/2022	08/08/22 15:44	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 18:15	
Surrogate: 1,2-Dichlorobenzene-d4	109 %	13 - 99			B2H0851	08/08/2022	08/11/22 18:15	S12
Surrogate: 2-Fluorobiphenyl	94.4 %	8 - 111			B2H0851	08/08/2022	08/11/22 18:15	
Surrogate: 4-Terphenyl-d14	96.4 %	12 - 113			B2H0851	08/08/2022	08/11/22 18:15	
Surrogate: Nitrobenzene-d5	115 %	15 - 121			B2H0851	08/08/2022	08/11/22 18:15	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-33

Lab ID: 2202071-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 21:20	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 21:20	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 21:20	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 21:20	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 21:20	
1,1-Dichloroethene	6.3	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 21:20	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 21:20	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 21:20	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 21:20	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 21:20	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 21:20	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 21:20	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 21:20	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 21:20	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 21:20	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 21:20	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 21:20	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 21:20	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 21:20	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 21:20	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 21:20	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 21:20	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 21:20	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 21:20	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 21:20	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 21:20	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-33

Lab ID: 2202071-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 21:20	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 21:20	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 21:20	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 21:20	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 21:20	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 21:20	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 21:20	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 21:20	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 21:20	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 21:20	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 21:20	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 21:20	
Trichloroethene	0.46	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 21:20	J
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 21:20	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 21:20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>64 - 155</i>			B2H0849	08/08/2022	08/08/22 21:20	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.1 %</i>	<i>73 - 124</i>			B2H0849	08/08/2022	08/08/22 21:20	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>78 - 129</i>			B2H0849	08/08/2022	08/08/22 21:20	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>84 - 117</i>			B2H0849	08/08/2022	08/08/22 21:20	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 18:46	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>107 %</i>	<i>13 - 99</i>			B2H0851	08/08/2022	08/11/22 18:46	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>92.4 %</i>	<i>8 - 111</i>			B2H0851	08/08/2022	08/11/22 18:46	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>98.7 %</i>	<i>12 - 113</i>			B2H0851	08/08/2022	08/11/22 18:46	
<i>Surrogate: Nitrobenzene-d5</i>	<i>105 %</i>	<i>15 - 121</i>			B2H0851	08/08/2022	08/11/22 18:46	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-3300

Lab ID: 2202071-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:06	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 15:06	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 15:06	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 15:06	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:06	
1,1-Dichloroethene	5.7	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 15:06	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 15:06	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 15:06	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 15:06	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 15:06	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 15:06	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:06	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 15:06	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:06	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 15:06	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 15:06	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 15:06	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 15:06	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:06	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 15:06	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:06	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 15:06	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 15:06	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 15:06	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 15:06	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 15:06	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-3300

Lab ID: 2202071-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 15:06	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:06	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 15:06	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 15:06	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:06	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:06	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 15:06	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:06	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:06	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:06	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 15:06	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:06	
Trichloroethene	0.63	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:06	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 15:06	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:06	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>	<i>64 - 155</i>			B2H0857	08/09/2022	08/09/22 15:06	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.3 %</i>	<i>73 - 124</i>			B2H0857	08/09/2022	08/09/22 15:06	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>78 - 129</i>			B2H0857	08/09/2022	08/09/22 15:06	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>84 - 117</i>			B2H0857	08/09/2022	08/09/22 15:06	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 19:18	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>102 %</i>	<i>13 - 99</i>			B2H0851	08/08/2022	08/11/22 19:18	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>95.3 %</i>	<i>8 - 111</i>			B2H0851	08/08/2022	08/11/22 19:18	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>101 %</i>	<i>12 - 113</i>			B2H0851	08/08/2022	08/11/22 19:18	
<i>Surrogate: Nitrobenzene-d5</i>	<i>106 %</i>	<i>15 - 121</i>			B2H0851	08/08/2022	08/11/22 19:18	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-34C

Lab ID: 2202071-05

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:18	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 15:18	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 15:18	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 15:18	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:18	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 15:18	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 15:18	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 15:18	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 15:18	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 15:18	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 15:18	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:18	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 15:18	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:18	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 15:18	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 15:18	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 15:18	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 15:18	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:18	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 15:18	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:18	
Chloromethane	0.13	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 15:18	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 15:18	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 15:18	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 15:18	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 15:18	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-34C

Lab ID: 2202071-05

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 15:18	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:18	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 15:18	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 15:18	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 15:18	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:18	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 15:18	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:18	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:18	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:18	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 15:18	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 15:18	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 15:18	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 15:18	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 15:18	
Surrogate: 1,2-Dichloroethane-d4	103 %	64 - 155			B2H0849	08/08/2022	08/08/22 15:18	
Surrogate: 4-Bromofluorobenzene	97.0 %	73 - 124			B2H0849	08/08/2022	08/08/22 15:18	
Surrogate: Dibromofluoromethane	103 %	78 - 129			B2H0849	08/08/2022	08/08/22 15:18	
Surrogate: Toluene-d8	98.9 %	84 - 117			B2H0849	08/08/2022	08/08/22 15:18	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 19:49	
Surrogate: 1,2-Dichlorobenzene-d4	109 %	13 - 99			B2H0851	08/08/2022	08/11/22 19:49	S12
Surrogate: 2-Fluorobiphenyl	95.3 %	8 - 111			B2H0851	08/08/2022	08/11/22 19:49	
Surrogate: 4-Terphenyl-d14	101 %	12 - 113			B2H0851	08/08/2022	08/11/22 19:49	
Surrogate: Nitrobenzene-d5	113 %	15 - 121			B2H0851	08/08/2022	08/11/22 19:49	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-16

Lab ID: 2202071-09

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:32	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 15:32	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 15:32	
1,1,2-Trichloroethane	1.1	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 15:32	
1,1-Dichloroethane	8.1	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:32	
1,1-Dichloroethene	1600	10	2.6	20	B2H0857	08/09/2022	08/09/22 15:58	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2-Dichloroethane	0.79	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 15:32	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 15:32	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 15:32	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 15:32	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 15:32	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 15:32	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:32	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 15:32	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:32	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 15:32	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 15:32	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 15:32	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 15:32	
Carbon tetrachloride	0.52	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:32	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 15:32	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:32	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 15:32	
cis-1,2-Dichloroethene	0.53	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 15:32	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 15:32	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 15:32	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 15:32	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-16

Lab ID: 2202071-09

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 15:32	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:32	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 15:32	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 15:32	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 15:32	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:32	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 15:32	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:32	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:32	
Tetrachloroethene	1.5	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:32	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 15:32	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 15:32	
Trichloroethene	7.5	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 15:32	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 15:32	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 15:32	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>107 %</i>		<i>64 - 155</i>		B2H0857	08/09/2022	<i>08/09/22 15:32</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>		<i>64 - 155</i>		B2H0857	08/09/2022	<i>08/09/22 15:58</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.1 %</i>		<i>73 - 124</i>		B2H0857	08/09/2022	<i>08/09/22 15:32</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.9 %</i>		<i>73 - 124</i>		B2H0857	08/09/2022	<i>08/09/22 15:58</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>		<i>78 - 129</i>		B2H0857	08/09/2022	<i>08/09/22 15:32</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>		<i>78 - 129</i>		B2H0857	08/09/2022	<i>08/09/22 15:58</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>		<i>84 - 117</i>		B2H0857	08/09/2022	<i>08/09/22 15:32</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>84 - 117</i>		B2H0857	08/09/2022	<i>08/09/22 15:58</i>	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	82	2.0	0.84	1	B2H0843	08/05/2022	08/09/22 16:11	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>116 %</i>		<i>17 - 119</i>		B2H0843	08/05/2022	<i>08/09/22 16:11</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>83.8 %</i>		<i>10 - 133</i>		B2H0843	08/05/2022	<i>08/09/22 16:11</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>80.1 %</i>		<i>5 - 139</i>		B2H0843	08/05/2022	<i>08/09/22 16:11</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>90.3 %</i>		<i>13 - 150</i>		B2H0843	08/05/2022	<i>08/09/22 16:11</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-26C

Lab ID: 2202071-10

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:09	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 16:09	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 16:09	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 16:09	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:09	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 16:09	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 16:09	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 16:09	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 16:09	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 16:09	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 16:09	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:09	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 16:09	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:09	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 16:09	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 16:09	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 16:09	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 16:09	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:09	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 16:09	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:09	
Chloromethane	0.13	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 16:09	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 16:09	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 16:09	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 16:09	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 16:09	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-26C

Lab ID: 2202071-10

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 16:09	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:09	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 16:09	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 16:09	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:09	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:09	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 16:09	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:09	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:09	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:09	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 16:09	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:09	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:09	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 16:09	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:09	
Surrogate: 1,2-Dichloroethane-d4	104 %	64 - 155			B2H0849	08/08/2022	08/08/22 16:09	
Surrogate: 4-Bromofluorobenzene	97.6 %	73 - 124			B2H0849	08/08/2022	08/08/22 16:09	
Surrogate: Dibromofluoromethane	104 %	78 - 129			B2H0849	08/08/2022	08/08/22 16:09	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0849	08/08/2022	08/08/22 16:09	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 20:21	
Surrogate: 1,2-Dichlorobenzene-d4	105 %	13 - 99			B2H0851	08/08/2022	08/11/22 20:21	S12
Surrogate: 2-Fluorobiphenyl	94.5 %	8 - 111			B2H0851	08/08/2022	08/11/22 20:21	
Surrogate: 4-Terphenyl-d14	100 %	12 - 113			B2H0851	08/08/2022	08/11/22 20:21	
Surrogate: Nitrobenzene-d5	107 %	15 - 121			B2H0851	08/08/2022	08/11/22 20:21	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-09

Lab ID: 2202071-11

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:35	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 16:35	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 16:35	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 16:35	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:35	
1,1-Dichloroethene	0.36	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	J
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 16:35	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 16:35	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 16:35	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 16:35	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 16:35	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 16:35	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:35	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 16:35	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:35	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 16:35	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 16:35	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 16:35	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 16:35	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:35	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 16:35	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:35	
Chloromethane	0.13	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 16:35	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 16:35	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 16:35	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 16:35	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 16:35	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-09

Lab ID: 2202071-11

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 16:35	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:35	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 16:35	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 16:35	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 16:35	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:35	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 16:35	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:35	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:35	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:35	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 16:35	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 16:35	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 16:35	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 16:35	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 16:35	
Surrogate: 1,2-Dichloroethane-d4	105 %	64 - 155			B2H0849	08/08/2022	08/08/22 16:35	
Surrogate: 4-Bromofluorobenzene	99.4 %	73 - 124			B2H0849	08/08/2022	08/08/22 16:35	
Surrogate: Dibromofluoromethane	106 %	78 - 129			B2H0849	08/08/2022	08/08/22 16:35	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0849	08/08/2022	08/08/22 16:35	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 20:52	
Surrogate: 1,2-Dichlorobenzene-d4	108 %	13 - 99			B2H0851	08/08/2022	08/11/22 20:52	S12
Surrogate: 2-Fluorobiphenyl	93.9 %	8 - 111			B2H0851	08/08/2022	08/11/22 20:52	
Surrogate: 4-Terphenyl-d14	99.9 %	12 - 113			B2H0851	08/08/2022	08/11/22 20:52	
Surrogate: Nitrobenzene-d5	111 %	15 - 121			B2H0851	08/08/2022	08/11/22 20:52	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-08

Lab ID: 2202071-12

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:25	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 19:25	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 19:25	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 19:25	
1,1-Dichloroethane	0.18	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:25	J
1,1-Dichloroethene	24	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 19:25	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 19:25	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 19:25	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 19:25	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 19:25	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 19:25	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:25	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 19:25	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:25	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 19:25	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 19:25	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 19:25	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 19:25	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:25	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 19:25	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:25	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 19:25	
cis-1,2-Dichloroethene	2.3	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 19:25	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 19:25	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 19:25	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 19:25	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-08

Lab ID: 2202071-12

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 19:25	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:25	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 19:25	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 19:25	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:25	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:25	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 19:25	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:25	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:25	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:25	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 19:25	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:25	
Trichloroethene	40	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:25	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 19:25	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>107 %</i>	<i>64 - 155</i>			B2H0857	08/09/2022	08/09/22 19:25	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.8 %</i>	<i>73 - 124</i>			B2H0857	08/09/2022	08/09/22 19:25	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>78 - 129</i>			B2H0857	08/09/2022	08/09/22 19:25	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>84 - 117</i>			B2H0857	08/09/2022	08/09/22 19:25	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	1.3	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 21:22	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>105 %</i>	<i>13 - 99</i>			B2H0851	08/08/2022	08/11/22 21:22	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>94.3 %</i>	<i>8 - 111</i>			B2H0851	08/08/2022	08/11/22 21:22	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>99.8 %</i>	<i>12 - 113</i>			B2H0851	08/08/2022	08/11/22 21:22	
<i>Surrogate: Nitrobenzene-d5</i>	<i>111 %</i>	<i>15 - 121</i>			B2H0851	08/08/2022	08/11/22 21:22	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-32B

Lab ID: 2202071-13

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:24	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 16:24	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 16:24	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 16:24	
1,1-Dichloroethane	0.46	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:24	J
1,1-Dichloroethene	61	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 16:24	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 16:24	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 16:24	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 16:24	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 16:24	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 16:24	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:24	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 16:24	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:24	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 16:24	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 16:24	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 16:24	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 16:24	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:24	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 16:24	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:24	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 16:24	
cis-1,2-Dichloroethene	1.7	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 16:24	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 16:24	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 16:24	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 16:24	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-32B

Lab ID: 2202071-13

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 16:24	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:24	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 16:24	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 16:24	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:24	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:24	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 16:24	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:24	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:24	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:24	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 16:24	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:24	
Trichloroethene	16	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:24	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 16:24	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:24	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>64 - 155</i>			B2H0857	08/09/2022	08/09/22 16:24	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.0 %</i>	<i>73 - 124</i>			B2H0857	08/09/2022	08/09/22 16:24	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>78 - 129</i>			B2H0857	08/09/2022	08/09/22 16:24	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>84 - 117</i>			B2H0857	08/09/2022	08/09/22 16:24	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	1.8	0.20	0.05	1	B2H0851	08/08/2022	08/11/22 21:53	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>99.8 %</i>	<i>13 - 99</i>			B2H0851	08/08/2022	08/11/22 21:53	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>95.2 %</i>	<i>8 - 111</i>			B2H0851	08/08/2022	08/11/22 21:53	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>99.7 %</i>	<i>12 - 113</i>			B2H0851	08/08/2022	08/11/22 21:53	
<i>Surrogate: Nitrobenzene-d5</i>	<i>108 %</i>	<i>15 - 121</i>			B2H0851	08/08/2022	08/11/22 21:53	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-15

Lab ID: 2202071-14

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:51	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 19:51	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 19:51	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 19:51	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:51	
1,1-Dichloroethene	0.36	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	J
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 19:51	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 19:51	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 19:51	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 19:51	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 19:51	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 19:51	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:51	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 19:51	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:51	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 19:51	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 19:51	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 19:51	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 19:51	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:51	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 19:51	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:51	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 19:51	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 19:51	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 19:51	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 19:51	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 19:51	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-15

Lab ID: 2202071-14

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 19:51	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:51	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 19:51	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 19:51	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 19:51	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:51	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 19:51	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:51	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:51	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:51	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 19:51	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 19:51	
Trichloroethene	2.3	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 19:51	
Trichlorofluoromethane	6.9	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 19:51	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 19:51	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>		<i>64 - 155</i>		B2H0857	08/09/2022	<i>08/09/22 19:51</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.3 %</i>		<i>73 - 124</i>		B2H0857	08/09/2022	<i>08/09/22 19:51</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>		<i>78 - 129</i>		B2H0857	08/09/2022	<i>08/09/22 19:51</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>		<i>84 - 117</i>		B2H0857	08/09/2022	<i>08/09/22 19:51</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-21

Lab ID: 2202071-15

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:50	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 16:50	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 16:50	
1,1,2-Trichloroethane	15	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 16:50	
1,1-Dichloroethane	28	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:50	
1,1-Dichloroethene	1900	25	6.6	50	B2H0857	08/09/2022	08/09/22 17:16	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2-Dichloroethane	5.0	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 16:50	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 16:50	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 16:50	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 16:50	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 16:50	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 16:50	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:50	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 16:50	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:50	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 16:50	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 16:50	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 16:50	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 16:50	
Carbon tetrachloride	0.52	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:50	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 16:50	
Chloroform	0.86	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:50	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 16:50	
cis-1,2-Dichloroethene	1.9	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 16:50	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 16:50	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 16:50	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 16:50	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: MW-21

Lab ID: 2202071-15

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 16:50	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:50	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 16:50	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 16:50	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 16:50	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:50	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 16:50	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:50	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:50	
Tetrachloroethene	4.9	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:50	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 16:50	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 16:50	
Trichloroethene	18	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 16:50	
Trichlorofluoromethane	0.34	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 16:50	J
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 16:50	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>64 - 155</i>			B2H0857	08/09/2022	<i>08/09/22 16:50</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>107 %</i>	<i>64 - 155</i>			B2H0857	08/09/2022	<i>08/09/22 17:16</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.0 %</i>	<i>73 - 124</i>			B2H0857	08/09/2022	<i>08/09/22 16:50</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.9 %</i>	<i>73 - 124</i>			B2H0857	08/09/2022	<i>08/09/22 17:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>78 - 129</i>			B2H0857	08/09/2022	<i>08/09/22 16:50</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>78 - 129</i>			B2H0857	08/09/2022	<i>08/09/22 17:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>			B2H0857	08/09/2022	<i>08/09/22 16:50</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>			B2H0857	08/09/2022	<i>08/09/22 17:16</i>	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	590	2.0	0.84	1	B2H0843	08/05/2022	08/09/22 16:41	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>113 %</i>	<i>17 - 119</i>			B2H0843	08/05/2022	<i>08/09/22 16:41</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>83.6 %</i>	<i>10 - 133</i>			B2H0843	08/05/2022	<i>08/09/22 16:41</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>79.3 %</i>	<i>5 - 139</i>			B2H0843	08/05/2022	<i>08/09/22 16:41</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>94.2 %</i>	<i>13 - 150</i>			B2H0843	08/05/2022	<i>08/09/22 16:41</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: EW-01

Lab ID: 2202071-16

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:01	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:01	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 17:01	
1,1,2-Trichloroethane	0.32	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 17:01	J
1,1-Dichloroethane	0.81	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:01	
1,1-Dichloroethene	55	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:01	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:01	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:01	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:01	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 17:01	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 17:01	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:01	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:01	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:01	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:01	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:01	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:01	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 17:01	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:01	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:01	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:01	
Chloromethane	0.18	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:01	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:01	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:01	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 17:01	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 17:01	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: EW-01

Lab ID: 2202071-16

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:01	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:01	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 17:01	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 17:01	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:01	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:01	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 17:01	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:01	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:01	
Tetrachloroethene	0.20	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:01	J
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:01	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:01	
Trichloroethene	0.11	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:01	J
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 17:01	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:01	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>	<i>64 - 155</i>			B2H0849	08/08/2022	<i>08/08/22 17:01</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.0 %</i>	<i>73 - 124</i>			B2H0849	08/08/2022	<i>08/08/22 17:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>78 - 129</i>			B2H0849	08/08/2022	<i>08/08/22 17:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>84 - 117</i>			B2H0849	08/08/2022	<i>08/08/22 17:01</i>	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	33	2.0	0.84	1	B2H0843	08/05/2022	08/09/22 17:10	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>117 %</i>	<i>17 - 119</i>			B2H0843	08/05/2022	<i>08/09/22 17:10</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>84.8 %</i>	<i>10 - 133</i>			B2H0843	08/05/2022	<i>08/09/22 17:10</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>81.3 %</i>	<i>5 - 139</i>			B2H0843	08/05/2022	<i>08/09/22 17:10</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>92.1 %</i>	<i>13 - 150</i>			B2H0843	08/05/2022	<i>08/09/22 17:10</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: EW-0100

Lab ID: 2202071-17

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:27	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:27	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 17:27	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 17:27	
1,1-Dichloroethane	0.77	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:27	
1,1-Dichloroethene	58	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:27	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:27	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:27	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:27	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 17:27	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 17:27	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:27	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:27	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:27	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:27	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:27	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:27	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 17:27	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:27	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:27	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:27	
Chloromethane	0.20	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:27	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:27	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:27	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 17:27	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 17:27	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: EW-0100

Lab ID: 2202071-17

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:27	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:27	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 17:27	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 17:27	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:27	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:27	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 17:27	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:27	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:27	
Tetrachloroethene	0.20	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:27	J
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:27	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:27	
Trichloroethene	0.13	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:27	J
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 17:27	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:27	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>64 - 155</i>			B2H0849	08/08/2022	08/08/22 17:27	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.1 %</i>	<i>73 - 124</i>			B2H0849	08/08/2022	08/08/22 17:27	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>78 - 129</i>			B2H0849	08/08/2022	08/08/22 17:27	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>			B2H0849	08/08/2022	08/08/22 17:27	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	30	2.0	0.84	1	B2H0843	08/05/2022	08/09/22 17:40	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>99.8 %</i>	<i>17 - 119</i>			B2H0843	08/05/2022	08/09/22 17:40	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>86.3 %</i>	<i>10 - 133</i>			B2H0843	08/05/2022	08/09/22 17:40	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>83.5 %</i>	<i>5 - 139</i>			B2H0843	08/05/2022	08/09/22 17:40	
<i>Surrogate: Nitrobenzene-d5</i>	<i>91.3 %</i>	<i>13 - 150</i>			B2H0843	08/05/2022	08/09/22 17:40	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: RB-080322

Lab ID: 2202071-18

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:53	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:53	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 17:53	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 17:53	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:53	
1,1-Dichloroethene	0.14	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	J
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:53	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:53	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:53	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:53	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 17:53	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 17:53	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:53	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:53	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:53	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 17:53	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:53	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 17:53	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 17:53	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:53	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:53	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:53	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:53	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 17:53	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 17:53	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 17:53	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 17:53	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Client Sample ID: RB-080322

Lab ID: 2202071-18

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 17:53	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:53	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 17:53	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 17:53	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 17:53	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:53	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 17:53	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:53	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:53	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:53	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 17:53	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 17:53	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 17:53	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 17:53	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 17:53	
Surrogate: 1,2-Dichloroethane-d4	102 %	64 - 155			B2H0849	08/08/2022	08/08/22 17:53	
Surrogate: 4-Bromofluorobenzene	95.7 %	73 - 124			B2H0849	08/08/2022	08/08/22 17:53	
Surrogate: Dibromofluoromethane	102 %	78 - 129			B2H0849	08/08/2022	08/08/22 17:53	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0849	08/08/2022	08/08/22 17:53	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W

Blank (B2H0849-BLK1)

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Blank (B2H0849-BLK1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	0.150000	0.50	0.11
n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

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Surrogate: 1,2-Dichloroethane-d4	25.17		25.0000	101	64 - 155
Surrogate: 4-Bromofluorobenzene	24.32		25.0000	97.3	73 - 124
Surrogate: Dibromofluoromethane	25.42		25.0000	102	78 - 129
Surrogate: Toluene-d8	25.55		25.0000	102	84 - 117

LCS (B2H0849-BS1)

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	21.6300	0.50	0.11	20.0000	108	79 - 116
1,1,1-Trichloroethane	21.3800	0.50	0.21	20.0000	107	73 - 130
1,1,2,2-Tetrachloroethane	21.4500	0.50	0.36	20.0000	107	71 - 122
1,1,2-Trichloroethane	22.2000	0.50	0.25	20.0000	111	70 - 124
1,1-Dichloroethane	20.9300	0.50	0.09	20.0000	105	69 - 128
1,1-Dichloroethene	20.2500	0.50	0.13	20.0000	101	65 - 137
1,1-Dichloropropene	20.5100	0.50	0.13	20.0000	103	74 - 129
1,2,3-Trichloropropane	20.4600	0.50	0.39	20.0000	102	74 - 123
1,2,3-Trichlorobenzene	23.8200	0.50	0.18	20.0000	119	59 - 130
1,2,4-Trichlorobenzene	22.7100	0.50	0.16	20.0000	114	65 - 125
1,2,4-Trimethylbenzene	21.3100	0.50	0.14	20.0000	107	88 - 124
1,2-Dibromo-3-chloropropane	20.8900	0.50	0.41	20.0000	104	61 - 127
1,2-Dibromoethane	21.9300	0.50	0.24	20.0000	110	72 - 125
1,2-Dichlorobenzene	21.0800	0.50	0.20	20.0000	105	84 - 113
1,2-Dichloroethane	22.0800	0.50	0.20	20.0000	110	68 - 130
1,2-Dichloropropane	21.6400	0.50	0.15	20.0000	108	77 - 121
1,3,5-Trimethylbenzene	21.2800	0.50	0.13	20.0000	106	83 - 124
1,3-Dichlorobenzene	21.4100	0.50	0.16	20.0000	107	83 - 112
1,3-Dichloropropane	21.8300	0.50	0.21	20.0000	109	77 - 119
1,4-Dichlorobenzene	21.2300	0.50	0.17	20.0000	106	79 - 115
2,2-Dichloropropane	23.2500	0.50	0.38	20.0000	116	67 - 149
2-Chlorotoluene	20.8400	0.50	0.11	20.0000	104	81 - 119
4-Chlorotoluene	20.9500	0.50	0.12	20.0000	105	86 - 117
4-Isopropyltoluene	20.9800	0.50	0.11	20.0000	105	82 - 131



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

LCS (B2H0849-BS1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

Benzene	21.3100	0.50	0.13	20.0000		107	75 - 124		
Bromobenzene	21.2100	0.50	0.21	20.0000		106	82 - 108		
Bromodichloromethane	21.9300	0.50	0.14	20.0000		110	80 - 120		
Bromoform	22.4500	0.50	0.20	20.0000		112	70 - 123		
Bromomethane	24.6500	0.50	0.40	20.0000		123	44 - 151		
Carbon tetrachloride	21.4100	0.50	0.09	20.0000		107	62 - 140		
Chlorobenzene	21.7700	0.50	0.13	20.0000		109	80 - 112		
Chloroethane	21.6100	0.50	0.15	20.0000		108	42 - 167		
Chloroform	22.1200	0.50	0.11	20.0000		111	77 - 122		
Chloromethane	21.0900	0.50	0.12	20.0000		105	33 - 153		
cis-1,2-Dichloroethene	21.3100	0.50	0.14	20.0000		107	75 - 121		
cis-1,3-Dichloropropene	22.3400	0.50	0.13	20.0000		112	73 - 127		
Dibromochloromethane	20.7200	0.50	0.16	20.0000		104	77 - 122		
Dibromomethane	21.9000	0.50	0.19	20.0000		110	75 - 121		
Dichlorodifluoromethane	16.3400	0.50	0.18	20.0000		81.7	0 - 171		
Ethylbenzene	21.6400	0.50	0.13	20.0000		108	82 - 119		
Hexachlorobutadiene	20.3100	0.50	0.15	20.0000		102	71 - 131		
Isopropylbenzene	20.8400	0.50	0.10	20.0000		104	75 - 126		
m,p-Xylene	43.3300	1.0	0.19	40.0000		108	86 - 119		
Methylene chloride	21.0000	1.0	0.71	20.0000		105	76 - 125		
n-Butylbenzene	20.6300	0.50	0.11	20.0000		103	81 - 125		
n-Propylbenzene	20.8300	0.50	0.10	20.0000		104	78 - 130		
Naphthalene	24.1300	0.50	0.41	20.0000		121	47 - 128		
o-Xylene	21.7400	0.50	0.13	20.0000		109	85 - 119		
sec-Butylbenzene	20.2600	0.50	0.09	20.0000		101	78 - 130		
Styrene	22.3900	0.50	0.13	20.0000		112	62 - 148		
tert-Butylbenzene	20.5900	0.50	0.09	20.0000		103	77 - 125		
Tetrachloroethene	21.1700	0.50	0.10	20.0000		106	73 - 120		
Toluene	21.3900	0.50	0.12	20.0000		107	79 - 119		
trans-1,2-Dichloroethene	20.8300	0.50	0.09	20.0000		104	70 - 129		
Trichloroethene	21.4100	0.50	0.10	20.0000		107	73 - 117		
Trichlorofluoromethane	17.4500	0.50	0.23	20.0000		87.2	59 - 135		
Vinyl chloride	20.7000	0.50	0.13	20.0000		104	58 - 132		

Surrogate: 1,2-Dichloroethane-d4	24.40			25.0000		97.6	64 - 155		
Surrogate: 4-Bromofluorobenzene	24.87			25.0000		99.5	73 - 124		
Surrogate: Dibromofluoromethane	25.14			25.0000		101	78 - 129		
Surrogate: Toluene-d8	24.85			25.0000		99.4	84 - 117		

LCS Dup (B2H0849-BSD1)

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	24.9000	0.50	0.11	20.0000		124	79 - 116	14.1	20	L3
1,1,1-Trichloroethane	23.5600	0.50	0.21	20.0000		118	73 - 130	9.70	20	
1,1,2,2-Tetrachloroethane	25.1600	0.50	0.36	20.0000		126	71 - 122	15.9	20	L3
1,1,2-Trichloroethane	25.7600	0.50	0.25	20.0000		129	70 - 124	14.8	20	L3
1,1-Dichloroethane	23.3200	0.50	0.09	20.0000		117	69 - 128	10.8	20	
1,1-Dichloroethene	22.0000	0.50	0.13	20.0000		110	65 - 137	8.28	20	



Certificate of Analysis

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3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

LCS Dup (B2H0849-BSD1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1-Dichloropropene	24.0000	0.50	0.13	20.0000	120	74 - 129	15.7	20	
1,2,3-Trichloropropane	23.6100	0.50	0.39	20.0000	118	74 - 123	14.3	20	
1,2,3-Trichlorobenzene	26.5900	0.50	0.18	20.0000	133	59 - 130	11.0	20	L5
1,2,4-Trichlorobenzene	26.3000	0.50	0.16	20.0000	132	65 - 125	14.7	20	L5
1,2,4-Trimethylbenzene	23.6400	0.50	0.14	20.0000	118	88 - 124	10.4	20	
1,2-Dibromo-3-chloropropane	24.4600	0.50	0.41	20.0000	122	61 - 127	15.7	20	
1,2-Dibromoethane	25.8500	0.50	0.24	20.0000	129	72 - 125	16.4	20	L3
1,2-Dichlorobenzene	23.8100	0.50	0.20	20.0000	119	84 - 113	12.2	20	L3
1,2-Dichloroethane	24.6600	0.50	0.20	20.0000	123	68 - 130	11.0	20	
1,2-Dichloropropane	24.2600	0.50	0.15	20.0000	121	77 - 121	11.4	20	L3
1,3,5-Trimethylbenzene	23.3600	0.50	0.13	20.0000	117	83 - 124	9.32	20	
1,3-Dichlorobenzene	24.1800	0.50	0.16	20.0000	121	83 - 112	12.2	20	L3
1,3-Dichloropropane	25.2600	0.50	0.21	20.0000	126	77 - 119	14.6	20	L3
1,4-Dichlorobenzene	23.6700	0.50	0.17	20.0000	118	79 - 115	10.9	20	L3
2,2-Dichloropropane	25.5100	0.50	0.38	20.0000	128	67 - 149	9.27	20	
2-Chlorotoluene	23.4300	0.50	0.11	20.0000	117	81 - 119	11.7	20	
4-Chlorotoluene	23.4700	0.50	0.12	20.0000	117	86 - 117	11.3	20	L3
4-Isopropyltoluene	23.2300	0.50	0.11	20.0000	116	82 - 131	10.2	20	
Benzene	24.1400	0.50	0.13	20.0000	121	75 - 124	12.5	20	
Bromobenzene	24.0000	0.50	0.21	20.0000	120	82 - 108	12.3	20	L3
Bromodichloromethane	25.5500	0.50	0.14	20.0000	128	80 - 120	15.2	20	L3
Bromoform	26.0000	0.50	0.20	20.0000	130	70 - 123	14.7	20	L3
Bromomethane	27.8600	0.50	0.40	20.0000	139	44 - 151	12.2	20	
Carbon tetrachloride	23.8400	0.50	0.09	20.0000	119	62 - 140	10.7	20	
Chlorobenzene	24.3300	0.50	0.13	20.0000	122	80 - 112	11.1	20	L3
Chloroethane	24.2100	0.50	0.15	20.0000	121	42 - 167	11.3	20	
Chloroform	24.9700	0.50	0.11	20.0000	125	77 - 122	12.1	20	L3
Chloromethane	23.0600	0.50	0.12	20.0000	115	33 - 153	8.92	20	
cis-1,2-Dichloroethene	24.4500	0.50	0.14	20.0000	122	75 - 121	13.7	20	L3
cis-1,3-Dichloropropene	26.1900	0.50	0.13	20.0000	131	73 - 127	15.9	20	L5
Dibromochloromethane	23.8400	0.50	0.16	20.0000	119	77 - 122	14.0	20	
Dibromomethane	25.3700	0.50	0.19	20.0000	127	75 - 121	14.7	20	L3
Dichlorodifluoromethane	17.8100	0.50	0.18	20.0000	89.0	0 - 171	8.61	20	
Ethylbenzene	24.1300	0.50	0.13	20.0000	121	82 - 119	10.9	20	L3
Hexachlorobutadiene	22.7300	0.50	0.15	20.0000	114	71 - 131	11.2	20	
Isopropylbenzene	23.0700	0.50	0.10	20.0000	115	75 - 126	10.2	20	
m,p-Xylene	48.3300	1.0	0.19	40.0000	121	86 - 119	10.9	20	L3
Methylene chloride	23.9300	1.0	0.71	20.0000	120	76 - 125	13.0	20	
n-Butylbenzene	23.0500	0.50	0.11	20.0000	115	81 - 125	11.1	20	
n-Propylbenzene	23.2800	0.50	0.10	20.0000	116	78 - 130	11.1	20	
Naphthalene	27.2200	0.50	0.41	20.0000	136	47 - 128	12.0	20	L5
o-Xylene	24.5700	0.50	0.13	20.0000	123	85 - 119	12.2	20	L3
sec-Butylbenzene	22.7100	0.50	0.09	20.0000	114	78 - 130	11.4	20	
Styrene	25.2600	0.50	0.13	20.0000	126	62 - 148	12.0	20	
tert-Butylbenzene	22.8400	0.50	0.09	20.0000	114	77 - 125	10.4	20	



Certificate of Analysis

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3131 Camino De Rio North Suite 355

San Diego , CA 92108

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Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

LCS Dup (B2H0849-BSD1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

Tetrachloroethene	23.9700	0.50	0.10	20.0000		120	73 - 120	12.4	20	
Toluene	23.9700	0.50	0.12	20.0000		120	79 - 119	11.4	20	L3
trans-1,2-Dichloroethene	22.9700	0.50	0.09	20.0000		115	70 - 129	9.77	20	
Trichloroethene	23.8500	0.50	0.10	20.0000		119	73 - 117	10.8	20	L3
Trichlorofluoromethane	19.7500	0.50	0.23	20.0000		98.8	59 - 135	12.4	20	
Vinyl chloride	22.6700	0.50	0.13	20.0000		113	58 - 132	9.08	20	
Surrogate: 1,2-Dichloroethane-d4	24.38			25.0000		97.5	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.44			25.0000		102	73 - 124			
Surrogate: Dibromofluoromethane	25.09			25.0000		100	78 - 129			
Surrogate: Toluene-d8	25.29			25.0000		101	84 - 117			

Matrix Spike (B2H0849-MS1)

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	19.4700	0.50	0.11	20.0000	ND	97.4	81 - 133			
1,1,1-Trichloroethane	20.1300	0.50	0.21	20.0000	ND	101	93 - 149			
1,1,2,2-Tetrachloroethane	19.9600	0.50	0.36	20.0000	ND	99.8	69 - 151			
1,1,2-Trichloroethane	19.8200	0.50	0.25	20.0000	ND	99.1	78 - 130			
1,1-Dichloroethane	19.2800	0.50	0.09	20.0000	ND	96.4	68 - 135			
1,1-Dichloroethene	19.5800	0.50	0.13	20.0000	ND	97.9	77 - 134			
1,1-Dichloropropene	20.5900	0.50	0.13	20.0000	ND	103	91 - 138			
1,2,3-Trichloropropane	18.7200	0.50	0.39	20.0000	ND	93.6	77 - 136			
1,2,3-Trichlorobenzene	21.0700	0.50	0.18	20.0000	ND	105	72 - 129			
1,2,4-Trichlorobenzene	20.4300	0.50	0.16	20.0000	ND	102	64 - 135			
1,2,4-Trimethylbenzene	19.3900	0.50	0.14	20.0000	ND	97.0	10 - 179			
1,2-Dibromo-3-chloropropane	19.0400	0.50	0.41	20.0000	ND	95.2	62 - 153			
1,2-Dibromoethane	20.2700	0.50	0.24	20.0000	ND	101	80 - 132			
1,2-Dichlorobenzene	19.1300	0.50	0.20	20.0000	ND	95.6	81 - 131			
1,2-Dichloroethane	19.6300	0.50	0.20	20.0000	ND	98.2	68 - 146			
1,2-Dichloropropane	19.3700	0.50	0.15	20.0000	ND	96.8	74 - 136			
1,3,5-Trimethylbenzene	19.4500	0.50	0.13	20.0000	ND	97.2	66 - 149			
1,3-Dichlorobenzene	19.4900	0.50	0.16	20.0000	ND	97.4	79 - 128			
1,3-Dichloropropane	19.7500	0.50	0.21	20.0000	ND	98.8	80 - 129			
1,4-Dichlorobenzene	18.9500	0.50	0.17	20.0000	ND	94.8	84 - 121			
2,2-Dichloropropane	22.8800	0.50	0.38	20.0000	ND	114	63 - 179			
2-Chlorotoluene	19.1400	0.50	0.11	20.0000	ND	95.7	76 - 142			
4-Chlorotoluene	18.7700	0.50	0.12	20.0000	ND	93.8	72 - 152			
4-Isopropyltoluene	19.8400	0.50	0.11	20.0000	ND	99.2	84 - 141			
Benzene	20.0800	0.50	0.13	20.0000	ND	100	79 - 131			
Bromobenzene	19.0200	0.50	0.21	20.0000	ND	95.1	82 - 121			
Bromodichloromethane	20.2900	0.50	0.14	20.0000	ND	101	86 - 138			
Bromoform	19.5900	0.50	0.20	20.0000	ND	98.0	80 - 136			
Bromomethane	23.6000	0.50	0.40	20.0000	ND	118	35 - 194			
Carbon tetrachloride	21.0500	0.50	0.09	20.0000	ND	105	73 - 176			
Chlorobenzene	19.5700	0.50	0.13	20.0000	ND	97.8	81 - 124			
Chloroethane	20.9700	0.50	0.15	20.0000	ND	105	0 - 257			
Chloroform	19.8800	0.50	0.11	20.0000	ND	99.4	76 - 139			



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Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Matrix Spike (B2H0849-MS1) - Continued

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

Chloromethane	20.1000	0.50	0.12	20.0000	0.130000	99.8	27 - 144			
cis-1,2-Dichloroethene	19.6500	0.50	0.14	20.0000	ND	98.2	69 - 139			
cis-1,3-Dichloropropene	20.1700	0.50	0.13	20.0000	ND	101	67 - 149			
Dibromochloromethane	18.5100	0.50	0.16	20.0000	ND	92.6	91 - 131			
Dibromomethane	19.9100	0.50	0.19	20.0000	ND	99.6	70 - 134			
Dichlorodifluoromethane	21.8500	0.50	0.18	20.0000	ND	109	0 - 161			
Ethylbenzene	19.8900	0.50	0.13	20.0000	ND	99.4	89 - 134			
Hexachlorobutadiene	20.4300	0.50	0.15	20.0000	ND	102	73 - 137			
Isopropylbenzene	19.5600	0.50	0.10	20.0000	ND	97.8	72 - 152			
m,p-Xylene	39.8000	1.0	0.19	40.0000	ND	99.5	82 - 141			
Methylene chloride	18.9300	1.0	0.71	20.0000	ND	94.6	74 - 133			
n-Butylbenzene	19.8100	0.50	0.11	20.0000	ND	99.0	65 - 164			
n-Propylbenzene	19.3800	0.50	0.10	20.0000	ND	96.9	73 - 161			
Naphthalene	21.7700	0.50	0.41	20.0000	ND	109	59 - 105			M2
o-Xylene	19.8400	0.50	0.13	20.0000	ND	99.2	90 - 134			
sec-Butylbenzene	19.4300	0.50	0.09	20.0000	ND	97.2	80 - 157			
Styrene	20.2100	0.50	0.13	20.0000	ND	101	0 - 222			
tert-Butylbenzene	19.3800	0.50	0.09	20.0000	ND	96.9	88 - 141			
Tetrachloroethene	20.5200	0.50	0.10	20.0000	ND	103	75 - 136			
Toluene	19.5500	0.50	0.12	20.0000	ND	97.8	82 - 132			
trans-1,2-Dichloroethene	19.6400	0.50	0.09	20.0000	ND	98.2	65 - 135			
Trichloroethene	20.0100	0.50	0.10	20.0000	ND	100	75 - 128			
Trichlorofluoromethane	20.1000	0.50	0.23	20.0000	ND	100	89 - 143			
Vinyl chloride	20.8400	0.50	0.13	20.0000	ND	104	50 - 148			
Surrogate: 1,2-Dichloroethane-d4	24.08			25.0000		96.3	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.02			25.0000		100	73 - 124			
Surrogate: Dibromofluoromethane	24.95			25.0000		99.8	78 - 129			
Surrogate: Toluene-d8	25.06			25.0000		100	84 - 117			

Matrix Spike Dup (B2H0849-MSD1)

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	22.8700	0.50	0.11	20.0000	ND	114	81 - 133	16.1	20	
1,1,1-Trichloroethane	24.6300	0.50	0.21	20.0000	ND	123	93 - 149	20.1	20	R
1,1,2,2-Tetrachloroethane	22.9100	0.50	0.36	20.0000	ND	115	69 - 151	13.8	20	
1,1,2-Trichloroethane	22.6900	0.50	0.25	20.0000	ND	113	78 - 130	13.5	20	
1,1-Dichloroethane	22.3900	0.50	0.09	20.0000	ND	112	68 - 135	14.9	20	
1,1-Dichloroethene	23.6500	0.50	0.13	20.0000	ND	118	77 - 134	18.8	20	
1,1-Dichloropropene	24.1600	0.50	0.13	20.0000	ND	121	91 - 138	16.0	20	
1,2,3-Trichloropropane	21.3000	0.50	0.39	20.0000	ND	106	77 - 136	12.9	20	
1,2,3-Trichlorobenzene	24.4300	0.50	0.18	20.0000	ND	122	72 - 129	14.8	20	
1,2,4-Trichlorobenzene	23.8700	0.50	0.16	20.0000	ND	119	64 - 135	15.5	20	
1,2,4-Trimethylbenzene	23.1400	0.50	0.14	20.0000	ND	116	10 - 179	17.6	20	
1,2-Dibromo-3-chloropropane	22.8700	0.50	0.41	20.0000	ND	114	62 - 153	18.3	20	
1,2-Dibromoethane	22.8000	0.50	0.24	20.0000	ND	114	80 - 132	11.7	20	
1,2-Dichlorobenzene	22.2900	0.50	0.20	20.0000	ND	111	81 - 131	15.3	20	
1,2-Dichloroethane	21.7600	0.50	0.20	20.0000	ND	109	68 - 146	10.3	20	



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0849-MSD1) - Continued

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,2-Dichloropropane	22.2800	0.50	0.15	20.0000	ND	111	74 - 136	14.0	20	
1,3,5-Trimethylbenzene	23.4300	0.50	0.13	20.0000	ND	117	66 - 149	18.6	20	
1,3-Dichlorobenzene	23.0400	0.50	0.16	20.0000	ND	115	79 - 128	16.7	20	
1,3-Dichloropropane	22.5800	0.50	0.21	20.0000	ND	113	80 - 129	13.4	20	
1,4-Dichlorobenzene	22.2800	0.50	0.17	20.0000	ND	111	84 - 121	16.2	20	
2,2-Dichloropropane	26.3100	0.50	0.38	20.0000	ND	132	63 - 179	13.9	20	
2-Chlorotoluene	22.7800	0.50	0.11	20.0000	ND	114	76 - 142	17.4	20	
4-Chlorotoluene	22.5400	0.50	0.12	20.0000	ND	113	72 - 152	18.3	20	
4-Isopropyltoluene	23.9600	0.50	0.11	20.0000	ND	120	84 - 141	18.8	20	
Benzene	23.3900	0.50	0.13	20.0000	ND	117	79 - 131	15.2	20	
Bromobenzene	22.4300	0.50	0.21	20.0000	ND	112	82 - 121	16.5	20	
Bromodichloromethane	22.9300	0.50	0.14	20.0000	ND	115	86 - 138	12.2	20	
Bromoform	22.7300	0.50	0.20	20.0000	ND	114	80 - 136	14.8	20	
Bromomethane	27.1600	0.50	0.40	20.0000	ND	136	35 - 194	14.0	20	
Carbon tetrachloride	25.5700	0.50	0.09	20.0000	ND	128	73 - 176	19.4	20	
Chlorobenzene	22.9900	0.50	0.13	20.0000	ND	115	81 - 124	16.1	20	
Chloroethane	24.9100	0.50	0.15	20.0000	ND	125	0 - 257	17.2	20	
Chloroform	23.1900	0.50	0.11	20.0000	ND	116	76 - 139	15.4	20	
Chloromethane	23.5600	0.50	0.12	20.0000	0.130000	117	27 - 144	15.8	20	
cis-1,2-Dichloroethene	22.3600	0.50	0.14	20.0000	ND	112	69 - 139	12.9	20	
cis-1,3-Dichloropropene	23.1900	0.50	0.13	20.0000	ND	116	67 - 149	13.9	20	
Dibromochloromethane	21.2700	0.50	0.16	20.0000	ND	106	91 - 131	13.9	20	
Dibromomethane	21.9400	0.50	0.19	20.0000	ND	110	70 - 134	9.70	20	
Dichlorodifluoromethane	25.6300	0.50	0.18	20.0000	ND	128	0 - 161	15.9	20	
Ethylbenzene	23.8200	0.50	0.13	20.0000	ND	119	89 - 134	18.0	20	
Hexachlorobutadiene	24.3400	0.50	0.15	20.0000	ND	122	73 - 137	17.5	20	
Isopropylbenzene	23.4500	0.50	0.10	20.0000	ND	117	72 - 152	18.1	20	
m,p-Xylene	47.7300	1.0	0.19	40.0000	ND	119	82 - 141	18.1	20	
Methylene chloride	21.6600	1.0	0.71	20.0000	ND	108	74 - 133	13.5	20	
n-Butylbenzene	23.8300	0.50	0.11	20.0000	ND	119	65 - 164	18.4	20	
n-Propylbenzene	23.4500	0.50	0.10	20.0000	ND	117	73 - 161	19.0	20	
Naphthalene	25.2300	0.50	0.41	20.0000	ND	126	59 - 105	14.7	20	M2
o-Xylene	23.4200	0.50	0.13	20.0000	ND	117	90 - 134	16.6	20	
sec-Butylbenzene	23.4800	0.50	0.09	20.0000	ND	117	80 - 157	18.9	20	
Styrene	23.6800	0.50	0.13	20.0000	ND	118	0 - 222	15.8	20	
tert-Butylbenzene	23.2000	0.50	0.09	20.0000	ND	116	88 - 141	17.9	20	
Tetrachloroethene	24.9700	0.50	0.10	20.0000	ND	125	75 - 136	19.6	20	
Toluene	23.1400	0.50	0.12	20.0000	ND	116	82 - 132	16.8	20	
trans-1,2-Dichloroethene	23.0000	0.50	0.09	20.0000	ND	115	65 - 135	15.8	20	
Trichloroethene	23.2600	0.50	0.10	20.0000	ND	116	75 - 128	15.0	20	
Trichlorofluoromethane	24.2500	0.50	0.23	20.0000	ND	121	89 - 143	18.7	20	
Vinyl chloride	24.3300	0.50	0.13	20.0000	ND	122	50 - 148	15.5	20	

Surrogate: 1,2-Dichloroethane-d4

24.45

25.0000

97.8

64 - 155

Surrogate: 4-Bromofluorobenzene

25.37

25.0000

101

73 - 124

Surrogate: Dibromofluoromethane

25.38

25.0000

102

78 - 129



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0849-MSD1) - Continued

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

Surrogate: Toluene-d8

25.04

25.0000

100

84 - 117



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W

Blank (B2H0857-BLK1)

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	0.190000	0.50	0.11

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Blank (B2H0857-BLK1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	26.52		25.0000	106	64 - 155
Surrogate: 4-Bromofluorobenzene	24.52		25.0000	98.1	73 - 124
Surrogate: Dibromofluoromethane	25.70		25.0000	103	78 - 129
Surrogate: Toluene-d8	25.24		25.0000	101	84 - 117

LCS (B2H0857-BS1)

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	22.6300	0.50	0.11	20.0000	113	79 - 116	
1,1,1-Trichloroethane	21.8600	0.50	0.21	20.0000	109	73 - 130	
1,1,2,2-Tetrachloroethane	23.7500	0.50	0.36	20.0000	119	71 - 122	
1,1,2-Trichloroethane	23.8200	0.50	0.25	20.0000	119	70 - 124	
1,1-Dichloroethane	22.9100	0.50	0.09	20.0000	115	69 - 128	
1,1-Dichloroethene	20.9700	0.50	0.13	20.0000	105	65 - 137	
1,1-Dichloropropene	20.8900	0.50	0.13	20.0000	104	74 - 129	
1,2,3-Trichloropropane	22.9800	0.50	0.39	20.0000	115	74 - 123	
1,2,3-Trichlorobenzene	25.2800	0.50	0.18	20.0000	126	59 - 130	
1,2,4-Trichlorobenzene	23.9300	0.50	0.16	20.0000	120	65 - 125	
1,2,4-Trimethylbenzene	22.2700	0.50	0.14	20.0000	111	88 - 124	
1,2-Dibromo-3-chloropropane	23.1400	0.50	0.41	20.0000	116	61 - 127	
1,2-Dibromoethane	24.5500	0.50	0.24	20.0000	123	72 - 125	
1,2-Dichlorobenzene	22.8900	0.50	0.20	20.0000	114	84 - 113	L3
1,2-Dichloroethane	23.9000	0.50	0.20	20.0000	120	68 - 130	
1,2-Dichloropropane	22.8700	0.50	0.15	20.0000	114	77 - 121	
1,3,5-Trimethylbenzene	22.0600	0.50	0.13	20.0000	110	83 - 124	
1,3-Dichlorobenzene	22.7800	0.50	0.16	20.0000	114	83 - 112	L3
1,3-Dichloropropane	23.8400	0.50	0.21	20.0000	119	77 - 119	L3
1,4-Dichlorobenzene	22.3200	0.50	0.17	20.0000	112	79 - 115	
2,2-Dichloropropane	23.2900	0.50	0.38	20.0000	116	67 - 149	
2-Chlorotoluene	21.9200	0.50	0.11	20.0000	110	81 - 119	
4-Chlorotoluene	22.1700	0.50	0.12	20.0000	111	86 - 117	
4-Isopropyltoluene	21.5700	0.50	0.11	20.0000	108	82 - 131	
Benzene	22.5800	0.50	0.13	20.0000	113	75 - 124	
Bromobenzene	22.2900	0.50	0.21	20.0000	111	82 - 108	L3
Bromodichloromethane	23.3200	0.50	0.14	20.0000	117	80 - 120	



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San Diego , CA 92108

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

LCS (B2H0857-BS1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

Bromoform	23.6600	0.50	0.20	20.0000	118	70 - 123			
Bromomethane	28.1600	0.50	0.40	20.0000	141	44 - 151			
Carbon tetrachloride	20.8000	0.50	0.09	20.0000	104	62 - 140			
Chlorobenzene	22.5800	0.50	0.13	20.0000	113	80 - 112			L3
Chloroethane	25.2300	0.50	0.15	20.0000	126	42 - 167			
Chloroform	23.6900	0.50	0.11	20.0000	118	77 - 122			
Chloromethane	23.2100	0.50	0.12	20.0000	116	33 - 153			
cis-1,2-Dichloroethene	23.0200	0.50	0.14	20.0000	115	75 - 121			
cis-1,3-Dichloropropene	23.6300	0.50	0.13	20.0000	118	73 - 127			
Dibromochloromethane	21.7900	0.50	0.16	20.0000	109	77 - 122			
Dibromomethane	23.5700	0.50	0.19	20.0000	118	75 - 121			
Dichlorodifluoromethane	18.4100	0.50	0.18	20.0000	92.0	0 - 171			
Ethylbenzene	22.4800	0.50	0.13	20.0000	112	82 - 119			
Hexachlorobutadiene	20.1300	0.50	0.15	20.0000	101	71 - 131			
Isopropylbenzene	21.5100	0.50	0.10	20.0000	108	75 - 126			
m,p-Xylene	45.4400	1.0	0.19	40.0000	114	86 - 119			
Methylene chloride	23.7200	1.0	0.71	20.0000	119	76 - 125			
n-Butylbenzene	21.6400	0.50	0.11	20.0000	108	81 - 125			
n-Propylbenzene	21.6300	0.50	0.10	20.0000	108	78 - 130			
Naphthalene	26.3800	0.50	0.41	20.0000	132	47 - 128			L4
o-Xylene	21.8500	0.50	0.13	20.0000	109	85 - 119			
sec-Butylbenzene	20.8300	0.50	0.09	20.0000	104	78 - 130			
Styrene	23.5600	0.50	0.13	20.0000	118	62 - 148			
tert-Butylbenzene	21.2200	0.50	0.09	20.0000	106	77 - 125			
Tetrachloroethene	21.1900	0.50	0.10	20.0000	106	73 - 120			
Toluene	22.0600	0.50	0.12	20.0000	110	79 - 119			
trans-1,2-Dichloroethene	21.9400	0.50	0.09	20.0000	110	70 - 129			
Trichloroethene	22.0100	0.50	0.10	20.0000	110	73 - 117			
Trichlorofluoromethane	18.5800	0.50	0.23	20.0000	92.9	59 - 135			
Vinyl chloride	22.2500	0.50	0.13	20.0000	111	58 - 132			
Surrogate: 1,2-Dichloroethane-d4	26.22			25.0000	105	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.48			25.0000	102	73 - 124			
Surrogate: Dibromofluoromethane	26.21			25.0000	105	78 - 129			
Surrogate: Toluene-d8	25.41			25.0000	102	84 - 117			

LCS Dup (B2H0857-BSD1)

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	23.3600	0.50	0.11	20.0000	117	79 - 116	3.17	20	L3
1,1,1-Trichloroethane	23.1100	0.50	0.21	20.0000	116	73 - 130	5.56	20	
1,1,2,2-Tetrachloroethane	24.5700	0.50	0.36	20.0000	123	71 - 122	3.39	20	L3
1,1,2-Trichloroethane	24.9100	0.50	0.25	20.0000	125	70 - 124	4.47	20	L3
1,1-Dichloroethane	23.3500	0.50	0.09	20.0000	117	69 - 128	1.90	20	
1,1-Dichloroethene	21.8900	0.50	0.13	20.0000	109	65 - 137	4.29	20	
1,1-Dichloropropene	21.9500	0.50	0.13	20.0000	110	74 - 129	4.95	20	
1,2,3-Trichloropropane	23.4200	0.50	0.39	20.0000	117	74 - 123	1.90	20	
1,2,3-Trichlorobenzene	26.0100	0.50	0.18	20.0000	130	59 - 130	2.85	20	L4



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

LCS Dup (B2H0857-BSD1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,2,4-Trichlorobenzene	25.0000	0.50	0.16	20.0000	125	65 - 125	4.37	20		
1,2,4-Trimethylbenzene	22.8800	0.50	0.14	20.0000	114	88 - 124	2.70	20		
1,2-Dibromo-3-chloropropane	24.2400	0.50	0.41	20.0000	121	61 - 127	4.64	20		
1,2-Dibromoethane	25.7200	0.50	0.24	20.0000	129	72 - 125	4.65	20		L3
1,2-Dichlorobenzene	23.3900	0.50	0.20	20.0000	117	84 - 113	2.16	20		L3
1,2-Dichloroethane	24.7700	0.50	0.20	20.0000	124	68 - 130	3.58	20		
1,2-Dichloropropane	23.9200	0.50	0.15	20.0000	120	77 - 121	4.49	20		
1,3,5-Trimethylbenzene	22.8700	0.50	0.13	20.0000	114	83 - 124	3.61	20		
1,3-Dichlorobenzene	23.6000	0.50	0.16	20.0000	118	83 - 112	3.54	20		L3
1,3-Dichloropropane	24.5700	0.50	0.21	20.0000	123	77 - 119	3.02	20		L3
1,4-Dichlorobenzene	22.9000	0.50	0.17	20.0000	114	79 - 115	2.57	20		
2,2-Dichloropropane	23.7400	0.50	0.38	20.0000	119	67 - 149	1.91	20		
2-Chlorotoluene	22.8100	0.50	0.11	20.0000	114	81 - 119	3.98	20		
4-Chlorotoluene	22.8100	0.50	0.12	20.0000	114	86 - 117	2.85	20		
4-Isopropyltoluene	22.5600	0.50	0.11	20.0000	113	82 - 131	4.49	20		
Benzene	23.8800	0.50	0.13	20.0000	119	75 - 124	5.60	20		
Bromobenzene	22.6800	0.50	0.21	20.0000	113	82 - 108	1.73	20		L3
Bromodichloromethane	24.6200	0.50	0.14	20.0000	123	80 - 120	5.42	20		L3
Bromoform	24.5600	0.50	0.20	20.0000	123	70 - 123	3.73	20		
Bromomethane	27.5800	0.50	0.40	20.0000	138	44 - 151	2.08	20		
Carbon tetrachloride	21.9600	0.50	0.09	20.0000	110	62 - 140	5.43	20		
Chlorobenzene	23.5400	0.50	0.13	20.0000	118	80 - 112	4.16	20		L3
Chloroethane	25.9000	0.50	0.15	20.0000	130	42 - 167	2.62	20		
Chloroform	24.9000	0.50	0.11	20.0000	124	77 - 122	4.98	20		L3
Chloromethane	24.6300	0.50	0.12	20.0000	123	33 - 153	5.94	20		
cis-1,2-Dichloroethene	23.7700	0.50	0.14	20.0000	119	75 - 121	3.21	20		
cis-1,3-Dichloropropene	24.8600	0.50	0.13	20.0000	124	73 - 127	5.07	20		
Dibromochloromethane	22.6800	0.50	0.16	20.0000	113	77 - 122	4.00	20		
Dibromomethane	23.9400	0.50	0.19	20.0000	120	75 - 121	1.56	20		
Dichlorodifluoromethane	15.9700	0.50	0.18	20.0000	79.8	0 - 171	14.2	20		
Ethylbenzene	23.1300	0.50	0.13	20.0000	116	82 - 119	2.85	20		
Hexachlorobutadiene	21.0100	0.50	0.15	20.0000	105	71 - 131	4.28	20		
Isopropylbenzene	22.3900	0.50	0.10	20.0000	112	75 - 126	4.01	20		
m,p-Xylene	47.0200	1.0	0.19	40.0000	118	86 - 119	3.42	20		
Methylene chloride	24.3300	1.0	0.71	20.0000	122	76 - 125	2.54	20		
n-Butylbenzene	22.4600	0.50	0.11	20.0000	112	81 - 125	3.72	20		
n-Propylbenzene	22.5900	0.50	0.10	20.0000	113	78 - 130	4.34	20		
Naphthalene	27.2700	0.50	0.41	20.0000	136	47 - 128	3.32	20		L4
o-Xylene	22.6000	0.50	0.13	20.0000	113	85 - 119	3.37	20		
sec-Butylbenzene	21.9400	0.50	0.09	20.0000	110	78 - 130	5.19	20		
Styrene	24.1500	0.50	0.13	20.0000	121	62 - 148	2.47	20		
tert-Butylbenzene	22.0000	0.50	0.09	20.0000	110	77 - 125	3.61	20		
Tetrachloroethene	22.0600	0.50	0.10	20.0000	110	73 - 120	4.02	20		
Toluene	23.3400	0.50	0.12	20.0000	117	79 - 119	5.64	20		
trans-1,2-Dichloroethene	22.8900	0.50	0.09	20.0000	114	70 - 129	4.24	20		



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

LCS Dup (B2H0857-BSD1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

Trichloroethene	23.2700	0.50	0.10	20.0000		116	73 - 117	5.57	20	
Trichlorofluoromethane	17.8000	0.50	0.23	20.0000		89.0	59 - 135	4.29	20	
Vinyl chloride	23.0000	0.50	0.13	20.0000		115	58 - 132	3.31	20	

Surrogate: 1,2-Dichloroethane-d4	25.41			25.0000		102	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.00			25.0000		100	73 - 124			
Surrogate: Dibromofluoromethane	25.60			25.0000		102	78 - 129			
Surrogate: Toluene-d8	25.10			25.0000		100	84 - 117			

Matrix Spike (B2H0857-MS1)

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	22.0700	0.50	0.11	20.0000	ND	110	81 - 133			
1,1,1-Trichloroethane	23.7400	0.50	0.21	20.0000	ND	119	93 - 149			
1,1,2,2-Tetrachloroethane	23.0600	0.50	0.36	20.0000	ND	115	69 - 151			
1,1,2-Trichloroethane	22.4000	0.50	0.25	20.0000	ND	112	78 - 130			
1,1-Dichloroethane	22.4800	0.50	0.09	20.0000	ND	112	68 - 135			
1,1-Dichloroethene	24.5500	0.50	0.13	20.0000	ND	123	77 - 134			
1,1-Dichloropropene	23.8100	0.50	0.13	20.0000	ND	119	91 - 138			
1,2,3-Trichloropropane	21.6000	0.50	0.39	20.0000	ND	108	77 - 136			
1,2,3-Trichlorobenzene	24.5600	0.50	0.18	20.0000	ND	123	72 - 129			
1,2,4-Trichlorobenzene	23.1900	0.50	0.16	20.0000	ND	116	64 - 135			
1,2,4-Trimethylbenzene	22.3500	0.50	0.14	20.0000	ND	112	10 - 179			
1,2-Dibromo-3-chloropropane	22.3100	0.50	0.41	20.0000	ND	112	62 - 153			
1,2-Dibromoethane	22.1700	0.50	0.24	20.0000	ND	111	80 - 132			
1,2-Dichlorobenzene	21.8800	0.50	0.20	20.0000	ND	109	81 - 131			
1,2-Dichloroethane	21.4400	0.50	0.20	20.0000	ND	107	68 - 146			
1,2-Dichloropropane	21.6700	0.50	0.15	20.0000	ND	108	74 - 136			
1,3,5-Trimethylbenzene	22.6000	0.50	0.13	20.0000	ND	113	66 - 149			
1,3-Dichlorobenzene	22.1800	0.50	0.16	20.0000	ND	111	79 - 128			
1,3-Dichloropropane	21.8900	0.50	0.21	20.0000	ND	109	80 - 129			
1,4-Dichlorobenzene	21.7700	0.50	0.17	20.0000	ND	109	84 - 121			
2,2-Dichloropropane	24.7900	0.50	0.38	20.0000	ND	124	63 - 179			
2-Chlorotoluene	22.0400	0.50	0.11	20.0000	ND	110	76 - 142			
4-Chlorotoluene	21.8400	0.50	0.12	20.0000	ND	109	72 - 152			
4-Isopropyltoluene	23.2900	0.50	0.11	20.0000	ND	116	84 - 141			
Benzene	22.5100	0.50	0.13	20.0000	ND	113	79 - 131			
Bromobenzene	21.6000	0.50	0.21	20.0000	ND	108	82 - 121			
Bromodichloromethane	22.4100	0.50	0.14	20.0000	ND	112	86 - 138			
Bromoform	22.0500	0.50	0.20	20.0000	ND	110	80 - 136			
Bromomethane	28.1100	0.50	0.40	20.0000	ND	141	35 - 194			
Carbon tetrachloride	24.5000	0.50	0.09	20.0000	ND	122	73 - 176			
Chlorobenzene	22.1000	0.50	0.13	20.0000	ND	110	81 - 124			
Chloroethane	26.1000	0.50	0.15	20.0000	ND	130	0 - 257			
Chloroform	22.8000	0.50	0.11	20.0000	ND	114	76 - 139			
Chloromethane	23.8600	0.50	0.12	20.0000	ND	119	27 - 144			
cis-1,2-Dichloroethene	22.5200	0.50	0.14	20.0000	ND	113	69 - 139			
cis-1,3-Dichloropropene	22.0700	0.50	0.13	20.0000	ND	110	67 - 149			



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike (B2H0857-MS1) - Continued

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

Dibromochloromethane	20.3000	0.50	0.16	20.0000	ND	102	91 - 131			
Dibromomethane	21.8200	0.50	0.19	20.0000	ND	109	70 - 134			
Dichlorodifluoromethane	26.0500	0.50	0.18	20.0000	ND	130	0 - 161			
Ethylbenzene	23.0700	0.50	0.13	20.0000	ND	115	89 - 134			
Hexachlorobutadiene	23.0200	0.50	0.15	20.0000	ND	115	73 - 137			
Isopropylbenzene	22.5800	0.50	0.10	20.0000	ND	113	72 - 152			
m,p-Xylene	45.5300	1.0	0.19	40.0000	ND	114	82 - 141			
Methylene chloride	21.3700	1.0	0.71	20.0000	ND	107	74 - 133			
n-Butylbenzene	23.2000	0.50	0.11	20.0000	ND	116	65 - 164			
n-Propylbenzene	22.9300	0.50	0.10	20.0000	ND	115	73 - 161			
Naphthalene	25.5400	0.50	0.41	20.0000	ND	128	59 - 105			M2
o-Xylene	21.5700	0.50	0.13	20.0000	ND	108	90 - 134			
sec-Butylbenzene	23.0500	0.50	0.09	20.0000	ND	115	80 - 157			
Styrene	23.1500	0.50	0.13	20.0000	ND	116	0 - 222			
tert-Butylbenzene	22.5500	0.50	0.09	20.0000	ND	113	88 - 141			
Tetrachloroethene	23.1500	0.50	0.10	20.0000	ND	116	75 - 136			
Toluene	22.3200	0.50	0.12	20.0000	ND	112	82 - 132			
trans-1,2-Dichloroethene	22.8900	0.50	0.09	20.0000	ND	114	65 - 135			
Trichloroethene	22.4900	0.50	0.10	20.0000	ND	112	75 - 128			
Trichlorofluoromethane	24.7900	0.50	0.23	20.0000	ND	124	89 - 143			
Vinyl chloride	25.3400	0.50	0.13	20.0000	ND	127	50 - 148			

Surrogate: 1,2-Dichloroethane-d4	25.64			25.0000		103	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.18			25.0000		101	73 - 124			
Surrogate: Dibromofluoromethane	25.24			25.0000		101	78 - 129			
Surrogate: Toluene-d8	24.93			25.0000		99.7	84 - 117			

Matrix Spike (B2H0857-MS2)

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	24.5600	0.50	0.11	20.0000	ND	123	81 - 133			
1,1,1-Trichloroethane	26.2000	0.50	0.21	20.0000	ND	131	93 - 149			
1,1,2,2-Tetrachloroethane	26.3500	0.50	0.36	20.0000	ND	132	69 - 151			
1,1,2-Trichloroethane	25.5700	0.50	0.25	20.0000	ND	128	78 - 130			
1,1-Dichloroethane	25.0700	0.50	0.09	20.0000	ND	125	68 - 135			
1,1-Dichloroethene	26.1300	0.50	0.13	20.0000	ND	131	77 - 134			
1,1-Dichloropropene	26.8100	0.50	0.13	20.0000	ND	134	91 - 138			
1,2,3-Trichloropropane	24.4200	0.50	0.39	20.0000	ND	122	77 - 136			
1,2,3-Trichlorobenzene	27.0100	0.50	0.18	20.0000	ND	135	72 - 129			M2
1,2,4-Trichlorobenzene	26.1200	0.50	0.16	20.0000	ND	131	64 - 135			
1,2,4-Trimethylbenzene	25.2200	0.50	0.14	20.0000	ND	126	10 - 179			
1,2-Dibromo-3-chloropropane	25.2300	0.50	0.41	20.0000	ND	126	62 - 153			
1,2-Dibromoethane	24.9700	0.50	0.24	20.0000	ND	125	80 - 132			
1,2-Dichlorobenzene	24.5800	0.50	0.20	20.0000	ND	123	81 - 131			
1,2-Dichloroethane	24.6100	0.50	0.20	20.0000	ND	123	68 - 146			
1,2-Dichloropropane	24.7900	0.50	0.15	20.0000	ND	124	74 - 136			
1,3,5-Trimethylbenzene	25.3600	0.50	0.13	20.0000	ND	127	66 - 149			
1,3-Dichlorobenzene	25.2100	0.50	0.16	20.0000	ND	126	79 - 128			



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike (B2H0857-MS2) - Continued

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,3-Dichloropropane	24.5200	0.50	0.21	20.0000	ND	123	80 - 129			
1,4-Dichlorobenzene	24.6700	0.50	0.17	20.0000	ND	123	84 - 121			M2
2,2-Dichloropropane	26.4300	0.50	0.38	20.0000	ND	132	63 - 179			
2-Chlorotoluene	24.8100	0.50	0.11	20.0000	ND	124	76 - 142			
4-Chlorotoluene	24.4800	0.50	0.12	20.0000	ND	122	72 - 152			
4-Isopropyltoluene	25.9600	0.50	0.11	20.0000	ND	130	84 - 141			
Benzene	25.6600	0.50	0.13	20.0000	ND	128	79 - 131			
Bromobenzene	24.3500	0.50	0.21	20.0000	ND	122	82 - 121			M2
Bromodichloromethane	25.8200	0.50	0.14	20.0000	ND	129	86 - 138			
Bromoform	24.7900	0.50	0.20	20.0000	ND	124	80 - 136			
Bromomethane	30.8900	0.50	0.40	20.0000	ND	154	35 - 194			
Carbon tetrachloride	27.8500	0.50	0.09	20.0000	ND	139	73 - 176			
Chlorobenzene	24.7600	0.50	0.13	20.0000	ND	124	81 - 124			
Chloroethane	27.7800	0.50	0.15	20.0000	ND	139	0 - 257			
Chloroform	27.6200	0.50	0.11	20.0000	0.580000	135	76 - 139			
Chloromethane	25.3600	0.50	0.12	20.0000	ND	127	27 - 144			
cis-1,2-Dichloroethene	24.4900	0.50	0.14	20.0000	ND	122	69 - 139			
cis-1,3-Dichloropropene	25.1900	0.50	0.13	20.0000	ND	126	67 - 149			
Dibromochloromethane	22.9900	0.50	0.16	20.0000	ND	115	91 - 131			
Dibromomethane	24.9600	0.50	0.19	20.0000	ND	125	70 - 134			
Dichlorodifluoromethane	27.0300	0.50	0.18	20.0000	ND	135	0 - 161			
Ethylbenzene	25.4400	0.50	0.13	20.0000	ND	127	89 - 134			
Hexachlorobutadiene	26.0200	0.50	0.15	20.0000	ND	130	73 - 137			
Isopropylbenzene	25.3300	0.50	0.10	20.0000	ND	127	72 - 152			
m,p-Xylene	51.1700	1.0	0.19	40.0000	ND	128	82 - 141			
Methylene chloride	23.7800	1.0	0.71	20.0000	ND	119	74 - 133			
n-Butylbenzene	26.2700	0.50	0.11	20.0000	ND	131	65 - 164			
n-Propylbenzene	25.7100	0.50	0.10	20.0000	ND	129	73 - 161			
Naphthalene	28.7100	0.50	0.41	20.0000	ND	144	59 - 105			M2
o-Xylene	25.3700	0.50	0.13	20.0000	ND	127	90 - 134			
sec-Butylbenzene	25.7300	0.50	0.09	20.0000	ND	129	80 - 157			
Styrene	25.7500	0.50	0.13	20.0000	ND	129	0 - 222			
tert-Butylbenzene	25.3600	0.50	0.09	20.0000	ND	127	88 - 141			
Tetrachloroethene	26.0700	0.50	0.10	20.0000	ND	130	75 - 136			
Toluene	25.4900	0.50	0.12	20.0000	ND	127	82 - 132			
trans-1,2-Dichloroethene	24.7100	0.50	0.09	20.0000	ND	124	65 - 135			
Trichloroethene	25.2300	0.50	0.10	20.0000	ND	126	75 - 128			
Trichlorofluoromethane	26.4800	0.50	0.23	20.0000	ND	132	89 - 143			
Vinyl chloride	27.4900	0.50	0.13	20.0000	ND	137	50 - 148			

Surrogate: 1,2-Dichloroethane-d4

25.20

25.0000

101

64 - 155

Surrogate: 4-Bromofluorobenzene

25.05

25.0000

100

73 - 124

Surrogate: Dibromofluoromethane

25.38

25.0000

102

78 - 129

Surrogate: Toluene-d8

25.57

25.0000

102

84 - 117

Matrix Spike Dup (B2H0857-MSD1)

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0857-MSD1) - Continued

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	23.4300	0.50	0.11	20.0000	ND	117	81 - 133	5.98	20	
1,1,1-Trichloroethane	25.4300	0.50	0.21	20.0000	ND	127	93 - 149	6.87	20	
1,1,2,2-Tetrachloroethane	25.0100	0.50	0.36	20.0000	ND	125	69 - 151	8.11	20	
1,1,2-Trichloroethane	23.9500	0.50	0.25	20.0000	ND	120	78 - 130	6.69	20	
1,1-Dichloroethane	24.0300	0.50	0.09	20.0000	ND	120	68 - 135	6.67	20	
1,1-Dichloroethene	25.4700	0.50	0.13	20.0000	ND	127	77 - 134	3.68	20	
1,1-Dichloropropene	26.0200	0.50	0.13	20.0000	ND	130	91 - 138	8.87	20	
1,2,3-Trichloropropane	22.4800	0.50	0.39	20.0000	ND	112	77 - 136	3.99	20	
1,2,3-Trichlorobenzene	25.6800	0.50	0.18	20.0000	ND	128	72 - 129	4.46	20	
1,2,4-Trichlorobenzene	24.9000	0.50	0.16	20.0000	ND	124	64 - 135	7.11	20	
1,2,4-Trimethylbenzene	23.5300	0.50	0.14	20.0000	ND	118	10 - 179	5.14	20	
1,2-Dibromo-3-chloropropane	24.1300	0.50	0.41	20.0000	ND	121	62 - 153	7.84	20	
1,2-Dibromoethane	23.9400	0.50	0.24	20.0000	ND	120	80 - 132	7.68	20	
1,2-Dichlorobenzene	23.2500	0.50	0.20	20.0000	ND	116	81 - 131	6.07	20	
1,2-Dichloroethane	23.3400	0.50	0.20	20.0000	ND	117	68 - 146	8.49	20	
1,2-Dichloropropane	23.7800	0.50	0.15	20.0000	ND	119	74 - 136	9.28	20	
1,3,5-Trimethylbenzene	23.8600	0.50	0.13	20.0000	ND	119	66 - 149	5.42	20	
1,3-Dichlorobenzene	23.6600	0.50	0.16	20.0000	ND	118	79 - 128	6.46	20	
1,3-Dichloropropane	23.4300	0.50	0.21	20.0000	ND	117	80 - 129	6.80	20	
1,4-Dichlorobenzene	23.2300	0.50	0.17	20.0000	ND	116	84 - 121	6.49	20	
2,2-Dichloropropane	25.8100	0.50	0.38	20.0000	ND	129	63 - 179	4.03	20	
2-Chlorotoluene	23.3800	0.50	0.11	20.0000	ND	117	76 - 142	5.90	20	
4-Chlorotoluene	23.0900	0.50	0.12	20.0000	ND	115	72 - 152	5.56	20	
4-Isopropyltoluene	24.7300	0.50	0.11	20.0000	ND	124	84 - 141	6.00	20	
Benzene	24.5100	0.50	0.13	20.0000	ND	123	79 - 131	8.51	20	
Bromobenzene	22.9500	0.50	0.21	20.0000	ND	115	82 - 121	6.06	20	
Bromodichloromethane	23.7400	0.50	0.14	20.0000	ND	119	86 - 138	5.76	20	
Bromoform	23.6600	0.50	0.20	20.0000	ND	118	80 - 136	7.04	20	
Bromomethane	30.3800	0.50	0.40	20.0000	ND	152	35 - 194	7.76	20	
Carbon tetrachloride	26.3900	0.50	0.09	20.0000	ND	132	73 - 176	7.43	20	
Chlorobenzene	23.7100	0.50	0.13	20.0000	ND	119	81 - 124	7.03	20	
Chloroethane	28.0100	0.50	0.15	20.0000	ND	140	0 - 257	7.06	20	
Chloroform	24.7200	0.50	0.11	20.0000	ND	124	76 - 139	8.08	20	
Chloromethane	24.9000	0.50	0.12	20.0000	ND	124	27 - 144	4.27	20	
cis-1,2-Dichloroethene	23.7800	0.50	0.14	20.0000	ND	119	69 - 139	5.44	20	
cis-1,3-Dichloropropene	23.7200	0.50	0.13	20.0000	ND	119	67 - 149	7.21	20	
Dibromochloromethane	21.6600	0.50	0.16	20.0000	ND	108	91 - 131	6.48	20	
Dibromomethane	22.9600	0.50	0.19	20.0000	ND	115	70 - 134	5.09	20	
Dichlorodifluoromethane	27.5400	0.50	0.18	20.0000	ND	138	0 - 161	5.56	20	
Ethylbenzene	24.6000	0.50	0.13	20.0000	ND	123	89 - 134	6.42	20	
Hexachlorobutadiene	24.7300	0.50	0.15	20.0000	ND	124	73 - 137	7.16	20	
Isopropylbenzene	24.0400	0.50	0.10	20.0000	ND	120	72 - 152	6.26	20	
m,p-Xylene	49.3100	1.0	0.19	40.0000	ND	123	82 - 141	7.97	20	
Methylene chloride	22.7600	1.0	0.71	20.0000	ND	114	74 - 133	6.30	20	
n-Butylbenzene	24.6900	0.50	0.11	20.0000	ND	123	65 - 164	6.22	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0857-MSD1) - Continued

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

n-Propylbenzene	24.1100	0.50	0.10	20.0000	ND	121	73 - 161	5.02	20	
Naphthalene	27.2200	0.50	0.41	20.0000	ND	136	59 - 105	6.37	20	M2
o-Xylene	23.1100	0.50	0.13	20.0000	ND	116	90 - 134	6.89	20	
sec-Butylbenzene	24.2800	0.50	0.09	20.0000	ND	121	80 - 157	5.20	20	
Styrene	24.5000	0.50	0.13	20.0000	ND	122	0 - 222	5.67	20	
tert-Butylbenzene	23.8200	0.50	0.09	20.0000	ND	119	88 - 141	5.48	20	
Tetrachloroethene	24.8700	0.50	0.10	20.0000	ND	124	75 - 136	7.16	20	
Toluene	24.2400	0.50	0.12	20.0000	ND	121	82 - 132	8.25	20	
trans-1,2-Dichloroethene	24.1500	0.50	0.09	20.0000	ND	121	65 - 135	5.36	20	
Trichloroethene	23.8500	0.50	0.10	20.0000	ND	119	75 - 128	5.87	20	
Trichlorofluoromethane	26.1000	0.50	0.23	20.0000	ND	130	89 - 143	5.15	20	
Vinyl chloride	26.7300	0.50	0.13	20.0000	ND	134	50 - 148	5.34	20	

Surrogate: 1,2-Dichloroethane-d4	25.31			25.0000		101	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.37			25.0000		101	73 - 124			
Surrogate: Dibromofluoromethane	25.96			25.0000		104	78 - 129			
Surrogate: Toluene-d8	24.83			25.0000		99.3	84 - 117			

Matrix Spike Dup (B2H0857-MSD2)

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	23.1000	0.50	0.11	20.0000	ND	116	81 - 133	6.13	20	
1,1,1-Trichloroethane	24.8500	0.50	0.21	20.0000	ND	124	93 - 149	5.29	20	
1,1,2,2-Tetrachloroethane	23.4900	0.50	0.36	20.0000	ND	117	69 - 151	11.5	20	
1,1,2-Trichloroethane	22.9300	0.50	0.25	20.0000	ND	115	78 - 130	10.9	20	
1,1-Dichloroethane	23.3800	0.50	0.09	20.0000	ND	117	68 - 135	6.98	20	
1,1-Dichloroethene	24.5200	0.50	0.13	20.0000	ND	123	77 - 134	6.36	20	
1,1-Dichloropropene	24.3500	0.50	0.13	20.0000	ND	122	91 - 138	9.62	20	
1,2,3-Trichloropropane	21.9800	0.50	0.39	20.0000	ND	110	77 - 136	10.5	20	
1,2,3-Trichlorobenzene	24.8700	0.50	0.18	20.0000	ND	124	72 - 129	8.25	20	
1,2,4-Trichlorobenzene	23.5600	0.50	0.16	20.0000	ND	118	64 - 135	10.3	20	
1,2,4-Trimethylbenzene	22.3800	0.50	0.14	20.0000	ND	112	10 - 179	11.9	20	
1,2-Dibromo-3-chloropropane	22.6200	0.50	0.41	20.0000	ND	113	62 - 153	10.9	20	
1,2-Dibromoethane	22.5100	0.50	0.24	20.0000	ND	113	80 - 132	10.4	20	
1,2-Dichlorobenzene	22.7200	0.50	0.20	20.0000	ND	114	81 - 131	7.86	20	
1,2-Dichloroethane	22.4600	0.50	0.20	20.0000	ND	112	68 - 146	9.14	20	
1,2-Dichloropropane	22.8700	0.50	0.15	20.0000	ND	114	74 - 136	8.06	20	
1,3,5-Trimethylbenzene	23.0300	0.50	0.13	20.0000	ND	115	66 - 149	9.63	20	
1,3-Dichlorobenzene	22.7700	0.50	0.16	20.0000	ND	114	79 - 128	10.2	20	
1,3-Dichloropropane	22.6600	0.50	0.21	20.0000	ND	113	80 - 129	7.88	20	
1,4-Dichlorobenzene	22.2000	0.50	0.17	20.0000	ND	111	84 - 121	10.5	20	
2,2-Dichloropropane	24.8600	0.50	0.38	20.0000	ND	124	63 - 179	6.12	20	
2-Chlorotoluene	22.5600	0.50	0.11	20.0000	ND	113	76 - 142	9.50	20	
4-Chlorotoluene	22.3600	0.50	0.12	20.0000	ND	112	72 - 152	9.05	20	
4-Isopropyltoluene	23.5200	0.50	0.11	20.0000	ND	118	84 - 141	9.86	20	
Benzene	23.4800	0.50	0.13	20.0000	ND	117	79 - 131	8.87	20	
Bromobenzene	22.0200	0.50	0.21	20.0000	ND	110	82 - 121	10.0	20	
Bromodichloromethane	23.4300	0.50	0.14	20.0000	ND	117	86 - 138	9.71	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0857-MSD2) - Continued

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

Bromoform	23.0900	0.50	0.20	20.0000	ND	115	80 - 136	7.10	20	
Bromomethane	29.6000	0.50	0.40	20.0000	ND	148	35 - 194	4.27	20	
Carbon tetrachloride	25.3200	0.50	0.09	20.0000	ND	127	73 - 176	9.52	20	
Chlorobenzene	23.0100	0.50	0.13	20.0000	ND	115	81 - 124	7.33	20	
Chloroethane	27.0900	0.50	0.15	20.0000	ND	135	0 - 257	2.52	20	
Chloroform	25.7200	0.50	0.11	20.0000	0.580000	126	76 - 139	7.12	20	
Chloromethane	24.9800	0.50	0.12	20.0000	ND	125	27 - 144	1.51	20	
cis-1,2-Dichloroethene	23.2700	0.50	0.14	20.0000	ND	116	69 - 139	5.11	20	
cis-1,3-Dichloropropene	22.5900	0.50	0.13	20.0000	ND	113	67 - 149	10.9	20	
Dibromochloromethane	21.3500	0.50	0.16	20.0000	ND	107	91 - 131	7.40	20	
Dibromomethane	22.6400	0.50	0.19	20.0000	ND	113	70 - 134	9.75	20	
Dichlorodifluoromethane	25.2300	0.50	0.18	20.0000	ND	126	0 - 161	6.89	20	
Ethylbenzene	23.6900	0.50	0.13	20.0000	ND	118	89 - 134	7.12	20	
Hexachlorobutadiene	23.7100	0.50	0.15	20.0000	ND	119	73 - 137	9.29	20	
Isopropylbenzene	23.1100	0.50	0.10	20.0000	ND	116	72 - 152	9.17	20	
m,p-Xylene	47.2600	1.0	0.19	40.0000	ND	118	82 - 141	7.94	20	
Methylene chloride	22.2700	1.0	0.71	20.0000	ND	111	74 - 133	6.56	20	
n-Butylbenzene	23.6000	0.50	0.11	20.0000	ND	118	65 - 164	10.7	20	
n-Propylbenzene	23.3600	0.50	0.10	20.0000	ND	117	73 - 161	9.58	20	
Naphthalene	25.6900	0.50	0.41	20.0000	ND	128	59 - 105	11.1	20	M2
o-Xylene	23.3300	0.50	0.13	20.0000	ND	117	90 - 134	8.38	20	
sec-Butylbenzene	23.1000	0.50	0.09	20.0000	ND	116	80 - 157	10.8	20	
Styrene	23.3100	0.50	0.13	20.0000	ND	117	0 - 222	9.95	20	
tert-Butylbenzene	23.0100	0.50	0.09	20.0000	ND	115	88 - 141	9.72	20	
Tetrachloroethene	24.3400	0.50	0.10	20.0000	ND	122	75 - 136	6.86	20	
Toluene	23.3100	0.50	0.12	20.0000	ND	117	82 - 132	8.93	20	
trans-1,2-Dichloroethene	23.8100	0.50	0.09	20.0000	ND	119	65 - 135	3.71	20	
Trichloroethene	23.1000	0.50	0.10	20.0000	ND	116	75 - 128	8.81	20	
Trichlorofluoromethane	24.9100	0.50	0.23	20.0000	ND	125	89 - 143	6.11	20	
Vinyl chloride	25.7100	0.50	0.13	20.0000	ND	129	50 - 148	6.69	20	
Surrogate: 1,2-Dichloroethane-d4	25.46			25.0000		102	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.86			25.0000		103	73 - 124			
Surrogate: Dibromofluoromethane	25.80			25.0000		103	78 - 129			
Surrogate: Toluene-d8	25.08			25.0000		100	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0843 - MSSEMI_W

Blank (B2H0843-BLK1)

Prepared: 8/5/2022 Analyzed: 8/9/2022

1,4-Dioxane ND 2.0 0.84

Surrogate: 1,2-Dichlorobenzene-d4	111.3		100.000	111	17 - 119
Surrogate: 2-Fluorobiphenyl	83.94		100.000	83.9	10 - 133
Surrogate: 4-Terphenyl-d14	81.75		100.000	81.8	5 - 139
Surrogate: Nitrobenzene-d5	91.49		100.000	91.5	13 - 150

LCS (B2H0843-BS1)

Prepared: 8/5/2022 Analyzed: 8/9/2022

1,4-Dioxane 104.100 2.0 0.84 100.000 104 75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	93.45		100.000	93.4	17 - 119
Surrogate: 2-Fluorobiphenyl	85.92		100.000	85.9	10 - 133
Surrogate: 4-Terphenyl-d14	83.95		100.000	84.0	5 - 139
Surrogate: Nitrobenzene-d5	100.1		100.000	100	13 - 150

LCS Dup (B2H0843-BSD1)

Prepared: 8/5/2022 Analyzed: 8/9/2022

1,4-Dioxane 105.920 2.0 0.84 100.000 106 75 - 155 1.73 20

Surrogate: 1,2-Dichlorobenzene-d4	113.4		100.000	113	17 - 119
Surrogate: 2-Fluorobiphenyl	83.93		100.000	83.9	10 - 133
Surrogate: 4-Terphenyl-d14	85.96		100.000	86.0	5 - 139
Surrogate: Nitrobenzene-d5	97.27		100.000	97.3	13 - 150



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/15/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0851 - MSSEMI_W

Blank (B2H0851-BLK1)

Prepared: 8/8/2022 Analyzed: 8/11/2022

1,4-Dioxane ND 0.20 0.05

Surrogate: 1,2-Dichlorobenzene-d4	1.109		1.00000	111	13 - 99	S12
Surrogate: 2-Fluorobiphenyl	0.9183		1.00000	91.8	8 - 111	
Surrogate: 4-Terphenyl-d14	0.9598		1.00000	96.0	12 - 113	
Surrogate: Nitrobenzene-d5	1.165		1.00000	117	15 - 121	

LCS (B2H0851-BS1)

Prepared: 8/8/2022 Analyzed: 8/11/2022

1,4-Dioxane 1.11796 0.20 0.05 1.00000 112 75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	1.064		1.00000	106	13 - 99	S12
Surrogate: 2-Fluorobiphenyl	0.8876		1.00000	88.8	8 - 111	
Surrogate: 4-Terphenyl-d14	1.035		1.00000	104	12 - 113	
Surrogate: Nitrobenzene-d5	1.170		1.00000	117	15 - 121	

Matrix Spike (B2H0851-MS1)

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/11/2022

1,4-Dioxane 1.16266 0.20 0.05 1.00000 ND 116 75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	1.066		1.00000	107	13 - 99	S12
Surrogate: 2-Fluorobiphenyl	0.9912		1.00000	99.1	8 - 111	
Surrogate: 4-Terphenyl-d14	1.008		1.00000	101	12 - 113	
Surrogate: Nitrobenzene-d5	1.102		1.00000	110	15 - 121	

Matrix Spike Dup (B2H0851-MSD1)

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/11/2022

1,4-Dioxane 1.09469 0.20 0.05 1.00000 ND 109 75 - 155 6.02 20

Surrogate: 1,2-Dichlorobenzene-d4	1.065		1.00000	107	13 - 99	S12
Surrogate: 2-Fluorobiphenyl	0.9329		1.00000	93.3	8 - 111	
Surrogate: 4-Terphenyl-d14	1.056		1.00000	106	12 - 113	
Surrogate: Nitrobenzene-d5	1.152		1.00000	115	15 - 121	

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858.455.6500

Fax 858.455.6533

SAMPLE COLLECTION		
LAB ID	SAMPLE ID	Date
1	TS-080222A	08.02.22
2	MW-35C	11.35
3	MW-33	14.40
4	MW-3300	15.45
5	MW-34C	16.05
	MW-42	08/23/22 10:10
	MW-32A	

SAMPLE COLLECTION		
LAB ID	SAMPLE ID	Date
1	TS-080222A	08.02.22
2	MW-35C	11.35
3	MW-33	14.40
4	MW-3300	15.45
5	MW-34C	16.05
	MW-42	08/23/22 10:10
	MW-32A	

Total number of containers per analysis:

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
Steve Netto / H&A	08.03.22 1635	Steve Netto / ATL	8/3/22 1635
Steve Netto / H&A	08.03.22 1715	Steve Netto / ATL	8/3/22 1715

Instructions

Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
Note applicable preservatives, special instructions, and deviations from typical environmental samples.
Consult project QA documents for specific instructions.

2202071

2.806

Date: 08.02.22
Page 1 of 3

2.88

MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED	Expected Concentration Range (ppb) for VOA's	SPECIAL HANDLING	REMARKS
Groundwater	Hydrochloric Acid (HCl)	40-ml VOA	1,4-Dioxane 8270 SIM	0 - 10	Standard TAT	Report J Flags
Lab prepared water		1 L Amber	1,4-Dioxane 8270 MOD	10 - 100	48 hr TAT	
				100 - 1,000	24 hr TAT	
				>1,000	Level IV Data Validation Requested	
					MS/MSD Requested	

No. of containers correct
Received in good condition
Custody seals secure
Conforms to COC document

Send Results to:
Steve Netto
3131 Camino del Rio N
Suite 355
San Diego, CA 92108
Ph: 858.455.5400
snetto@hargis.com

2.8 Temperature on receipt

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858.455.6500

Fax 858.455.6533

Sampled By: D. Seale		
SAMPLE COLLECTION		
LAB ID	SAMPLE ID	Date Time
6	MW-41L	08.03.22 1010
7	MW-32A	1158
8	MW-32C	1500
9	MW-16	1630

Total number of containers per analysis:

Relinquished By: / Company:

Date / Time Received By: / Company

Date / Time

Steve Netto / H + A

08.03.22 1635

Steve Netto / ATL

8/13/22 1625

Relinquished By: / Company:

Date / Time Received By: / Company

Date / Time

Steve Netto / ATL

8/13/22 1715

Steve Netto / ATL

8/13/22 1715

Instructions

Fill out form completely and sign only after verified for completeness
complete in ballpoint pen. Draw one line through error, initial and date correction
indicate the number of sample containers in analytical request space; indicate choice with ✓ or x
note applicable preservatives, special instructions, and deviations from typical environmental samples.
consult project QA documents for specific instructions.

2202071

Date: 08.03.22
Page 2 of 3

2.8°C

MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED	Expected Concentration Range (ppb) for VOA's	SPECIAL HANDLING	REMARKS
Groundwater	Lab prepared water	40-ml VOA	VOCs by EPA 8260B	0 - 10	Standard TAT	Report J Flags
Hydrochloric Acid (HCl)	Ice	1 L Amber	1,4 Dioxane 8270 SIM	10 - 100	48 hr TAT	
			1,4-Dioxane 8270 MOD	100 - 1,000	24 hr TAT	
				> 1,000	Level IV Data Validation Requested	
					MS/MSD Requested	

Total No. of Containers:

No. of containers correct
Received in good condition
Custody seals secure
Conforms to COC document

Send Results to:

Steve Netto

3131 Camino del Rio N

Suite 355

San Diego, CA 92108

Ph: 858.455.5400

snetto@hargis.com

Temperature on receipt

28

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858.455.6500

Fax 858.455.6533

SAMPLE COLLECTION		
LAB ID	SAMPLE ID	Date Time
10K	MW-26C	8/2/22 1132
11K	MW-09	1509
12K	MW-08	1617
13K	MW-32B	8/3/22 1001
14K	MW-15	1305
15K	MW-21	1400
16K	EW-01	8/3/22 1421
17K	EW-0100	1423
18K	RB-080322	1450

Sampled By: A. DONNELLY

MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED	Expected Concentration Range (ppb) for VOAs	SPECIAL HANDLING	REMARKS
Groundwater	Hydrochloric Acid (HCl)	40-ml VOA	1,4-Dioxane 8270 SIM	0 - 10	Standard TAT	Report J Flags
Lab prepared water		1 L Amber	1,4-Dioxane 8270 MOD	10 - 100	48 hr TAT	
			VOCs by EPA 8260B	100 - 1,000	24 hr TAT	
				>1,000	Level IV Data Validation Requested	
					MS/MSD Requested	

Laboratory
ATL
Attn: Edward Bae
3257 Walnut Ave
Signal Hill, CA 90755
562-989-4045

Total number of containers per analysis:

Relinquished By: / Company:

Date / Time Received By: / Company

Date / Time

No. of containers correct
Received in good condition
Custody seals secure
Conforms to COC document

Send Results to:

Steve Netto

3131 Camino del Rio N
Suite 355

San Diego, CA 92108

Ph: 858.455.5400

snetto@hargis.com

Instructions

Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
Note applicable preservatives, special instructions, and deviations from typical environmental samples.
Consult project QA documents for specific instructions.

August 16, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

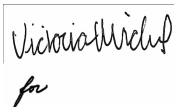
ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 2202081
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on August 04, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,



Victoria Michel, Project Assistant
Victoria.Michel@atlglobal.com
Authorized to Release on 08/16/22 15:51 on Behalf of



Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-080422A	2202081-01	Water	8/04/22 7:30	8/04/22 16:50
MW-42	2202081-02	Water	8/03/22 10:10	8/04/22 16:50
MW-32A	2202081-03	Water	8/03/22 11:58	8/04/22 16:50
MW-32C	2202081-04	Water	8/03/22 15:00	8/04/22 16:50
MW-39	2202081-05	Water	8/04/22 9:57	8/04/22 16:50
MW-36	2202081-06	Water	8/04/22 11:48	8/04/22 16:50
MW-3600	2202081-07	Water	8/04/22 12:30	8/04/22 16:50
MW-34A	2202081-08	Water	8/04/22 13:58	8/04/22 16:50
MW-34B	2202081-09	Water	8/04/22 14:23	8/04/22 16:50
MW-41	2202081-10	Water	8/04/22 15:16	8/04/22 16:50
MW-28	2202081-11	Water	8/04/22 8:57	8/04/22 16:50
MW-20	2202081-12	Water	8/04/22 11:54	8/04/22 16:50
RB-080422	2202081-13	Water	8/04/22 12:20	8/04/22 16:50
MW-18	2202081-14	Water	8/04/22 15:18	8/04/22 16:50



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San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

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Notes and Definitions

S15	Surrogate recovery outside laboratory acceptance limit. However, the surrogate is not associated with the target analyte.
S12	Surrogate recovery outside in-house established limit but within method default criteria.
S1	Surrogate recovery was above laboratory acceptance limit. No associated target analyte was detected in the sample.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
L3	Laboratory control sample outside in-house established limits but within method criteria.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
H3	Initial analysis within holding time. Reanalysis was past holding time.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: TB-080422A

Lab ID: 2202081-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:52	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 14:52	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 14:52	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 14:52	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:52	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 14:52	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 14:52	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 14:52	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 14:52	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 14:52	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 14:52	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:52	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 14:52	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:52	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 14:52	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 14:52	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 14:52	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 14:52	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:52	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 14:52	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:52	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 14:52	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 14:52	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 14:52	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 14:52	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 14:52	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: TB-080422A

Lab ID: 2202081-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 14:52	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:52	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 14:52	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 14:52	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 14:52	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:52	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 14:52	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:52	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:52	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:52	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 14:52	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 14:52	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 14:52	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 14:52	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 14:52	
Surrogate: 1,2-Dichloroethane-d4	100 %	64 - 155			B2H0849	08/08/2022	08/08/22 14:52	
Surrogate: 4-Bromofluorobenzene	98.7 %	73 - 124			B2H0849	08/08/2022	08/08/22 14:52	
Surrogate: Dibromofluoromethane	101 %	78 - 129			B2H0849	08/08/2022	08/08/22 14:52	
Surrogate: Toluene-d8	101 %	84 - 117			B2H0849	08/08/2022	08/08/22 14:52	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-42

Lab ID: 2202081-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 17:42	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 17:42	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 17:42	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 17:42	
1,1-Dichloroethane	0.76	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 17:42	
1,1-Dichloroethene	52	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 17:42	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 17:42	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 17:42	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 17:42	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 17:42	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 17:42	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 17:42	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 17:42	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 17:42	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 17:42	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 17:42	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 17:42	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 17:42	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 17:42	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 17:42	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 17:42	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 17:42	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 17:42	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 17:42	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 17:42	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 17:42	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-42

Lab ID: 2202081-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 17:42	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 17:42	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 17:42	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 17:42	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 17:42	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 17:42	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 17:42	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 17:42	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 17:42	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 17:42	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 17:42	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 17:42	
Trichloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 17:42	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 17:42	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 17:42	
Surrogate: 1,2-Dichloroethane-d4	107 %	64 - 155			B2H0857	08/09/2022	08/09/22 17:42	
Surrogate: 4-Bromofluorobenzene	97.0 %	73 - 124			B2H0857	08/09/2022	08/09/22 17:42	
Surrogate: Dibromofluoromethane	104 %	78 - 129			B2H0857	08/09/2022	08/09/22 17:42	
Surrogate: Toluene-d8	103 %	84 - 117			B2H0857	08/09/2022	08/09/22 17:42	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	2.1	0.20	0.05	1	B2H0932	08/15/2022	08/16/22 12:20	H3
Surrogate: 1,2-Dichlorobenzene-d4	108 %	13 - 99			B2H0932	08/15/2022	08/16/22 12:20	S12
Surrogate: 2-Fluorobiphenyl	93.1 %	8 - 111			B2H0932	08/15/2022	08/16/22 12:20	
Surrogate: 4-Terphenyl-d14	127 %	12 - 113			B2H0932	08/15/2022	08/16/22 12:20	S12
Surrogate: Nitrobenzene-d5	108 %	15 - 121			B2H0932	08/15/2022	08/16/22 12:20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-32A

Lab ID: 2202081-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:19	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 18:19	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 18:19	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 18:19	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:19	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 18:19	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 18:19	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 18:19	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 18:19	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 18:19	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 18:19	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:19	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 18:19	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:19	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 18:19	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 18:19	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 18:19	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 18:19	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:19	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 18:19	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:19	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 18:19	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 18:19	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 18:19	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 18:19	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 18:19	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-32A

Lab ID: 2202081-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 18:19	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:19	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 18:19	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 18:19	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:19	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:19	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 18:19	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:19	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:19	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:19	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 18:19	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:19	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:19	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 18:19	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:19	
Surrogate: 1,2-Dichloroethane-d4	107 %	64 - 155			B2H0849	08/08/2022	08/08/22 18:19	
Surrogate: 4-Bromofluorobenzene	99.1 %	73 - 124			B2H0849	08/08/2022	08/08/22 18:19	
Surrogate: Dibromofluoromethane	105 %	78 - 129			B2H0849	08/08/2022	08/08/22 18:19	
Surrogate: Toluene-d8	100 %	84 - 117			B2H0849	08/08/2022	08/08/22 18:19	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0932	08/15/2022	08/16/22 12:50	H3
Surrogate: 1,2-Dichlorobenzene-d4	109 %	13 - 99			B2H0932	08/15/2022	08/16/22 12:50	S12
Surrogate: 2-Fluorobiphenyl	87.7 %	8 - 111			B2H0932	08/15/2022	08/16/22 12:50	
Surrogate: 4-Terphenyl-d14	134 %	12 - 113			B2H0932	08/15/2022	08/16/22 12:50	S1
Surrogate: Nitrobenzene-d5	122 %	15 - 121			B2H0932	08/15/2022	08/16/22 12:50	S12



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-32C

Lab ID: 2202081-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:14	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 14:14	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 14:14	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 14:14	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:14	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 14:14	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 14:14	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 14:14	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 14:14	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 14:14	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 14:14	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:14	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 14:14	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:14	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 14:14	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 14:14	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 14:14	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 14:14	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:14	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 14:14	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:14	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 14:14	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 14:14	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 14:14	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 14:14	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 14:14	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-32C

Lab ID: 2202081-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 14:14	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:14	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 14:14	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 14:14	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:14	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:14	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 14:14	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:14	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:14	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:14	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 14:14	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:14	
Trichloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:14	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 14:14	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:14	
Surrogate: 1,2-Dichloroethane-d4	105 %	64 - 155			B2H0857	08/09/2022	08/09/22 14:14	
Surrogate: 4-Bromofluorobenzene	98.4 %	73 - 124			B2H0857	08/09/2022	08/09/22 14:14	
Surrogate: Dibromofluoromethane	102 %	78 - 129			B2H0857	08/09/2022	08/09/22 14:14	
Surrogate: Toluene-d8	103 %	84 - 117			B2H0857	08/09/2022	08/09/22 14:14	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0932	08/15/2022	08/16/22 13:20	H3
Surrogate: 1,2-Dichlorobenzene-d4	105 %	13 - 99			B2H0932	08/15/2022	08/16/22 13:20	S12
Surrogate: 2-Fluorobiphenyl	96.3 %	8 - 111			B2H0932	08/15/2022	08/16/22 13:20	
Surrogate: 4-Terphenyl-d14	111 %	12 - 113			B2H0932	08/15/2022	08/16/22 13:20	
Surrogate: Nitrobenzene-d5	117 %	15 - 121			B2H0932	08/15/2022	08/16/22 13:20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-39

Lab ID: 2202081-05

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:45	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 18:45	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 18:45	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 18:45	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:45	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 18:45	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 18:45	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 18:45	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 18:45	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 18:45	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 18:45	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:45	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 18:45	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:45	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 18:45	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 18:45	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 18:45	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 18:45	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:45	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 18:45	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:45	
Chloromethane	0.23	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 18:45	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 18:45	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 18:45	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 18:45	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 18:45	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-39

Lab ID: 2202081-05

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 18:45	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:45	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 18:45	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 18:45	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 18:45	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:45	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 18:45	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:45	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:45	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:45	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 18:45	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 18:45	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 18:45	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 18:45	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 18:45	
Surrogate: 1,2-Dichloroethane-d4	101 %	64 - 155			B2H0849	08/08/2022	08/08/22 18:45	
Surrogate: 4-Bromofluorobenzene	96.5 %	73 - 124			B2H0849	08/08/2022	08/08/22 18:45	
Surrogate: Dibromofluoromethane	101 %	78 - 129			B2H0849	08/08/2022	08/08/22 18:45	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0849	08/08/2022	08/08/22 18:45	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0932	08/15/2022	08/16/22 13:51	H3
Surrogate: 1,2-Dichlorobenzene-d4	111 %	13 - 99			B2H0932	08/15/2022	08/16/22 13:51	S12
Surrogate: 2-Fluorobiphenyl	88.5 %	8 - 111			B2H0932	08/15/2022	08/16/22 13:51	
Surrogate: 4-Terphenyl-d14	121 %	12 - 113			B2H0932	08/15/2022	08/16/22 13:51	S12
Surrogate: Nitrobenzene-d5	120 %	15 - 121			B2H0932	08/15/2022	08/16/22 13:51	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-36

Lab ID: 2202081-06

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:07	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:07	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 18:07	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 18:07	
1,1-Dichloroethane	0.85	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:07	
1,1-Dichloroethene	99	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:07	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:07	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:07	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:07	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 18:07	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 18:07	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:07	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:07	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:07	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:07	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:07	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:07	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 18:07	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:07	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:07	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:07	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:07	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:07	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:07	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 18:07	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 18:07	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-36

Lab ID: 2202081-06

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:07	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:07	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 18:07	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 18:07	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:07	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:07	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 18:07	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:07	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:07	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:07	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:07	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:07	
Trichloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:07	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 18:07	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:07	
Surrogate: 1,2-Dichloroethane-d4	108 %	64 - 155			B2H0857	08/09/2022	08/09/22 18:07	
Surrogate: 4-Bromofluorobenzene	96.2 %	73 - 124			B2H0857	08/09/2022	08/09/22 18:07	
Surrogate: Dibromofluoromethane	104 %	78 - 129			B2H0857	08/09/2022	08/09/22 18:07	
Surrogate: Toluene-d8	101 %	84 - 117			B2H0857	08/09/2022	08/09/22 18:07	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	6.2	2.0	0.84	1	B2H0843	08/05/2022	08/09/22 18:09	
Surrogate: 1,2-Dichlorobenzene-d4	117 %	17 - 119			B2H0843	08/05/2022	08/09/22 18:09	
Surrogate: 2-Fluorobiphenyl	85.6 %	10 - 133			B2H0843	08/05/2022	08/09/22 18:09	
Surrogate: 4-Terphenyl-d14	79.5 %	5 - 139			B2H0843	08/05/2022	08/09/22 18:09	
Surrogate: Nitrobenzene-d5	88.5 %	13 - 150			B2H0843	08/05/2022	08/09/22 18:09	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-3600

Lab ID: 2202081-07

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:33	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:33	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 18:33	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 18:33	
1,1-Dichloroethane	0.87	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:33	
1,1-Dichloroethene	97	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:33	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:33	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:33	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:33	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 18:33	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 18:33	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:33	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:33	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:33	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:33	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:33	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:33	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 18:33	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:33	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:33	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:33	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:33	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:33	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:33	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 18:33	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 18:33	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-3600

Lab ID: 2202081-07

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:33	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:33	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 18:33	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 18:33	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:33	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:33	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 18:33	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:33	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:33	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:33	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:33	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:33	
Trichloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:33	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 18:33	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:33	
Surrogate: 1,2-Dichloroethane-d4	108 %	64 - 155			B2H0857	08/09/2022	08/09/22 18:33	
Surrogate: 4-Bromofluorobenzene	96.8 %	73 - 124			B2H0857	08/09/2022	08/09/22 18:33	
Surrogate: Dibromofluoromethane	104 %	78 - 129			B2H0857	08/09/2022	08/09/22 18:33	
Surrogate: Toluene-d8	103 %	84 - 117			B2H0857	08/09/2022	08/09/22 18:33	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	7.7	2.0	0.84	1	B2H0843	08/05/2022	08/09/22 18:39	
Surrogate: 1,2-Dichlorobenzene-d4	114 %	17 - 119			B2H0843	08/05/2022	08/09/22 18:39	
Surrogate: 2-Fluorobiphenyl	86.0 %	10 - 133			B2H0843	08/05/2022	08/09/22 18:39	
Surrogate: 4-Terphenyl-d14	80.1 %	5 - 139			B2H0843	08/05/2022	08/09/22 18:39	
Surrogate: Nitrobenzene-d5	91.2 %	13 - 150			B2H0843	08/05/2022	08/09/22 18:39	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-34A

Lab ID: 2202081-08

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:10	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 19:10	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 19:10	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 19:10	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:10	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 19:10	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 19:10	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 19:10	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 19:10	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 19:10	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 19:10	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:10	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 19:10	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:10	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 19:10	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 19:10	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 19:10	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 19:10	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:10	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 19:10	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:10	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 19:10	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 19:10	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 19:10	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 19:10	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 19:10	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-34A

Lab ID: 2202081-08

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 19:10	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:10	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 19:10	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 19:10	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:10	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:10	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 19:10	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:10	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:10	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:10	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 19:10	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:10	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:10	
Trichlorofluoromethane	0.40	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 19:10	J
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:10	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>104 %</i>	<i>64 - 155</i>			B2H0849	08/08/2022	<i>08/08/22 19:10</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.5 %</i>	<i>73 - 124</i>			B2H0849	08/08/2022	<i>08/08/22 19:10</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>78 - 129</i>			B2H0849	08/08/2022	<i>08/08/22 19:10</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>			B2H0849	08/08/2022	<i>08/08/22 19:10</i>	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0932	08/15/2022	08/16/22 14:22	H3
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>109 %</i>	<i>13 - 99</i>			B2H0932	08/15/2022	<i>08/16/22 14:22</i>	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>103 %</i>	<i>8 - 111</i>			B2H0932	08/15/2022	<i>08/16/22 14:22</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>121 %</i>	<i>12 - 113</i>			B2H0932	08/15/2022	<i>08/16/22 14:22</i>	S12
<i>Surrogate: Nitrobenzene-d5</i>	<i>109 %</i>	<i>15 - 121</i>			B2H0932	08/15/2022	<i>08/16/22 14:22</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-34B

Lab ID: 2202081-09

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:59	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:59	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 18:59	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 18:59	
1,1-Dichloroethane	0.73	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:59	
1,1-Dichloroethene	71	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:59	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:59	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:59	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:59	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 18:59	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 18:59	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:59	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:59	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:59	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 18:59	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:59	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 18:59	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 18:59	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:59	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:59	
Chloroform	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:59	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:59	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 18:59	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 18:59	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 18:59	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 18:59	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-34B

Lab ID: 2202081-09

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 18:59	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:59	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 18:59	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 18:59	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 18:59	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:59	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 18:59	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:59	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:59	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:59	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 18:59	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 18:59	
Trichloroethene	0.23	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 18:59	J
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 18:59	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 18:59	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>64 - 155</i>			B2H0857	08/09/2022	08/09/22 18:59	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.6 %</i>	<i>73 - 124</i>			B2H0857	08/09/2022	08/09/22 18:59	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>78 - 129</i>			B2H0857	08/09/2022	08/09/22 18:59	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>			B2H0857	08/09/2022	08/09/22 18:59	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	7.1	2.0	0.84	1	B2H0843	08/05/2022	08/09/22 19:09	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>93.1 %</i>	<i>17 - 119</i>			B2H0843	08/05/2022	08/09/22 19:09	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>84.0 %</i>	<i>10 - 133</i>			B2H0843	08/05/2022	08/09/22 19:09	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>79.0 %</i>	<i>5 - 139</i>			B2H0843	08/05/2022	08/09/22 19:09	
<i>Surrogate: Nitrobenzene-d5</i>	<i>92.2 %</i>	<i>13 - 150</i>			B2H0843	08/05/2022	08/09/22 19:09	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-41

Lab ID: 2202081-10

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:36	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 19:36	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 19:36	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 19:36	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:36	
1,1-Dichloroethene	0.58	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 19:36	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 19:36	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 19:36	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 19:36	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 19:36	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 19:36	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:36	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 19:36	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:36	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 19:36	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 19:36	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 19:36	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 19:36	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:36	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 19:36	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:36	
Chloromethane	0.13	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 19:36	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 19:36	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 19:36	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 19:36	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 19:36	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-41

Lab ID: 2202081-10

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 19:36	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:36	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 19:36	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 19:36	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 19:36	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:36	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 19:36	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:36	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:36	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:36	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 19:36	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 19:36	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 19:36	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 19:36	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 19:36	
Surrogate: 1,2-Dichloroethane-d4	102 %	64 - 155			B2H0849	08/08/2022	08/08/22 19:36	
Surrogate: 4-Bromofluorobenzene	96.9 %	73 - 124			B2H0849	08/08/2022	08/08/22 19:36	
Surrogate: Dibromofluoromethane	102 %	78 - 129			B2H0849	08/08/2022	08/08/22 19:36	
Surrogate: Toluene-d8	103 %	84 - 117			B2H0849	08/08/2022	08/08/22 19:36	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0860	08/09/2022	08/11/22 14:05	
Surrogate: 1,2-Dichlorobenzene-d4	109 %	13 - 99			B2H0860	08/09/2022	08/11/22 14:05	S12
Surrogate: 2-Fluorobiphenyl	87.2 %	8 - 111			B2H0860	08/09/2022	08/11/22 14:05	
Surrogate: 4-Terphenyl-d14	101 %	12 - 113			B2H0860	08/09/2022	08/11/22 14:05	
Surrogate: Nitrobenzene-d5	113 %	15 - 121			B2H0860	08/09/2022	08/11/22 14:05	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-28

Lab ID: 2202081-11

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:02	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:02	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 20:02	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 20:02	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:02	
1,1-Dichloroethene	0.50	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:02	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:02	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:02	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:02	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 20:02	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 20:02	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:02	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:02	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:02	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:02	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:02	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:02	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 20:02	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:02	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:02	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:02	
Chloromethane	0.33	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:02	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:02	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:02	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 20:02	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 20:02	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-28

Lab ID: 2202081-11

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:02	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:02	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 20:02	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 20:02	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:02	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:02	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 20:02	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:02	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:02	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:02	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:02	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:02	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:02	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 20:02	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:02	
Surrogate: 1,2-Dichloroethane-d4	104 %	64 - 155			B2H0849	08/08/2022	08/08/22 20:02	
Surrogate: 4-Bromofluorobenzene	95.9 %	73 - 124			B2H0849	08/08/2022	08/08/22 20:02	
Surrogate: Dibromofluoromethane	103 %	78 - 129			B2H0849	08/08/2022	08/08/22 20:02	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0849	08/08/2022	08/08/22 20:02	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0860	08/09/2022	08/11/22 14:36	
Surrogate: 1,2-Dichlorobenzene-d4	106 %	13 - 99			B2H0860	08/09/2022	08/11/22 14:36	S12
Surrogate: 2-Fluorobiphenyl	92.7 %	8 - 111			B2H0860	08/09/2022	08/11/22 14:36	
Surrogate: 4-Terphenyl-d14	104 %	12 - 113			B2H0860	08/09/2022	08/11/22 14:36	
Surrogate: Nitrobenzene-d5	107 %	15 - 121			B2H0860	08/09/2022	08/11/22 14:36	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-20

Lab ID: 2202081-12

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:40	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 14:40	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0857	08/09/2022	08/09/22 14:40	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0857	08/09/2022	08/09/22 14:40	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:40	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 14:40	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 14:40	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 14:40	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 14:40	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0857	08/09/2022	08/09/22 14:40	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0857	08/09/2022	08/09/22 14:40	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:40	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 14:40	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:40	
Benzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
Bromobenzene	ND	0.50	0.21	1	B2H0857	08/09/2022	08/09/22 14:40	
Bromodichloromethane	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 14:40	
Bromoform	ND	0.50	0.20	1	B2H0857	08/09/2022	08/09/22 14:40	
Bromomethane	ND	0.50	0.40	1	B2H0857	08/09/2022	08/09/22 14:40	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:40	
Chlorobenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
Chloroethane	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 14:40	
Chloroform	0.58	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:40	
Chloromethane	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 14:40	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0857	08/09/2022	08/09/22 14:40	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
Dibromochloromethane	ND	0.50	0.16	1	B2H0857	08/09/2022	08/09/22 14:40	
Dibromomethane	ND	0.50	0.19	1	B2H0857	08/09/2022	08/09/22 14:40	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0857	08/09/2022	08/09/22 14:40	
Ethylbenzene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-20

Lab ID: 2202081-12

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0857	08/09/2022	08/09/22 14:40	
Isopropylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:40	
m,p-Xylene	ND	1.0	0.19	1	B2H0857	08/09/2022	08/09/22 14:40	
Methylene chloride	ND	1.0	0.71	1	B2H0857	08/09/2022	08/09/22 14:40	
n-Butylbenzene	ND	0.50	0.11	1	B2H0857	08/09/2022	08/09/22 14:40	
n-Propylbenzene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:40	
Naphthalene	ND	0.50	0.41	1	B2H0857	08/09/2022	08/09/22 14:40	
o-Xylene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:40	
Styrene	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:40	
Tetrachloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:40	
Toluene	ND	0.50	0.12	1	B2H0857	08/09/2022	08/09/22 14:40	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0857	08/09/2022	08/09/22 14:40	
Trichloroethene	ND	0.50	0.10	1	B2H0857	08/09/2022	08/09/22 14:40	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0857	08/09/2022	08/09/22 14:40	
Vinyl chloride	ND	0.50	0.13	1	B2H0857	08/09/2022	08/09/22 14:40	
Surrogate: 1,2-Dichloroethane-d4	105 %	64 - 155			B2H0857	08/09/2022	08/09/22 14:40	
Surrogate: 4-Bromofluorobenzene	97.8 %	73 - 124			B2H0857	08/09/2022	08/09/22 14:40	
Surrogate: Dibromofluoromethane	101 %	78 - 129			B2H0857	08/09/2022	08/09/22 14:40	
Surrogate: Toluene-d8	105 %	84 - 117			B2H0857	08/09/2022	08/09/22 14:40	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0860	08/09/2022	08/11/22 15:07	
Surrogate: 1,2-Dichlorobenzene-d4	109 %	13 - 99			B2H0860	08/09/2022	08/11/22 15:07	S12
Surrogate: 2-Fluorobiphenyl	87.7 %	8 - 111			B2H0860	08/09/2022	08/11/22 15:07	
Surrogate: 4-Terphenyl-d14	97.3 %	12 - 113			B2H0860	08/09/2022	08/11/22 15:07	
Surrogate: Nitrobenzene-d5	116 %	15 - 121			B2H0860	08/09/2022	08/11/22 15:07	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: RB-080422

Lab ID: 2202081-13

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:28	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:28	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 20:28	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 20:28	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:28	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:28	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:28	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:28	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:28	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 20:28	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 20:28	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:28	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:28	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:28	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:28	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:28	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:28	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 20:28	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:28	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:28	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:28	
Chloromethane	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:28	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:28	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:28	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 20:28	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 20:28	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: RB-080422

Lab ID: 2202081-13

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:28	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:28	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 20:28	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 20:28	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:28	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:28	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 20:28	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:28	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:28	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:28	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:28	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:28	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:28	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 20:28	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:28	
Surrogate: 1,2-Dichloroethane-d4	106 %	64 - 155			B2H0849	08/08/2022	08/08/22 20:28	
Surrogate: 4-Bromofluorobenzene	97.6 %	73 - 124			B2H0849	08/08/2022	08/08/22 20:28	
Surrogate: Dibromofluoromethane	103 %	78 - 129			B2H0849	08/08/2022	08/08/22 20:28	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0849	08/08/2022	08/08/22 20:28	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-18

Lab ID: 2202081-14

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:54	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:54	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0849	08/08/2022	08/08/22 20:54	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0849	08/08/2022	08/08/22 20:54	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:54	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:54	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:54	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:54	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:54	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0849	08/08/2022	08/08/22 20:54	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0849	08/08/2022	08/08/22 20:54	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:54	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:54	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:54	
Benzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
Bromobenzene	ND	0.50	0.21	1	B2H0849	08/08/2022	08/08/22 20:54	
Bromodichloromethane	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:54	
Bromoform	ND	0.50	0.20	1	B2H0849	08/08/2022	08/08/22 20:54	
Bromomethane	ND	0.50	0.40	1	B2H0849	08/08/2022	08/08/22 20:54	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:54	
Chlorobenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
Chloroethane	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:54	
Chloroform	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:54	
Chloromethane	0.21	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:54	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0849	08/08/2022	08/08/22 20:54	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
Dibromochloromethane	ND	0.50	0.16	1	B2H0849	08/08/2022	08/08/22 20:54	
Dibromomethane	ND	0.50	0.19	1	B2H0849	08/08/2022	08/08/22 20:54	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0849	08/08/2022	08/08/22 20:54	
Ethylbenzene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Client Sample ID: MW-18

Lab ID: 2202081-14

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0849	08/08/2022	08/08/22 20:54	
Isopropylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:54	
m,p-Xylene	ND	1.0	0.19	1	B2H0849	08/08/2022	08/08/22 20:54	
Methylene chloride	ND	1.0	0.71	1	B2H0849	08/08/2022	08/08/22 20:54	
n-Butylbenzene	ND	0.50	0.11	1	B2H0849	08/08/2022	08/08/22 20:54	
n-Propylbenzene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:54	
Naphthalene	ND	0.50	0.41	1	B2H0849	08/08/2022	08/08/22 20:54	
o-Xylene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:54	
Styrene	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:54	
Tetrachloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:54	
Toluene	ND	0.50	0.12	1	B2H0849	08/08/2022	08/08/22 20:54	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0849	08/08/2022	08/08/22 20:54	
Trichloroethene	ND	0.50	0.10	1	B2H0849	08/08/2022	08/08/22 20:54	
Trichlorofluoromethane	1.2	0.50	0.23	1	B2H0849	08/08/2022	08/08/22 20:54	
Vinyl chloride	ND	0.50	0.13	1	B2H0849	08/08/2022	08/08/22 20:54	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>64 - 155</i>			B2H0849	08/08/2022	08/08/22 20:54	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.8 %</i>	<i>73 - 124</i>			B2H0849	08/08/2022	08/08/22 20:54	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>78 - 129</i>			B2H0849	08/08/2022	08/08/22 20:54	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>84 - 117</i>			B2H0849	08/08/2022	08/08/22 20:54	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0860	08/09/2022	08/11/22 15:39	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>110 %</i>	<i>13 - 99</i>			B2H0860	08/09/2022	08/11/22 15:39	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>92.0 %</i>	<i>8 - 111</i>			B2H0860	08/09/2022	08/11/22 15:39	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>96.5 %</i>	<i>12 - 113</i>			B2H0860	08/09/2022	08/11/22 15:39	
<i>Surrogate: Nitrobenzene-d5</i>	<i>112 %</i>	<i>15 - 121</i>			B2H0860	08/09/2022	08/11/22 15:39	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W

Blank (B2H0849-BLK1)

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Blank (B2H0849-BLK1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	0.150000	0.50	0.11
n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	25.17		25.0000	101	64 - 155
Surrogate: 4-Bromofluorobenzene	24.32		25.0000	97.3	73 - 124
Surrogate: Dibromofluoromethane	25.42		25.0000	102	78 - 129
Surrogate: Toluene-d8	25.55		25.0000	102	84 - 117

LCS (B2H0849-BS1)

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	21.6300	0.50	0.11	20.0000	108	79 - 116
1,1,1-Trichloroethane	21.3800	0.50	0.21	20.0000	107	73 - 130
1,1,2,2-Tetrachloroethane	21.4500	0.50	0.36	20.0000	107	71 - 122
1,1,2-Trichloroethane	22.2000	0.50	0.25	20.0000	111	70 - 124
1,1-Dichloroethane	20.9300	0.50	0.09	20.0000	105	69 - 128
1,1-Dichloroethene	20.2500	0.50	0.13	20.0000	101	65 - 137
1,1-Dichloropropene	20.5100	0.50	0.13	20.0000	103	74 - 129
1,2,3-Trichloropropane	20.4600	0.50	0.39	20.0000	102	74 - 123
1,2,3-Trichlorobenzene	23.8200	0.50	0.18	20.0000	119	59 - 130
1,2,4-Trichlorobenzene	22.7100	0.50	0.16	20.0000	114	65 - 125
1,2,4-Trimethylbenzene	21.3100	0.50	0.14	20.0000	107	88 - 124
1,2-Dibromo-3-chloropropane	20.8900	0.50	0.41	20.0000	104	61 - 127
1,2-Dibromoethane	21.9300	0.50	0.24	20.0000	110	72 - 125
1,2-Dichlorobenzene	21.0800	0.50	0.20	20.0000	105	84 - 113
1,2-Dichloroethane	22.0800	0.50	0.20	20.0000	110	68 - 130
1,2-Dichloropropane	21.6400	0.50	0.15	20.0000	108	77 - 121
1,3,5-Trimethylbenzene	21.2800	0.50	0.13	20.0000	106	83 - 124
1,3-Dichlorobenzene	21.4100	0.50	0.16	20.0000	107	83 - 112
1,3-Dichloropropane	21.8300	0.50	0.21	20.0000	109	77 - 119
1,4-Dichlorobenzene	21.2300	0.50	0.17	20.0000	106	79 - 115
2,2-Dichloropropane	23.2500	0.50	0.38	20.0000	116	67 - 149
2-Chlorotoluene	20.8400	0.50	0.11	20.0000	104	81 - 119
4-Chlorotoluene	20.9500	0.50	0.12	20.0000	105	86 - 117
4-Isopropyltoluene	20.9800	0.50	0.11	20.0000	105	82 - 131



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

LCS (B2H0849-BS1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

Benzene	21.3100	0.50	0.13	20.0000	107	75 - 124			
Bromobenzene	21.2100	0.50	0.21	20.0000	106	82 - 108			
Bromodichloromethane	21.9300	0.50	0.14	20.0000	110	80 - 120			
Bromoform	22.4500	0.50	0.20	20.0000	112	70 - 123			
Bromomethane	24.6500	0.50	0.40	20.0000	123	44 - 151			
Carbon tetrachloride	21.4100	0.50	0.09	20.0000	107	62 - 140			
Chlorobenzene	21.7700	0.50	0.13	20.0000	109	80 - 112			
Chloroethane	21.6100	0.50	0.15	20.0000	108	42 - 167			
Chloroform	22.1200	0.50	0.11	20.0000	111	77 - 122			
Chloromethane	21.0900	0.50	0.12	20.0000	105	33 - 153			
cis-1,2-Dichloroethene	21.3100	0.50	0.14	20.0000	107	75 - 121			
cis-1,3-Dichloropropene	22.3400	0.50	0.13	20.0000	112	73 - 127			
Dibromochloromethane	20.7200	0.50	0.16	20.0000	104	77 - 122			
Dibromomethane	21.9000	0.50	0.19	20.0000	110	75 - 121			
Dichlorodifluoromethane	16.3400	0.50	0.18	20.0000	81.7	0 - 171			
Ethylbenzene	21.6400	0.50	0.13	20.0000	108	82 - 119			
Hexachlorobutadiene	20.3100	0.50	0.15	20.0000	102	71 - 131			
Isopropylbenzene	20.8400	0.50	0.10	20.0000	104	75 - 126			
m,p-Xylene	43.3300	1.0	0.19	40.0000	108	86 - 119			
Methylene chloride	21.0000	1.0	0.71	20.0000	105	76 - 125			
n-Butylbenzene	20.6300	0.50	0.11	20.0000	103	81 - 125			
n-Propylbenzene	20.8300	0.50	0.10	20.0000	104	78 - 130			
Naphthalene	24.1300	0.50	0.41	20.0000	121	47 - 128			
o-Xylene	21.7400	0.50	0.13	20.0000	109	85 - 119			
sec-Butylbenzene	20.2600	0.50	0.09	20.0000	101	78 - 130			
Styrene	22.3900	0.50	0.13	20.0000	112	62 - 148			
tert-Butylbenzene	20.5900	0.50	0.09	20.0000	103	77 - 125			
Tetrachloroethene	21.1700	0.50	0.10	20.0000	106	73 - 120			
Toluene	21.3900	0.50	0.12	20.0000	107	79 - 119			
trans-1,2-Dichloroethene	20.8300	0.50	0.09	20.0000	104	70 - 129			
Trichloroethene	21.4100	0.50	0.10	20.0000	107	73 - 117			
Trichlorofluoromethane	17.4500	0.50	0.23	20.0000	87.2	59 - 135			
Vinyl chloride	20.7000	0.50	0.13	20.0000	104	58 - 132			

Surrogate: 1,2-Dichloroethane-d4	24.40			25.0000	97.6	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.87			25.0000	99.5	73 - 124			
Surrogate: Dibromofluoromethane	25.14			25.0000	101	78 - 129			
Surrogate: Toluene-d8	24.85			25.0000	99.4	84 - 117			

LCS Dup (B2H0849-BSD1)

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	24.9000	0.50	0.11	20.0000	124	79 - 116	14.1	20	L3
1,1,1-Trichloroethane	23.5600	0.50	0.21	20.0000	118	73 - 130	9.70	20	
1,1,2,2-Tetrachloroethane	25.1600	0.50	0.36	20.0000	126	71 - 122	15.9	20	L3
1,1,2-Trichloroethane	25.7600	0.50	0.25	20.0000	129	70 - 124	14.8	20	L3
1,1-Dichloroethane	23.3200	0.50	0.09	20.0000	117	69 - 128	10.8	20	
1,1-Dichloroethene	22.0000	0.50	0.13	20.0000	110	65 - 137	8.28	20	



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Report To : Steve Netto

Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

LCS Dup (B2H0849-BSD1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1-Dichloropropene	24.0000	0.50	0.13	20.0000	120	74 - 129	15.7	20		
1,2,3-Trichloropropane	23.6100	0.50	0.39	20.0000	118	74 - 123	14.3	20		
1,2,3-Trichlorobenzene	26.5900	0.50	0.18	20.0000	133	59 - 130	11.0	20	L5	
1,2,4-Trichlorobenzene	26.3000	0.50	0.16	20.0000	132	65 - 125	14.7	20	L5	
1,2,4-Trimethylbenzene	23.6400	0.50	0.14	20.0000	118	88 - 124	10.4	20		
1,2-Dibromo-3-chloropropane	24.4600	0.50	0.41	20.0000	122	61 - 127	15.7	20		
1,2-Dibromoethane	25.8500	0.50	0.24	20.0000	129	72 - 125	16.4	20	L3	
1,2-Dichlorobenzene	23.8100	0.50	0.20	20.0000	119	84 - 113	12.2	20	L3	
1,2-Dichloroethane	24.6600	0.50	0.20	20.0000	123	68 - 130	11.0	20		
1,2-Dichloropropane	24.2600	0.50	0.15	20.0000	121	77 - 121	11.4	20	L3	
1,3,5-Trimethylbenzene	23.3600	0.50	0.13	20.0000	117	83 - 124	9.32	20		
1,3-Dichlorobenzene	24.1800	0.50	0.16	20.0000	121	83 - 112	12.2	20	L3	
1,3-Dichloropropane	25.2600	0.50	0.21	20.0000	126	77 - 119	14.6	20	L3	
1,4-Dichlorobenzene	23.6700	0.50	0.17	20.0000	118	79 - 115	10.9	20	L3	
2,2-Dichloropropane	25.5100	0.50	0.38	20.0000	128	67 - 149	9.27	20		
2-Chlorotoluene	23.4300	0.50	0.11	20.0000	117	81 - 119	11.7	20		
4-Chlorotoluene	23.4700	0.50	0.12	20.0000	117	86 - 117	11.3	20	L3	
4-Isopropyltoluene	23.2300	0.50	0.11	20.0000	116	82 - 131	10.2	20		
Benzene	24.1400	0.50	0.13	20.0000	121	75 - 124	12.5	20		
Bromobenzene	24.0000	0.50	0.21	20.0000	120	82 - 108	12.3	20	L3	
Bromodichloromethane	25.5500	0.50	0.14	20.0000	128	80 - 120	15.2	20	L3	
Bromoform	26.0000	0.50	0.20	20.0000	130	70 - 123	14.7	20	L3	
Bromomethane	27.8600	0.50	0.40	20.0000	139	44 - 151	12.2	20		
Carbon tetrachloride	23.8400	0.50	0.09	20.0000	119	62 - 140	10.7	20		
Chlorobenzene	24.3300	0.50	0.13	20.0000	122	80 - 112	11.1	20	L3	
Chloroethane	24.2100	0.50	0.15	20.0000	121	42 - 167	11.3	20		
Chloroform	24.9700	0.50	0.11	20.0000	125	77 - 122	12.1	20	L3	
Chloromethane	23.0600	0.50	0.12	20.0000	115	33 - 153	8.92	20		
cis-1,2-Dichloroethene	24.4500	0.50	0.14	20.0000	122	75 - 121	13.7	20	L3	
cis-1,3-Dichloropropene	26.1900	0.50	0.13	20.0000	131	73 - 127	15.9	20	L5	
Dibromochloromethane	23.8400	0.50	0.16	20.0000	119	77 - 122	14.0	20		
Dibromomethane	25.3700	0.50	0.19	20.0000	127	75 - 121	14.7	20	L3	
Dichlorodifluoromethane	17.8100	0.50	0.18	20.0000	89.0	0 - 171	8.61	20		
Ethylbenzene	24.1300	0.50	0.13	20.0000	121	82 - 119	10.9	20	L3	
Hexachlorobutadiene	22.7300	0.50	0.15	20.0000	114	71 - 131	11.2	20		
Isopropylbenzene	23.0700	0.50	0.10	20.0000	115	75 - 126	10.2	20		
m,p-Xylene	48.3300	1.0	0.19	40.0000	121	86 - 119	10.9	20	L3	
Methylene chloride	23.9300	1.0	0.71	20.0000	120	76 - 125	13.0	20		
n-Butylbenzene	23.0500	0.50	0.11	20.0000	115	81 - 125	11.1	20		
n-Propylbenzene	23.2800	0.50	0.10	20.0000	116	78 - 130	11.1	20		
Naphthalene	27.2200	0.50	0.41	20.0000	136	47 - 128	12.0	20	L5	
o-Xylene	24.5700	0.50	0.13	20.0000	123	85 - 119	12.2	20	L3	
sec-Butylbenzene	22.7100	0.50	0.09	20.0000	114	78 - 130	11.4	20		
Styrene	25.2600	0.50	0.13	20.0000	126	62 - 148	12.0	20		
tert-Butylbenzene	22.8400	0.50	0.09	20.0000	114	77 - 125	10.4	20		



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San Diego , CA 92108

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Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

LCS Dup (B2H0849-BSD1) - Continued

Prepared: 8/8/2022 Analyzed: 8/8/2022

Tetrachloroethene	23.9700	0.50	0.10	20.0000		120	73 - 120	12.4	20	
Toluene	23.9700	0.50	0.12	20.0000		120	79 - 119	11.4	20	L3
trans-1,2-Dichloroethene	22.9700	0.50	0.09	20.0000		115	70 - 129	9.77	20	
Trichloroethene	23.8500	0.50	0.10	20.0000		119	73 - 117	10.8	20	L3
Trichlorofluoromethane	19.7500	0.50	0.23	20.0000		98.8	59 - 135	12.4	20	
Vinyl chloride	22.6700	0.50	0.13	20.0000		113	58 - 132	9.08	20	
Surrogate: 1,2-Dichloroethane-d4	24.38			25.0000		97.5	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.44			25.0000		102	73 - 124			
Surrogate: Dibromofluoromethane	25.09			25.0000		100	78 - 129			
Surrogate: Toluene-d8	25.29			25.0000		101	84 - 117			

Matrix Spike (B2H0849-MS1)

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	19.4700	0.50	0.11	20.0000	ND	97.4	81 - 133			
1,1,1-Trichloroethane	20.1300	0.50	0.21	20.0000	ND	101	93 - 149			
1,1,2,2-Tetrachloroethane	19.9600	0.50	0.36	20.0000	ND	99.8	69 - 151			
1,1,2-Trichloroethane	19.8200	0.50	0.25	20.0000	ND	99.1	78 - 130			
1,1-Dichloroethane	19.2800	0.50	0.09	20.0000	ND	96.4	68 - 135			
1,1-Dichloroethene	19.5800	0.50	0.13	20.0000	ND	97.9	77 - 134			
1,1-Dichloropropene	20.5900	0.50	0.13	20.0000	ND	103	91 - 138			
1,2,3-Trichloropropane	18.7200	0.50	0.39	20.0000	ND	93.6	77 - 136			
1,2,3-Trichlorobenzene	21.0700	0.50	0.18	20.0000	ND	105	72 - 129			
1,2,4-Trichlorobenzene	20.4300	0.50	0.16	20.0000	ND	102	64 - 135			
1,2,4-Trimethylbenzene	19.3900	0.50	0.14	20.0000	ND	97.0	10 - 179			
1,2-Dibromo-3-chloropropane	19.0400	0.50	0.41	20.0000	ND	95.2	62 - 153			
1,2-Dibromoethane	20.2700	0.50	0.24	20.0000	ND	101	80 - 132			
1,2-Dichlorobenzene	19.1300	0.50	0.20	20.0000	ND	95.6	81 - 131			
1,2-Dichloroethane	19.6300	0.50	0.20	20.0000	ND	98.2	68 - 146			
1,2-Dichloropropane	19.3700	0.50	0.15	20.0000	ND	96.8	74 - 136			
1,3,5-Trimethylbenzene	19.4500	0.50	0.13	20.0000	ND	97.2	66 - 149			
1,3-Dichlorobenzene	19.4900	0.50	0.16	20.0000	ND	97.4	79 - 128			
1,3-Dichloropropane	19.7500	0.50	0.21	20.0000	ND	98.8	80 - 129			
1,4-Dichlorobenzene	18.9500	0.50	0.17	20.0000	ND	94.8	84 - 121			
2,2-Dichloropropane	22.8800	0.50	0.38	20.0000	ND	114	63 - 179			
2-Chlorotoluene	19.1400	0.50	0.11	20.0000	ND	95.7	76 - 142			
4-Chlorotoluene	18.7700	0.50	0.12	20.0000	ND	93.8	72 - 152			
4-Isopropyltoluene	19.8400	0.50	0.11	20.0000	ND	99.2	84 - 141			
Benzene	20.0800	0.50	0.13	20.0000	ND	100	79 - 131			
Bromobenzene	19.0200	0.50	0.21	20.0000	ND	95.1	82 - 121			
Bromodichloromethane	20.2900	0.50	0.14	20.0000	ND	101	86 - 138			
Bromoform	19.5900	0.50	0.20	20.0000	ND	98.0	80 - 136			
Bromomethane	23.6000	0.50	0.40	20.0000	ND	118	35 - 194			
Carbon tetrachloride	21.0500	0.50	0.09	20.0000	ND	105	73 - 176			
Chlorobenzene	19.5700	0.50	0.13	20.0000	ND	97.8	81 - 124			
Chloroethane	20.9700	0.50	0.15	20.0000	ND	105	0 - 257			
Chloroform	19.8800	0.50	0.11	20.0000	ND	99.4	76 - 139			



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Matrix Spike (B2H0849-MS1) - Continued

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

Chloromethane	20.1000	0.50	0.12	20.0000	0.130000	99.8	27 - 144			
cis-1,2-Dichloroethene	19.6500	0.50	0.14	20.0000	ND	98.2	69 - 139			
cis-1,3-Dichloropropene	20.1700	0.50	0.13	20.0000	ND	101	67 - 149			
Dibromochloromethane	18.5100	0.50	0.16	20.0000	ND	92.6	91 - 131			
Dibromomethane	19.9100	0.50	0.19	20.0000	ND	99.6	70 - 134			
Dichlorodifluoromethane	21.8500	0.50	0.18	20.0000	ND	109	0 - 161			
Ethylbenzene	19.8900	0.50	0.13	20.0000	ND	99.4	89 - 134			
Hexachlorobutadiene	20.4300	0.50	0.15	20.0000	ND	102	73 - 137			
Isopropylbenzene	19.5600	0.50	0.10	20.0000	ND	97.8	72 - 152			
m,p-Xylene	39.8000	1.0	0.19	40.0000	ND	99.5	82 - 141			
Methylene chloride	18.9300	1.0	0.71	20.0000	ND	94.6	74 - 133			
n-Butylbenzene	19.8100	0.50	0.11	20.0000	ND	99.0	65 - 164			
n-Propylbenzene	19.3800	0.50	0.10	20.0000	ND	96.9	73 - 161			
Naphthalene	21.7700	0.50	0.41	20.0000	ND	109	59 - 105			M2
o-Xylene	19.8400	0.50	0.13	20.0000	ND	99.2	90 - 134			
sec-Butylbenzene	19.4300	0.50	0.09	20.0000	ND	97.2	80 - 157			
Styrene	20.2100	0.50	0.13	20.0000	ND	101	0 - 222			
tert-Butylbenzene	19.3800	0.50	0.09	20.0000	ND	96.9	88 - 141			
Tetrachloroethene	20.5200	0.50	0.10	20.0000	ND	103	75 - 136			
Toluene	19.5500	0.50	0.12	20.0000	ND	97.8	82 - 132			
trans-1,2-Dichloroethene	19.6400	0.50	0.09	20.0000	ND	98.2	65 - 135			
Trichloroethene	20.0100	0.50	0.10	20.0000	ND	100	75 - 128			
Trichlorofluoromethane	20.1000	0.50	0.23	20.0000	ND	100	89 - 143			
Vinyl chloride	20.8400	0.50	0.13	20.0000	ND	104	50 - 148			
Surrogate: 1,2-Dichloroethane-d4	24.08			25.0000		96.3	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.02			25.0000		100	73 - 124			
Surrogate: Dibromofluoromethane	24.95			25.0000		99.8	78 - 129			
Surrogate: Toluene-d8	25.06			25.0000		100	84 - 117			

Matrix Spike Dup (B2H0849-MSD1)

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,1,1,2-Tetrachloroethane	22.8700	0.50	0.11	20.0000	ND	114	81 - 133	16.1	20	
1,1,1-Trichloroethane	24.6300	0.50	0.21	20.0000	ND	123	93 - 149	20.1	20	R
1,1,2,2-Tetrachloroethane	22.9100	0.50	0.36	20.0000	ND	115	69 - 151	13.8	20	
1,1,2-Trichloroethane	22.6900	0.50	0.25	20.0000	ND	113	78 - 130	13.5	20	
1,1-Dichloroethane	22.3900	0.50	0.09	20.0000	ND	112	68 - 135	14.9	20	
1,1-Dichloroethene	23.6500	0.50	0.13	20.0000	ND	118	77 - 134	18.8	20	
1,1-Dichloropropene	24.1600	0.50	0.13	20.0000	ND	121	91 - 138	16.0	20	
1,2,3-Trichloropropane	21.3000	0.50	0.39	20.0000	ND	106	77 - 136	12.9	20	
1,2,3-Trichlorobenzene	24.4300	0.50	0.18	20.0000	ND	122	72 - 129	14.8	20	
1,2,4-Trichlorobenzene	23.8700	0.50	0.16	20.0000	ND	119	64 - 135	15.5	20	
1,2,4-Trimethylbenzene	23.1400	0.50	0.14	20.0000	ND	116	10 - 179	17.6	20	
1,2-Dibromo-3-chloropropane	22.8700	0.50	0.41	20.0000	ND	114	62 - 153	18.3	20	
1,2-Dibromoethane	22.8000	0.50	0.24	20.0000	ND	114	80 - 132	11.7	20	
1,2-Dichlorobenzene	22.2900	0.50	0.20	20.0000	ND	111	81 - 131	15.3	20	
1,2-Dichloroethane	21.7600	0.50	0.20	20.0000	ND	109	68 - 146	10.3	20	



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Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0849-MSD1) - Continued

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

1,2-Dichloropropane	22.2800	0.50	0.15	20.0000	ND	111	74 - 136	14.0	20	
1,3,5-Trimethylbenzene	23.4300	0.50	0.13	20.0000	ND	117	66 - 149	18.6	20	
1,3-Dichlorobenzene	23.0400	0.50	0.16	20.0000	ND	115	79 - 128	16.7	20	
1,3-Dichloropropane	22.5800	0.50	0.21	20.0000	ND	113	80 - 129	13.4	20	
1,4-Dichlorobenzene	22.2800	0.50	0.17	20.0000	ND	111	84 - 121	16.2	20	
2,2-Dichloropropane	26.3100	0.50	0.38	20.0000	ND	132	63 - 179	13.9	20	
2-Chlorotoluene	22.7800	0.50	0.11	20.0000	ND	114	76 - 142	17.4	20	
4-Chlorotoluene	22.5400	0.50	0.12	20.0000	ND	113	72 - 152	18.3	20	
4-Isopropyltoluene	23.9600	0.50	0.11	20.0000	ND	120	84 - 141	18.8	20	
Benzene	23.3900	0.50	0.13	20.0000	ND	117	79 - 131	15.2	20	
Bromobenzene	22.4300	0.50	0.21	20.0000	ND	112	82 - 121	16.5	20	
Bromodichloromethane	22.9300	0.50	0.14	20.0000	ND	115	86 - 138	12.2	20	
Bromoform	22.7300	0.50	0.20	20.0000	ND	114	80 - 136	14.8	20	
Bromomethane	27.1600	0.50	0.40	20.0000	ND	136	35 - 194	14.0	20	
Carbon tetrachloride	25.5700	0.50	0.09	20.0000	ND	128	73 - 176	19.4	20	
Chlorobenzene	22.9900	0.50	0.13	20.0000	ND	115	81 - 124	16.1	20	
Chloroethane	24.9100	0.50	0.15	20.0000	ND	125	0 - 257	17.2	20	
Chloroform	23.1900	0.50	0.11	20.0000	ND	116	76 - 139	15.4	20	
Chloromethane	23.5600	0.50	0.12	20.0000	0.130000	117	27 - 144	15.8	20	
cis-1,2-Dichloroethene	22.3600	0.50	0.14	20.0000	ND	112	69 - 139	12.9	20	
cis-1,3-Dichloropropene	23.1900	0.50	0.13	20.0000	ND	116	67 - 149	13.9	20	
Dibromochloromethane	21.2700	0.50	0.16	20.0000	ND	106	91 - 131	13.9	20	
Dibromomethane	21.9400	0.50	0.19	20.0000	ND	110	70 - 134	9.70	20	
Dichlorodifluoromethane	25.6300	0.50	0.18	20.0000	ND	128	0 - 161	15.9	20	
Ethylbenzene	23.8200	0.50	0.13	20.0000	ND	119	89 - 134	18.0	20	
Hexachlorobutadiene	24.3400	0.50	0.15	20.0000	ND	122	73 - 137	17.5	20	
Isopropylbenzene	23.4500	0.50	0.10	20.0000	ND	117	72 - 152	18.1	20	
m,p-Xylene	47.7300	1.0	0.19	40.0000	ND	119	82 - 141	18.1	20	
Methylene chloride	21.6600	1.0	0.71	20.0000	ND	108	74 - 133	13.5	20	
n-Butylbenzene	23.8300	0.50	0.11	20.0000	ND	119	65 - 164	18.4	20	
n-Propylbenzene	23.4500	0.50	0.10	20.0000	ND	117	73 - 161	19.0	20	
Naphthalene	25.2300	0.50	0.41	20.0000	ND	126	59 - 105	14.7	20	M2
o-Xylene	23.4200	0.50	0.13	20.0000	ND	117	90 - 134	16.6	20	
sec-Butylbenzene	23.4800	0.50	0.09	20.0000	ND	117	80 - 157	18.9	20	
Styrene	23.6800	0.50	0.13	20.0000	ND	118	0 - 222	15.8	20	
tert-Butylbenzene	23.2000	0.50	0.09	20.0000	ND	116	88 - 141	17.9	20	
Tetrachloroethene	24.9700	0.50	0.10	20.0000	ND	125	75 - 136	19.6	20	
Toluene	23.1400	0.50	0.12	20.0000	ND	116	82 - 132	16.8	20	
trans-1,2-Dichloroethene	23.0000	0.50	0.09	20.0000	ND	115	65 - 135	15.8	20	
Trichloroethene	23.2600	0.50	0.10	20.0000	ND	116	75 - 128	15.0	20	
Trichlorofluoromethane	24.2500	0.50	0.23	20.0000	ND	121	89 - 143	18.7	20	
Vinyl chloride	24.3300	0.50	0.13	20.0000	ND	122	50 - 148	15.5	20	

Surrogate: 1,2-Dichloroethane-d4

24.45

25.0000

97.8

64 - 155

Surrogate: 4-Bromofluorobenzene

25.37

25.0000

101

73 - 124

Surrogate: Dibromofluoromethane

25.38

25.0000

102

78 - 129



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0849 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0849-MSD1) - Continued

Source: 2202071-05

Prepared: 8/8/2022 Analyzed: 8/8/2022

Surrogate: Toluene-d8

25.04

25.0000

100

84 - 117



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W

Blank (B2H0857-BLK1)

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	0.190000	0.50	0.11

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Blank (B2H0857-BLK1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	26.52		25.0000	106	64 - 155
Surrogate: 4-Bromofluorobenzene	24.52		25.0000	98.1	73 - 124
Surrogate: Dibromofluoromethane	25.70		25.0000	103	78 - 129
Surrogate: Toluene-d8	25.24		25.0000	101	84 - 117

LCS (B2H0857-BS1)

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	22.6300	0.50	0.11	20.0000	113	79 - 116	
1,1,1-Trichloroethane	21.8600	0.50	0.21	20.0000	109	73 - 130	
1,1,2,2-Tetrachloroethane	23.7500	0.50	0.36	20.0000	119	71 - 122	
1,1,2-Trichloroethane	23.8200	0.50	0.25	20.0000	119	70 - 124	
1,1-Dichloroethane	22.9100	0.50	0.09	20.0000	115	69 - 128	
1,1-Dichloroethene	20.9700	0.50	0.13	20.0000	105	65 - 137	
1,1-Dichloropropene	20.8900	0.50	0.13	20.0000	104	74 - 129	
1,2,3-Trichloropropane	22.9800	0.50	0.39	20.0000	115	74 - 123	
1,2,3-Trichlorobenzene	25.2800	0.50	0.18	20.0000	126	59 - 130	
1,2,4-Trichlorobenzene	23.9300	0.50	0.16	20.0000	120	65 - 125	
1,2,4-Trimethylbenzene	22.2700	0.50	0.14	20.0000	111	88 - 124	
1,2-Dibromo-3-chloropropane	23.1400	0.50	0.41	20.0000	116	61 - 127	
1,2-Dibromoethane	24.5500	0.50	0.24	20.0000	123	72 - 125	
1,2-Dichlorobenzene	22.8900	0.50	0.20	20.0000	114	84 - 113	L3
1,2-Dichloroethane	23.9000	0.50	0.20	20.0000	120	68 - 130	
1,2-Dichloropropane	22.8700	0.50	0.15	20.0000	114	77 - 121	
1,3,5-Trimethylbenzene	22.0600	0.50	0.13	20.0000	110	83 - 124	
1,3-Dichlorobenzene	22.7800	0.50	0.16	20.0000	114	83 - 112	L3
1,3-Dichloropropane	23.8400	0.50	0.21	20.0000	119	77 - 119	L3
1,4-Dichlorobenzene	22.3200	0.50	0.17	20.0000	112	79 - 115	
2,2-Dichloropropane	23.2900	0.50	0.38	20.0000	116	67 - 149	
2-Chlorotoluene	21.9200	0.50	0.11	20.0000	110	81 - 119	
4-Chlorotoluene	22.1700	0.50	0.12	20.0000	111	86 - 117	
4-Isopropyltoluene	21.5700	0.50	0.11	20.0000	108	82 - 131	
Benzene	22.5800	0.50	0.13	20.0000	113	75 - 124	
Bromobenzene	22.2900	0.50	0.21	20.0000	111	82 - 108	L3
Bromodichloromethane	23.3200	0.50	0.14	20.0000	117	80 - 120	



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

LCS (B2H0857-BS1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

Bromoform	23.6600	0.50	0.20	20.0000	118	70 - 123			
Bromomethane	28.1600	0.50	0.40	20.0000	141	44 - 151			
Carbon tetrachloride	20.8000	0.50	0.09	20.0000	104	62 - 140			
Chlorobenzene	22.5800	0.50	0.13	20.0000	113	80 - 112			L3
Chloroethane	25.2300	0.50	0.15	20.0000	126	42 - 167			
Chloroform	23.6900	0.50	0.11	20.0000	118	77 - 122			
Chloromethane	23.2100	0.50	0.12	20.0000	116	33 - 153			
cis-1,2-Dichloroethene	23.0200	0.50	0.14	20.0000	115	75 - 121			
cis-1,3-Dichloropropene	23.6300	0.50	0.13	20.0000	118	73 - 127			
Dibromochloromethane	21.7900	0.50	0.16	20.0000	109	77 - 122			
Dibromomethane	23.5700	0.50	0.19	20.0000	118	75 - 121			
Dichlorodifluoromethane	18.4100	0.50	0.18	20.0000	92.0	0 - 171			
Ethylbenzene	22.4800	0.50	0.13	20.0000	112	82 - 119			
Hexachlorobutadiene	20.1300	0.50	0.15	20.0000	101	71 - 131			
Isopropylbenzene	21.5100	0.50	0.10	20.0000	108	75 - 126			
m,p-Xylene	45.4400	1.0	0.19	40.0000	114	86 - 119			
Methylene chloride	23.7200	1.0	0.71	20.0000	119	76 - 125			
n-Butylbenzene	21.6400	0.50	0.11	20.0000	108	81 - 125			
n-Propylbenzene	21.6300	0.50	0.10	20.0000	108	78 - 130			
Naphthalene	26.3800	0.50	0.41	20.0000	132	47 - 128			L4
o-Xylene	21.8500	0.50	0.13	20.0000	109	85 - 119			
sec-Butylbenzene	20.8300	0.50	0.09	20.0000	104	78 - 130			
Styrene	23.5600	0.50	0.13	20.0000	118	62 - 148			
tert-Butylbenzene	21.2200	0.50	0.09	20.0000	106	77 - 125			
Tetrachloroethene	21.1900	0.50	0.10	20.0000	106	73 - 120			
Toluene	22.0600	0.50	0.12	20.0000	110	79 - 119			
trans-1,2-Dichloroethene	21.9400	0.50	0.09	20.0000	110	70 - 129			
Trichloroethene	22.0100	0.50	0.10	20.0000	110	73 - 117			
Trichlorofluoromethane	18.5800	0.50	0.23	20.0000	92.9	59 - 135			
Vinyl chloride	22.2500	0.50	0.13	20.0000	111	58 - 132			
Surrogate: 1,2-Dichloroethane-d4	26.22			25.0000	105	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.48			25.0000	102	73 - 124			
Surrogate: Dibromofluoromethane	26.21			25.0000	105	78 - 129			
Surrogate: Toluene-d8	25.41			25.0000	102	84 - 117			

LCS Dup (B2H0857-BSD1)

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	23.3600	0.50	0.11	20.0000	117	79 - 116	3.17	20	L3
1,1,1-Trichloroethane	23.1100	0.50	0.21	20.0000	116	73 - 130	5.56	20	
1,1,2,2-Tetrachloroethane	24.5700	0.50	0.36	20.0000	123	71 - 122	3.39	20	L3
1,1,2-Trichloroethane	24.9100	0.50	0.25	20.0000	125	70 - 124	4.47	20	L3
1,1-Dichloroethane	23.3500	0.50	0.09	20.0000	117	69 - 128	1.90	20	
1,1-Dichloroethene	21.8900	0.50	0.13	20.0000	109	65 - 137	4.29	20	
1,1-Dichloropropene	21.9500	0.50	0.13	20.0000	110	74 - 129	4.95	20	
1,2,3-Trichloropropane	23.4200	0.50	0.39	20.0000	117	74 - 123	1.90	20	
1,2,3-Trichlorobenzene	26.0100	0.50	0.18	20.0000	130	59 - 130	2.85	20	L4



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

LCS Dup (B2H0857-BSD1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,2,4-Trichlorobenzene	25.0000	0.50	0.16	20.0000	125	65 - 125	4.37	20		
1,2,4-Trimethylbenzene	22.8800	0.50	0.14	20.0000	114	88 - 124	2.70	20		
1,2-Dibromo-3-chloropropane	24.2400	0.50	0.41	20.0000	121	61 - 127	4.64	20		
1,2-Dibromoethane	25.7200	0.50	0.24	20.0000	129	72 - 125	4.65	20		L3
1,2-Dichlorobenzene	23.3900	0.50	0.20	20.0000	117	84 - 113	2.16	20		L3
1,2-Dichloroethane	24.7700	0.50	0.20	20.0000	124	68 - 130	3.58	20		
1,2-Dichloropropane	23.9200	0.50	0.15	20.0000	120	77 - 121	4.49	20		
1,3,5-Trimethylbenzene	22.8700	0.50	0.13	20.0000	114	83 - 124	3.61	20		
1,3-Dichlorobenzene	23.6000	0.50	0.16	20.0000	118	83 - 112	3.54	20		L3
1,3-Dichloropropane	24.5700	0.50	0.21	20.0000	123	77 - 119	3.02	20		L3
1,4-Dichlorobenzene	22.9000	0.50	0.17	20.0000	114	79 - 115	2.57	20		
2,2-Dichloropropane	23.7400	0.50	0.38	20.0000	119	67 - 149	1.91	20		
2-Chlorotoluene	22.8100	0.50	0.11	20.0000	114	81 - 119	3.98	20		
4-Chlorotoluene	22.8100	0.50	0.12	20.0000	114	86 - 117	2.85	20		
4-Isopropyltoluene	22.5600	0.50	0.11	20.0000	113	82 - 131	4.49	20		
Benzene	23.8800	0.50	0.13	20.0000	119	75 - 124	5.60	20		
Bromobenzene	22.6800	0.50	0.21	20.0000	113	82 - 108	1.73	20		L3
Bromodichloromethane	24.6200	0.50	0.14	20.0000	123	80 - 120	5.42	20		L3
Bromoform	24.5600	0.50	0.20	20.0000	123	70 - 123	3.73	20		
Bromomethane	27.5800	0.50	0.40	20.0000	138	44 - 151	2.08	20		
Carbon tetrachloride	21.9600	0.50	0.09	20.0000	110	62 - 140	5.43	20		
Chlorobenzene	23.5400	0.50	0.13	20.0000	118	80 - 112	4.16	20		L3
Chloroethane	25.9000	0.50	0.15	20.0000	130	42 - 167	2.62	20		
Chloroform	24.9000	0.50	0.11	20.0000	124	77 - 122	4.98	20		L3
Chloromethane	24.6300	0.50	0.12	20.0000	123	33 - 153	5.94	20		
cis-1,2-Dichloroethene	23.7700	0.50	0.14	20.0000	119	75 - 121	3.21	20		
cis-1,3-Dichloropropene	24.8600	0.50	0.13	20.0000	124	73 - 127	5.07	20		
Dibromochloromethane	22.6800	0.50	0.16	20.0000	113	77 - 122	4.00	20		
Dibromomethane	23.9400	0.50	0.19	20.0000	120	75 - 121	1.56	20		
Dichlorodifluoromethane	15.9700	0.50	0.18	20.0000	79.8	0 - 171	14.2	20		
Ethylbenzene	23.1300	0.50	0.13	20.0000	116	82 - 119	2.85	20		
Hexachlorobutadiene	21.0100	0.50	0.15	20.0000	105	71 - 131	4.28	20		
Isopropylbenzene	22.3900	0.50	0.10	20.0000	112	75 - 126	4.01	20		
m,p-Xylene	47.0200	1.0	0.19	40.0000	118	86 - 119	3.42	20		
Methylene chloride	24.3300	1.0	0.71	20.0000	122	76 - 125	2.54	20		
n-Butylbenzene	22.4600	0.50	0.11	20.0000	112	81 - 125	3.72	20		
n-Propylbenzene	22.5900	0.50	0.10	20.0000	113	78 - 130	4.34	20		
Naphthalene	27.2700	0.50	0.41	20.0000	136	47 - 128	3.32	20		L4
o-Xylene	22.6000	0.50	0.13	20.0000	113	85 - 119	3.37	20		
sec-Butylbenzene	21.9400	0.50	0.09	20.0000	110	78 - 130	5.19	20		
Styrene	24.1500	0.50	0.13	20.0000	121	62 - 148	2.47	20		
tert-Butylbenzene	22.0000	0.50	0.09	20.0000	110	77 - 125	3.61	20		
Tetrachloroethene	22.0600	0.50	0.10	20.0000	110	73 - 120	4.02	20		
Toluene	23.3400	0.50	0.12	20.0000	117	79 - 119	5.64	20		
trans-1,2-Dichloroethene	22.8900	0.50	0.09	20.0000	114	70 - 129	4.24	20		



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

LCS Dup (B2H0857-BSD1) - Continued

Prepared: 8/9/2022 Analyzed: 8/9/2022

Trichloroethene	23.2700	0.50	0.10	20.0000		116	73 - 117	5.57	20	
Trichlorofluoromethane	17.8000	0.50	0.23	20.0000		89.0	59 - 135	4.29	20	
Vinyl chloride	23.0000	0.50	0.13	20.0000		115	58 - 132	3.31	20	

Surrogate: 1,2-Dichloroethane-d4	25.41			25.0000		102	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.00			25.0000		100	73 - 124			
Surrogate: Dibromofluoromethane	25.60			25.0000		102	78 - 129			
Surrogate: Toluene-d8	25.10			25.0000		100	84 - 117			

Matrix Spike (B2H0857-MS1)

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	22.0700	0.50	0.11	20.0000	ND	110	81 - 133			
1,1,1-Trichloroethane	23.7400	0.50	0.21	20.0000	ND	119	93 - 149			
1,1,2,2-Tetrachloroethane	23.0600	0.50	0.36	20.0000	ND	115	69 - 151			
1,1,2-Trichloroethane	22.4000	0.50	0.25	20.0000	ND	112	78 - 130			
1,1-Dichloroethane	22.4800	0.50	0.09	20.0000	ND	112	68 - 135			
1,1-Dichloroethene	24.5500	0.50	0.13	20.0000	ND	123	77 - 134			
1,1-Dichloropropene	23.8100	0.50	0.13	20.0000	ND	119	91 - 138			
1,2,3-Trichloropropane	21.6000	0.50	0.39	20.0000	ND	108	77 - 136			
1,2,3-Trichlorobenzene	24.5600	0.50	0.18	20.0000	ND	123	72 - 129			
1,2,4-Trichlorobenzene	23.1900	0.50	0.16	20.0000	ND	116	64 - 135			
1,2,4-Trimethylbenzene	22.3500	0.50	0.14	20.0000	ND	112	10 - 179			
1,2-Dibromo-3-chloropropane	22.3100	0.50	0.41	20.0000	ND	112	62 - 153			
1,2-Dibromoethane	22.1700	0.50	0.24	20.0000	ND	111	80 - 132			
1,2-Dichlorobenzene	21.8800	0.50	0.20	20.0000	ND	109	81 - 131			
1,2-Dichloroethane	21.4400	0.50	0.20	20.0000	ND	107	68 - 146			
1,2-Dichloropropane	21.6700	0.50	0.15	20.0000	ND	108	74 - 136			
1,3,5-Trimethylbenzene	22.6000	0.50	0.13	20.0000	ND	113	66 - 149			
1,3-Dichlorobenzene	22.1800	0.50	0.16	20.0000	ND	111	79 - 128			
1,3-Dichloropropane	21.8900	0.50	0.21	20.0000	ND	109	80 - 129			
1,4-Dichlorobenzene	21.7700	0.50	0.17	20.0000	ND	109	84 - 121			
2,2-Dichloropropane	24.7900	0.50	0.38	20.0000	ND	124	63 - 179			
2-Chlorotoluene	22.0400	0.50	0.11	20.0000	ND	110	76 - 142			
4-Chlorotoluene	21.8400	0.50	0.12	20.0000	ND	109	72 - 152			
4-Isopropyltoluene	23.2900	0.50	0.11	20.0000	ND	116	84 - 141			
Benzene	22.5100	0.50	0.13	20.0000	ND	113	79 - 131			
Bromobenzene	21.6000	0.50	0.21	20.0000	ND	108	82 - 121			
Bromodichloromethane	22.4100	0.50	0.14	20.0000	ND	112	86 - 138			
Bromoform	22.0500	0.50	0.20	20.0000	ND	110	80 - 136			
Bromomethane	28.1100	0.50	0.40	20.0000	ND	141	35 - 194			
Carbon tetrachloride	24.5000	0.50	0.09	20.0000	ND	122	73 - 176			
Chlorobenzene	22.1000	0.50	0.13	20.0000	ND	110	81 - 124			
Chloroethane	26.1000	0.50	0.15	20.0000	ND	130	0 - 257			
Chloroform	22.8000	0.50	0.11	20.0000	ND	114	76 - 139			
Chloromethane	23.8600	0.50	0.12	20.0000	ND	119	27 - 144			
cis-1,2-Dichloroethene	22.5200	0.50	0.14	20.0000	ND	113	69 - 139			
cis-1,3-Dichloropropene	22.0700	0.50	0.13	20.0000	ND	110	67 - 149			



Certificate of Analysis

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3131 Camino De Rio North Suite 355

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Project Number : Raytheon Main, 532.30

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Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike (B2H0857-MS1) - Continued

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

Dibromochloromethane	20.3000	0.50	0.16	20.0000	ND	102	91 - 131			
Dibromomethane	21.8200	0.50	0.19	20.0000	ND	109	70 - 134			
Dichlorodifluoromethane	26.0500	0.50	0.18	20.0000	ND	130	0 - 161			
Ethylbenzene	23.0700	0.50	0.13	20.0000	ND	115	89 - 134			
Hexachlorobutadiene	23.0200	0.50	0.15	20.0000	ND	115	73 - 137			
Isopropylbenzene	22.5800	0.50	0.10	20.0000	ND	113	72 - 152			
m,p-Xylene	45.5300	1.0	0.19	40.0000	ND	114	82 - 141			
Methylene chloride	21.3700	1.0	0.71	20.0000	ND	107	74 - 133			
n-Butylbenzene	23.2000	0.50	0.11	20.0000	ND	116	65 - 164			
n-Propylbenzene	22.9300	0.50	0.10	20.0000	ND	115	73 - 161			
Naphthalene	25.5400	0.50	0.41	20.0000	ND	128	59 - 105			M2
o-Xylene	21.5700	0.50	0.13	20.0000	ND	108	90 - 134			
sec-Butylbenzene	23.0500	0.50	0.09	20.0000	ND	115	80 - 157			
Styrene	23.1500	0.50	0.13	20.0000	ND	116	0 - 222			
tert-Butylbenzene	22.5500	0.50	0.09	20.0000	ND	113	88 - 141			
Tetrachloroethene	23.1500	0.50	0.10	20.0000	ND	116	75 - 136			
Toluene	22.3200	0.50	0.12	20.0000	ND	112	82 - 132			
trans-1,2-Dichloroethene	22.8900	0.50	0.09	20.0000	ND	114	65 - 135			
Trichloroethene	22.4900	0.50	0.10	20.0000	ND	112	75 - 128			
Trichlorofluoromethane	24.7900	0.50	0.23	20.0000	ND	124	89 - 143			
Vinyl chloride	25.3400	0.50	0.13	20.0000	ND	127	50 - 148			

Surrogate: 1,2-Dichloroethane-d4	25.64			25.0000		103	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.18			25.0000		101	73 - 124			
Surrogate: Dibromofluoromethane	25.24			25.0000		101	78 - 129			
Surrogate: Toluene-d8	24.93			25.0000		99.7	84 - 117			

Matrix Spike (B2H0857-MS2)

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	24.5600	0.50	0.11	20.0000	ND	123	81 - 133			
1,1,1-Trichloroethane	26.2000	0.50	0.21	20.0000	ND	131	93 - 149			
1,1,2,2-Tetrachloroethane	26.3500	0.50	0.36	20.0000	ND	132	69 - 151			
1,1,2-Trichloroethane	25.5700	0.50	0.25	20.0000	ND	128	78 - 130			
1,1-Dichloroethane	25.0700	0.50	0.09	20.0000	ND	125	68 - 135			
1,1-Dichloroethene	26.1300	0.50	0.13	20.0000	ND	131	77 - 134			
1,1-Dichloropropene	26.8100	0.50	0.13	20.0000	ND	134	91 - 138			
1,2,3-Trichloropropane	24.4200	0.50	0.39	20.0000	ND	122	77 - 136			
1,2,3-Trichlorobenzene	27.0100	0.50	0.18	20.0000	ND	135	72 - 129			M2
1,2,4-Trichlorobenzene	26.1200	0.50	0.16	20.0000	ND	131	64 - 135			
1,2,4-Trimethylbenzene	25.2200	0.50	0.14	20.0000	ND	126	10 - 179			
1,2-Dibromo-3-chloropropane	25.2300	0.50	0.41	20.0000	ND	126	62 - 153			
1,2-Dibromoethane	24.9700	0.50	0.24	20.0000	ND	125	80 - 132			
1,2-Dichlorobenzene	24.5800	0.50	0.20	20.0000	ND	123	81 - 131			
1,2-Dichloroethane	24.6100	0.50	0.20	20.0000	ND	123	68 - 146			
1,2-Dichloropropane	24.7900	0.50	0.15	20.0000	ND	124	74 - 136			
1,3,5-Trimethylbenzene	25.3600	0.50	0.13	20.0000	ND	127	66 - 149			
1,3-Dichlorobenzene	25.2100	0.50	0.16	20.0000	ND	126	79 - 128			



Certificate of Analysis

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3131 Camino De Rio North Suite 355

San Diego , CA 92108

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Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike (B2H0857-MS2) - Continued

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,3-Dichloropropane	24.5200	0.50	0.21	20.0000	ND	123	80 - 129			
1,4-Dichlorobenzene	24.6700	0.50	0.17	20.0000	ND	123	84 - 121			M2
2,2-Dichloropropane	26.4300	0.50	0.38	20.0000	ND	132	63 - 179			
2-Chlorotoluene	24.8100	0.50	0.11	20.0000	ND	124	76 - 142			
4-Chlorotoluene	24.4800	0.50	0.12	20.0000	ND	122	72 - 152			
4-Isopropyltoluene	25.9600	0.50	0.11	20.0000	ND	130	84 - 141			
Benzene	25.6600	0.50	0.13	20.0000	ND	128	79 - 131			
Bromobenzene	24.3500	0.50	0.21	20.0000	ND	122	82 - 121			M2
Bromodichloromethane	25.8200	0.50	0.14	20.0000	ND	129	86 - 138			
Bromoform	24.7900	0.50	0.20	20.0000	ND	124	80 - 136			
Bromomethane	30.8900	0.50	0.40	20.0000	ND	154	35 - 194			
Carbon tetrachloride	27.8500	0.50	0.09	20.0000	ND	139	73 - 176			
Chlorobenzene	24.7600	0.50	0.13	20.0000	ND	124	81 - 124			
Chloroethane	27.7800	0.50	0.15	20.0000	ND	139	0 - 257			
Chloroform	27.6200	0.50	0.11	20.0000	0.580000	135	76 - 139			
Chloromethane	25.3600	0.50	0.12	20.0000	ND	127	27 - 144			
cis-1,2-Dichloroethene	24.4900	0.50	0.14	20.0000	ND	122	69 - 139			
cis-1,3-Dichloropropene	25.1900	0.50	0.13	20.0000	ND	126	67 - 149			
Dibromochloromethane	22.9900	0.50	0.16	20.0000	ND	115	91 - 131			
Dibromomethane	24.9600	0.50	0.19	20.0000	ND	125	70 - 134			
Dichlorodifluoromethane	27.0300	0.50	0.18	20.0000	ND	135	0 - 161			
Ethylbenzene	25.4400	0.50	0.13	20.0000	ND	127	89 - 134			
Hexachlorobutadiene	26.0200	0.50	0.15	20.0000	ND	130	73 - 137			
Isopropylbenzene	25.3300	0.50	0.10	20.0000	ND	127	72 - 152			
m,p-Xylene	51.1700	1.0	0.19	40.0000	ND	128	82 - 141			
Methylene chloride	23.7800	1.0	0.71	20.0000	ND	119	74 - 133			
n-Butylbenzene	26.2700	0.50	0.11	20.0000	ND	131	65 - 164			
n-Propylbenzene	25.7100	0.50	0.10	20.0000	ND	129	73 - 161			
Naphthalene	28.7100	0.50	0.41	20.0000	ND	144	59 - 105			M2
o-Xylene	25.3700	0.50	0.13	20.0000	ND	127	90 - 134			
sec-Butylbenzene	25.7300	0.50	0.09	20.0000	ND	129	80 - 157			
Styrene	25.7500	0.50	0.13	20.0000	ND	129	0 - 222			
tert-Butylbenzene	25.3600	0.50	0.09	20.0000	ND	127	88 - 141			
Tetrachloroethene	26.0700	0.50	0.10	20.0000	ND	130	75 - 136			
Toluene	25.4900	0.50	0.12	20.0000	ND	127	82 - 132			
trans-1,2-Dichloroethene	24.7100	0.50	0.09	20.0000	ND	124	65 - 135			
Trichloroethene	25.2300	0.50	0.10	20.0000	ND	126	75 - 128			
Trichlorofluoromethane	26.4800	0.50	0.23	20.0000	ND	132	89 - 143			
Vinyl chloride	27.4900	0.50	0.13	20.0000	ND	137	50 - 148			

Surrogate: 1,2-Dichloroethane-d4

25.20

25.0000

101

64 - 155

Surrogate: 4-Bromofluorobenzene

25.05

25.0000

100

73 - 124

Surrogate: Dibromofluoromethane

25.38

25.0000

102

78 - 129

Surrogate: Toluene-d8

25.57

25.0000

102

84 - 117

Matrix Spike Dup (B2H0857-MSD1)

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022



Certificate of Analysis

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San Diego , CA 92108

Project Number : Raytheon Main, 532.30

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0857-MSD1) - Continued

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	23.4300	0.50	0.11	20.0000	ND	117	81 - 133	5.98	20	
1,1,1-Trichloroethane	25.4300	0.50	0.21	20.0000	ND	127	93 - 149	6.87	20	
1,1,2,2-Tetrachloroethane	25.0100	0.50	0.36	20.0000	ND	125	69 - 151	8.11	20	
1,1,2-Trichloroethane	23.9500	0.50	0.25	20.0000	ND	120	78 - 130	6.69	20	
1,1-Dichloroethane	24.0300	0.50	0.09	20.0000	ND	120	68 - 135	6.67	20	
1,1-Dichloroethene	25.4700	0.50	0.13	20.0000	ND	127	77 - 134	3.68	20	
1,1-Dichloropropene	26.0200	0.50	0.13	20.0000	ND	130	91 - 138	8.87	20	
1,2,3-Trichloropropane	22.4800	0.50	0.39	20.0000	ND	112	77 - 136	3.99	20	
1,2,3-Trichlorobenzene	25.6800	0.50	0.18	20.0000	ND	128	72 - 129	4.46	20	
1,2,4-Trichlorobenzene	24.9000	0.50	0.16	20.0000	ND	124	64 - 135	7.11	20	
1,2,4-Trimethylbenzene	23.5300	0.50	0.14	20.0000	ND	118	10 - 179	5.14	20	
1,2-Dibromo-3-chloropropane	24.1300	0.50	0.41	20.0000	ND	121	62 - 153	7.84	20	
1,2-Dibromoethane	23.9400	0.50	0.24	20.0000	ND	120	80 - 132	7.68	20	
1,2-Dichlorobenzene	23.2500	0.50	0.20	20.0000	ND	116	81 - 131	6.07	20	
1,2-Dichloroethane	23.3400	0.50	0.20	20.0000	ND	117	68 - 146	8.49	20	
1,2-Dichloropropane	23.7800	0.50	0.15	20.0000	ND	119	74 - 136	9.28	20	
1,3,5-Trimethylbenzene	23.8600	0.50	0.13	20.0000	ND	119	66 - 149	5.42	20	
1,3-Dichlorobenzene	23.6600	0.50	0.16	20.0000	ND	118	79 - 128	6.46	20	
1,3-Dichloropropane	23.4300	0.50	0.21	20.0000	ND	117	80 - 129	6.80	20	
1,4-Dichlorobenzene	23.2300	0.50	0.17	20.0000	ND	116	84 - 121	6.49	20	
2,2-Dichloropropane	25.8100	0.50	0.38	20.0000	ND	129	63 - 179	4.03	20	
2-Chlorotoluene	23.3800	0.50	0.11	20.0000	ND	117	76 - 142	5.90	20	
4-Chlorotoluene	23.0900	0.50	0.12	20.0000	ND	115	72 - 152	5.56	20	
4-Isopropyltoluene	24.7300	0.50	0.11	20.0000	ND	124	84 - 141	6.00	20	
Benzene	24.5100	0.50	0.13	20.0000	ND	123	79 - 131	8.51	20	
Bromobenzene	22.9500	0.50	0.21	20.0000	ND	115	82 - 121	6.06	20	
Bromodichloromethane	23.7400	0.50	0.14	20.0000	ND	119	86 - 138	5.76	20	
Bromoform	23.6600	0.50	0.20	20.0000	ND	118	80 - 136	7.04	20	
Bromomethane	30.3800	0.50	0.40	20.0000	ND	152	35 - 194	7.76	20	
Carbon tetrachloride	26.3900	0.50	0.09	20.0000	ND	132	73 - 176	7.43	20	
Chlorobenzene	23.7100	0.50	0.13	20.0000	ND	119	81 - 124	7.03	20	
Chloroethane	28.0100	0.50	0.15	20.0000	ND	140	0 - 257	7.06	20	
Chloroform	24.7200	0.50	0.11	20.0000	ND	124	76 - 139	8.08	20	
Chloromethane	24.9000	0.50	0.12	20.0000	ND	124	27 - 144	4.27	20	
cis-1,2-Dichloroethene	23.7800	0.50	0.14	20.0000	ND	119	69 - 139	5.44	20	
cis-1,3-Dichloropropene	23.7200	0.50	0.13	20.0000	ND	119	67 - 149	7.21	20	
Dibromochloromethane	21.6600	0.50	0.16	20.0000	ND	108	91 - 131	6.48	20	
Dibromomethane	22.9600	0.50	0.19	20.0000	ND	115	70 - 134	5.09	20	
Dichlorodifluoromethane	27.5400	0.50	0.18	20.0000	ND	138	0 - 161	5.56	20	
Ethylbenzene	24.6000	0.50	0.13	20.0000	ND	123	89 - 134	6.42	20	
Hexachlorobutadiene	24.7300	0.50	0.15	20.0000	ND	124	73 - 137	7.16	20	
Isopropylbenzene	24.0400	0.50	0.10	20.0000	ND	120	72 - 152	6.26	20	
m,p-Xylene	49.3100	1.0	0.19	40.0000	ND	123	82 - 141	7.97	20	
Methylene chloride	22.7600	1.0	0.71	20.0000	ND	114	74 - 133	6.30	20	
n-Butylbenzene	24.6900	0.50	0.11	20.0000	ND	123	65 - 164	6.22	20	



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Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0857-MSD1) - Continued

Source: 2202081-04

Prepared: 8/9/2022 Analyzed: 8/9/2022

n-Propylbenzene	24.1100	0.50	0.10	20.0000	ND	121	73 - 161	5.02	20	
Naphthalene	27.2200	0.50	0.41	20.0000	ND	136	59 - 105	6.37	20	M2
o-Xylene	23.1100	0.50	0.13	20.0000	ND	116	90 - 134	6.89	20	
sec-Butylbenzene	24.2800	0.50	0.09	20.0000	ND	121	80 - 157	5.20	20	
Styrene	24.5000	0.50	0.13	20.0000	ND	122	0 - 222	5.67	20	
tert-Butylbenzene	23.8200	0.50	0.09	20.0000	ND	119	88 - 141	5.48	20	
Tetrachloroethene	24.8700	0.50	0.10	20.0000	ND	124	75 - 136	7.16	20	
Toluene	24.2400	0.50	0.12	20.0000	ND	121	82 - 132	8.25	20	
trans-1,2-Dichloroethene	24.1500	0.50	0.09	20.0000	ND	121	65 - 135	5.36	20	
Trichloroethene	23.8500	0.50	0.10	20.0000	ND	119	75 - 128	5.87	20	
Trichlorofluoromethane	26.1000	0.50	0.23	20.0000	ND	130	89 - 143	5.15	20	
Vinyl chloride	26.7300	0.50	0.13	20.0000	ND	134	50 - 148	5.34	20	

Surrogate: 1,2-Dichloroethane-d4	25.31			25.0000		101	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.37			25.0000		101	73 - 124			
Surrogate: Dibromofluoromethane	25.96			25.0000		104	78 - 129			
Surrogate: Toluene-d8	24.83			25.0000		99.3	84 - 117			

Matrix Spike Dup (B2H0857-MSD2)

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

1,1,1,2-Tetrachloroethane	23.1000	0.50	0.11	20.0000	ND	116	81 - 133	6.13	20	
1,1,1-Trichloroethane	24.8500	0.50	0.21	20.0000	ND	124	93 - 149	5.29	20	
1,1,2,2-Tetrachloroethane	23.4900	0.50	0.36	20.0000	ND	117	69 - 151	11.5	20	
1,1,2-Trichloroethane	22.9300	0.50	0.25	20.0000	ND	115	78 - 130	10.9	20	
1,1-Dichloroethane	23.3800	0.50	0.09	20.0000	ND	117	68 - 135	6.98	20	
1,1-Dichloroethene	24.5200	0.50	0.13	20.0000	ND	123	77 - 134	6.36	20	
1,1-Dichloropropene	24.3500	0.50	0.13	20.0000	ND	122	91 - 138	9.62	20	
1,2,3-Trichloropropane	21.9800	0.50	0.39	20.0000	ND	110	77 - 136	10.5	20	
1,2,3-Trichlorobenzene	24.8700	0.50	0.18	20.0000	ND	124	72 - 129	8.25	20	
1,2,4-Trichlorobenzene	23.5600	0.50	0.16	20.0000	ND	118	64 - 135	10.3	20	
1,2,4-Trimethylbenzene	22.3800	0.50	0.14	20.0000	ND	112	10 - 179	11.9	20	
1,2-Dibromo-3-chloropropane	22.6200	0.50	0.41	20.0000	ND	113	62 - 153	10.9	20	
1,2-Dibromoethane	22.5100	0.50	0.24	20.0000	ND	113	80 - 132	10.4	20	
1,2-Dichlorobenzene	22.7200	0.50	0.20	20.0000	ND	114	81 - 131	7.86	20	
1,2-Dichloroethane	22.4600	0.50	0.20	20.0000	ND	112	68 - 146	9.14	20	
1,2-Dichloropropane	22.8700	0.50	0.15	20.0000	ND	114	74 - 136	8.06	20	
1,3,5-Trimethylbenzene	23.0300	0.50	0.13	20.0000	ND	115	66 - 149	9.63	20	
1,3-Dichlorobenzene	22.7700	0.50	0.16	20.0000	ND	114	79 - 128	10.2	20	
1,3-Dichloropropane	22.6600	0.50	0.21	20.0000	ND	113	80 - 129	7.88	20	
1,4-Dichlorobenzene	22.2000	0.50	0.17	20.0000	ND	111	84 - 121	10.5	20	
2,2-Dichloropropane	24.8600	0.50	0.38	20.0000	ND	124	63 - 179	6.12	20	
2-Chlorotoluene	22.5600	0.50	0.11	20.0000	ND	113	76 - 142	9.50	20	
4-Chlorotoluene	22.3600	0.50	0.12	20.0000	ND	112	72 - 152	9.05	20	
4-Isopropyltoluene	23.5200	0.50	0.11	20.0000	ND	118	84 - 141	9.86	20	
Benzene	23.4800	0.50	0.13	20.0000	ND	117	79 - 131	8.87	20	
Bromobenzene	22.0200	0.50	0.21	20.0000	ND	110	82 - 121	10.0	20	
Bromodichloromethane	23.4300	0.50	0.14	20.0000	ND	117	86 - 138	9.71	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0857 - MSVOA_LL_W (continued)

Matrix Spike Dup (B2H0857-MSD2) - Continued

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/9/2022

Bromoform	23.0900	0.50	0.20	20.0000	ND	115	80 - 136	7.10	20	
Bromomethane	29.6000	0.50	0.40	20.0000	ND	148	35 - 194	4.27	20	
Carbon tetrachloride	25.3200	0.50	0.09	20.0000	ND	127	73 - 176	9.52	20	
Chlorobenzene	23.0100	0.50	0.13	20.0000	ND	115	81 - 124	7.33	20	
Chloroethane	27.0900	0.50	0.15	20.0000	ND	135	0 - 257	2.52	20	
Chloroform	25.7200	0.50	0.11	20.0000	0.580000	126	76 - 139	7.12	20	
Chloromethane	24.9800	0.50	0.12	20.0000	ND	125	27 - 144	1.51	20	
cis-1,2-Dichloroethene	23.2700	0.50	0.14	20.0000	ND	116	69 - 139	5.11	20	
cis-1,3-Dichloropropene	22.5900	0.50	0.13	20.0000	ND	113	67 - 149	10.9	20	
Dibromochloromethane	21.3500	0.50	0.16	20.0000	ND	107	91 - 131	7.40	20	
Dibromomethane	22.6400	0.50	0.19	20.0000	ND	113	70 - 134	9.75	20	
Dichlorodifluoromethane	25.2300	0.50	0.18	20.0000	ND	126	0 - 161	6.89	20	
Ethylbenzene	23.6900	0.50	0.13	20.0000	ND	118	89 - 134	7.12	20	
Hexachlorobutadiene	23.7100	0.50	0.15	20.0000	ND	119	73 - 137	9.29	20	
Isopropylbenzene	23.1100	0.50	0.10	20.0000	ND	116	72 - 152	9.17	20	
m,p-Xylene	47.2600	1.0	0.19	40.0000	ND	118	82 - 141	7.94	20	
Methylene chloride	22.2700	1.0	0.71	20.0000	ND	111	74 - 133	6.56	20	
n-Butylbenzene	23.6000	0.50	0.11	20.0000	ND	118	65 - 164	10.7	20	
n-Propylbenzene	23.3600	0.50	0.10	20.0000	ND	117	73 - 161	9.58	20	
Naphthalene	25.6900	0.50	0.41	20.0000	ND	128	59 - 105	11.1	20	M2
o-Xylene	23.3300	0.50	0.13	20.0000	ND	117	90 - 134	8.38	20	
sec-Butylbenzene	23.1000	0.50	0.09	20.0000	ND	116	80 - 157	10.8	20	
Styrene	23.3100	0.50	0.13	20.0000	ND	117	0 - 222	9.95	20	
tert-Butylbenzene	23.0100	0.50	0.09	20.0000	ND	115	88 - 141	9.72	20	
Tetrachloroethene	24.3400	0.50	0.10	20.0000	ND	122	75 - 136	6.86	20	
Toluene	23.3100	0.50	0.12	20.0000	ND	117	82 - 132	8.93	20	
trans-1,2-Dichloroethene	23.8100	0.50	0.09	20.0000	ND	119	65 - 135	3.71	20	
Trichloroethene	23.1000	0.50	0.10	20.0000	ND	116	75 - 128	8.81	20	
Trichlorofluoromethane	24.9100	0.50	0.23	20.0000	ND	125	89 - 143	6.11	20	
Vinyl chloride	25.7100	0.50	0.13	20.0000	ND	129	50 - 148	6.69	20	
Surrogate: 1,2-Dichloroethane-d4	25.46			25.0000		102	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.86			25.0000		103	73 - 124			
Surrogate: Dibromofluoromethane	25.80			25.0000		103	78 - 129			
Surrogate: Toluene-d8	25.08			25.0000		100	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0843 - MSSEMI_W

Blank (B2H0843-BLK1)

Prepared: 8/5/2022 Analyzed: 8/9/2022

1,4-Dioxane ND 2.0 0.84

Surrogate: 1,2-Dichlorobenzene-d4	111.3		100.000	111	17 - 119
Surrogate: 2-Fluorobiphenyl	83.94		100.000	83.9	10 - 133
Surrogate: 4-Terphenyl-d14	81.75		100.000	81.8	5 - 139
Surrogate: Nitrobenzene-d5	91.49		100.000	91.5	13 - 150

LCS (B2H0843-BS1)

Prepared: 8/5/2022 Analyzed: 8/9/2022

1,4-Dioxane 104.100 2.0 0.84 100.000 104 75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	93.45		100.000	93.4	17 - 119
Surrogate: 2-Fluorobiphenyl	85.92		100.000	85.9	10 - 133
Surrogate: 4-Terphenyl-d14	83.95		100.000	84.0	5 - 139
Surrogate: Nitrobenzene-d5	100.1		100.000	100	13 - 150

LCS Dup (B2H0843-BSD1)

Prepared: 8/5/2022 Analyzed: 8/9/2022

1,4-Dioxane 105.920 2.0 0.84 100.000 106 75 - 155 1.73 20

Surrogate: 1,2-Dichlorobenzene-d4	113.4		100.000	113	17 - 119
Surrogate: 2-Fluorobiphenyl	83.93		100.000	83.9	10 - 133
Surrogate: 4-Terphenyl-d14	85.96		100.000	86.0	5 - 139
Surrogate: Nitrobenzene-d5	97.27		100.000	97.3	13 - 150



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0860 - MSSEMI_W

Blank (B2H0860-BLK1)

Prepared: 8/9/2022 Analyzed: 8/11/2022

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d4	1.086			1.00000	109	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9711			1.00000	97.1	8 - 111			
Surrogate: 4-Terphenyl-d14	0.9501			1.00000	95.0	12 - 113			
Surrogate: Nitrobenzene-d5	1.150			1.00000	115	15 - 121			

LCS (B2H0860-BS1)

Prepared: 8/9/2022 Analyzed: 8/11/2022

1,4-Dioxane	0.855120	0.20	0.05	1.00000	85.5	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	1.070			1.00000	107	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9138			1.00000	91.4	8 - 111			
Surrogate: 4-Terphenyl-d14	1.029			1.00000	103	12 - 113			
Surrogate: Nitrobenzene-d5	1.122			1.00000	112	15 - 121			

Matrix Spike (B2H0860-MS1)

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/11/2022

1,4-Dioxane	0.913630	0.20	0.05	1.00000	ND	91.4	75 - 155		
Surrogate: 1,2-Dichlorobenzene-d4	1.119			1.00000	112	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9490			1.00000	94.9	8 - 111			
Surrogate: 4-Terphenyl-d14	1.038			1.00000	104	12 - 113			
Surrogate: Nitrobenzene-d5	1.182			1.00000	118	15 - 121			

Matrix Spike Dup (B2H0860-MSD1)

Source: 2202081-12

Prepared: 8/9/2022 Analyzed: 8/11/2022

1,4-Dioxane	1.10913	0.20	0.05	1.00000	ND	111	75 - 155	19.3	20
Surrogate: 1,2-Dichlorobenzene-d4	1.113			1.00000	111	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9439			1.00000	94.4	8 - 111			
Surrogate: 4-Terphenyl-d14	1.036			1.00000	104	12 - 113			
Surrogate: Nitrobenzene-d5	1.201			1.00000	120	15 - 121			



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/16/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0932 - MSSEMI_W

Blank (B2H0932-BLK1)

Prepared: 8/15/2022 Analyzed: 8/16/2022

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d4	1.090			1.00000		109	13 - 99		S12
Surrogate: 2-Fluorobiphenyl	0.9947			1.00000		99.5	8 - 111		
Surrogate: 4-Terphenyl-d14	1.065			1.00000		107	12 - 113		
Surrogate: Nitrobenzene-d5	1.153			1.00000		115	15 - 121		

Matrix Spike (B2H0932-MS1)

Source: 2202081-04

Prepared: 8/15/2022 Analyzed: 8/16/2022

1,4-Dioxane	0.972670	0.20	0.05	1.00000	ND	97.3	75 - 155		
Surrogate: 1,2-Dichlorobenzene-d4	1.068			1.00000		107	13 - 99		S12
Surrogate: 2-Fluorobiphenyl	0.9288			1.00000		92.9	8 - 111		
Surrogate: 4-Terphenyl-d14	1.163			1.00000		116	12 - 113		S12
Surrogate: Nitrobenzene-d5	1.181			1.00000		118	15 - 121		

Matrix Spike Dup (B2H0932-MSD1)

Source: 2202081-04

Prepared: 8/15/2022 Analyzed: 8/16/2022

1,4-Dioxane	0.413690	0.20	0.05	1.00000	ND	41.4	75 - 155	80.6	20	M2, R
Surrogate: 1,2-Dichlorobenzene-d4	1.099			1.00000		110	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9734			1.00000		97.3	8 - 111			
Surrogate: 4-Terphenyl-d14	1.214			1.00000		121	12 - 113			S12
Surrogate: Nitrobenzene-d5	1.198			1.00000		120	15 - 121			

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto
QA Manager Andrew Donnelly
Phone 858.455.6500
Fax 858.455.6533

Sampled By:

A. DONNELLY, A. KELSO		SAMPLE COLLECTION	
LAB ID	SAMPLE ID	Date	Time
11	MW-28	8/4/22	0857
	↓		↓
12	MW-20		1154
	↓		↓
13	RB-080422		1220
	↓		↓
14	MW-28 MW-18		1518
	↓		↓

PROJECT: Raytheon Main		TASK NO.: 532.30		PROJECT Manager Steve Netto		QA Manager Andrew Donnelly		Phone 858.455.6500		Fax 858.455.6533	
Sampled By: A. DONNELLY, A. KELSO LAB ID SAMPLE ID Time											
11	0	MW-28	8/4/22	0857							
12	0	MW-20	↓	1154							
13	0	RB-080422	↓	1220							
14	0	MW-28 MW-18	↓	1510							
Groundwater Lab prepared water											
MATRIX PRESERVATION CONTAINERS ANALYSIS REQUESTED Expected Concentration Range (ppb) for VOA's SPECIAL HANDLING											
Groundwater Lab prepared water Hydrochloric Acid (HCl) Ice 40-ml VOA 1 L Amber VOCs by EPA 8260B 1,4 Dioxane 8270 SIM 1,4-Dioxane 8270 MOD 0 - 10 10 - 100 100 - 1,000 >1,000 24 hr TAT 48 hr TAT Standard TAT Level IV Data Validation Requested MS/MSD Requested											
REMARKS Report J Flags											
Laboratory ATL Attn: Edward Bae 3257 Walnut Ave Signal Hill, CA 90755 562-989-4045											
Total number of containers per analysis: Total No. of Containers:											

Total number of containers per analysis:

Relinquished By: / Company:

Date / Time	Received By: / Company

Date / Time

	No. of containers correct
	Received in good condition
	Custody seals secure
	Conforms to COC document

Send Results to:
Steve Netto

	Custody seals secure
	Conforms to COC document

3131 Camino del Rio N
Suite 355
San Diego, CA 92108
Ph: 858.455.5400
snetto@harqis.com

Instructions

Temperature on receipt

Fill out form completely and sign only after verified for completeness
 Complete in ballpoint pen. Draw one line through error, initial and date correction
 Indicate the number of sample containers in analytical request space; indicate choice with ✓ or x
 Note applicable preservatives, special instructions, and deviations from typical environmental samples.
 Consult project QA documents for specific instructions.

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858.455.6500

Fax 858.455.6533

Sampled By: D. Seale, A. Warden		
SAMPLE COLLECTION		
LAB ID	SAMPLE ID	Date Time
1	IR-080422A AW-32A	08-04-22 0730
2	MW-42	08-03-22 1010
3	MW-32A	1158
4	MW-32C	1500
5	MIN-39	08/04/22 0957
6	MW-36	1148
7	MW-3600	1230
8	MW-34A	1358

Total number of containers per analysis:

Relinquished By: / Company:

Amber Warden / HFA

Relinquished By: / Company:

AW-32-ATL

Date / Time Received By: / Company

8/4/22 1611 AW-32-ATL

Date / Time Received By: / Company

8/4/22 1650 AW-32-ATL

Instructions

Fill out form completely and sign only after verified for completeness
complete in ballpoint pen. Draw one line through error, initial and date correction
indicate the number of sample containers in analytical request space; indicate choice with ✓ or x
for applicable preservatives, special instructions, and deviations from typical environmental samples.
consult project QA documents for specific instructions.

2202081

Date: 08.04.22
Page 1 of 3

2.6, 2.8°C

MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED	Expected Concentration Range (ppb) for VOA's	SPECIAL HANDLING	Laboratory
Groundwater	Hydrochloric Acid (HCl)	40-ml VOA	1,4-Dioxane 8270 SIM	0-10	24 hr TAT	ATL
Lab prepared water			1,4-Dioxane 8270 MOD	10-100	48 hr TAT	Attn: Edward Bae
			VOCs by EPA 8260B	100-1,000	Standard TAT	3257 Walnut Ave
				>1,000	Level IV Data Validation Requested	Signal Hill, CA 90755
					MS/MSD Requested	562-989-4045
						Report J Flags

Total No. of Containers:

No. of containers correct
Received in good condition
Custody seals secure
Conforms to COC document

Send Results to:

Steve Netto

3131 Camino del Rio N
Suite 355

San Diego, CA 92108

Ph: 858.455.5400

snetto@hargis.com

Temperature on receipt

Date: 08/04/22
Page 2 of 3

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto
QA Manager Andrew Donnelly
Phone 858.455.6500
Fax 858.455.6533

Sampled By:

SAMPLE COLLECTION

LAB ID	SAMPLE ID	Date	Time

9	•	MW-34B	↓	08/04/22	1423	↓
10	•	MW-41	↓	↓	1516	↓

[illegible]

[illegible][illegible][illegible]

Relinquished By: / Company:	Date / Time	Received
Amber Warden / H+A	8/17/22 1611	Ch

Relinquished By: / Company:	Date / Time	Received
Esther 2nd A7L	8/14/02 1650	766

Instructions
Fill out form completely and sign only after verified for completeness

Complete in ballpoint pen. Draw one line through error, initial and date corrections. Indicate the number of sample containers in analytical request space; indicate if sample is for analysis only or for QA. Note applicable preservatives, special instructions, and deviations from typical environmental sampling procedures. Consult project QA documents for specific instructions.

55 of 555[illegible]

Total number of containers per analysis:

Relinquished By: / Company:

Date / Time	Received By: / Company

Date / Time

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10/10/2008

Send Results to:

	Custody seals secure
	Conforms to COC document

Steve Netto
3131 Camino del Rio
Suite 355
San Diego, CA 92108
Ph: 858.455.5400
snetto@hargis.com

Instructions

Temperature on receipt

Fill out form completely and sign only after verified for completeness

Complete in ballpoint pen. Draw one line through error, initial and date correction

Indicate the number of sample containers in analytical request space: indicate choice with ✓ or x

Note applicable preservatives, special instructions, and deviations from typical environmental samples.

Consult project QA documents for specific instructions.

August 17, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

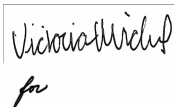
ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 2202095
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on August 08, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,



Victoria Michel, Project Assistant
Victoria.Michel@atlglobal.com
Authorized to Release on 08/17/22 11:40 on Behalf of



Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

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Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-080522	2202095-01	Water	8/05/22 8:00	8/08/22 16:05
MW-43	2202095-02	Water	8/05/22 9:22	8/08/22 16:05
MW-31	2202095-03	Water	8/05/22 11:05	8/08/22 16:05
MW-40	2202095-04	Water	8/05/22 9:20	8/08/22 16:05
MW-30A	2202095-05	Water	8/05/22 10:15	8/08/22 16:05
MW-30B	2202095-06	Water	8/05/22 11:24	8/08/22 16:05



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Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: TB-080522

Lab ID: 2202095-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0896	08/11/2022	08/11/22 14:11	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0896	08/11/2022	08/11/22 14:11	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0896	08/11/2022	08/11/22 14:11	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0896	08/11/2022	08/11/22 14:11	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0896	08/11/2022	08/11/22 14:11	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0896	08/11/2022	08/11/22 14:11	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0896	08/11/2022	08/11/22 14:11	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0896	08/11/2022	08/11/22 14:11	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0896	08/11/2022	08/11/22 14:11	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0896	08/11/2022	08/11/22 14:11	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0896	08/11/2022	08/11/22 14:11	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0896	08/11/2022	08/11/22 14:11	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0896	08/11/2022	08/11/22 14:11	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0896	08/11/2022	08/11/22 14:11	
Benzene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
Bromobenzene	ND	0.50	0.21	1	B2H0896	08/11/2022	08/11/22 14:11	
Bromodichloromethane	ND	0.50	0.14	1	B2H0896	08/11/2022	08/11/22 14:11	
Bromoform	ND	0.50	0.20	1	B2H0896	08/11/2022	08/11/22 14:11	
Bromomethane	ND	0.50	0.40	1	B2H0896	08/11/2022	08/11/22 14:11	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0896	08/11/2022	08/11/22 14:11	
Chlorobenzene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
Chloroethane	ND	0.50	0.15	1	B2H0896	08/11/2022	08/11/22 14:11	
Chloroform	ND	0.50	0.11	1	B2H0896	08/11/2022	08/11/22 14:11	
Chloromethane	ND	0.50	0.12	1	B2H0896	08/11/2022	08/11/22 14:11	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0896	08/11/2022	08/11/22 14:11	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
Dibromochloromethane	ND	0.50	0.16	1	B2H0896	08/11/2022	08/11/22 14:11	
Dibromomethane	ND	0.50	0.19	1	B2H0896	08/11/2022	08/11/22 14:11	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0896	08/11/2022	08/11/22 14:11	
Ethylbenzene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: TB-080522

Lab ID: 2202095-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0896	08/11/2022	08/11/22 14:11	
Isopropylbenzene	ND	0.50	0.10	1	B2H0896	08/11/2022	08/11/22 14:11	
m,p-Xylene	ND	1.0	0.19	1	B2H0896	08/11/2022	08/11/22 14:11	
Methylene chloride	ND	1.0	0.71	1	B2H0896	08/11/2022	08/11/22 14:11	
n-Butylbenzene	ND	0.50	0.11	1	B2H0896	08/11/2022	08/11/22 14:11	
n-Propylbenzene	ND	0.50	0.10	1	B2H0896	08/11/2022	08/11/22 14:11	
Naphthalene	ND	0.50	0.41	1	B2H0896	08/11/2022	08/11/22 14:11	
o-Xylene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0896	08/11/2022	08/11/22 14:11	
Styrene	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0896	08/11/2022	08/11/22 14:11	
Tetrachloroethene	ND	0.50	0.10	1	B2H0896	08/11/2022	08/11/22 14:11	
Toluene	ND	0.50	0.12	1	B2H0896	08/11/2022	08/11/22 14:11	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0896	08/11/2022	08/11/22 14:11	
Trichloroethene	ND	0.50	0.10	1	B2H0896	08/11/2022	08/11/22 14:11	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0896	08/11/2022	08/11/22 14:11	
Vinyl chloride	ND	0.50	0.13	1	B2H0896	08/11/2022	08/11/22 14:11	
Surrogate: 1,2-Dichloroethane-d4	104 %	64 - 155			B2H0896	08/11/2022	08/11/22 14:11	
Surrogate: 4-Bromofluorobenzene	97.3 %	73 - 124			B2H0896	08/11/2022	08/11/22 14:11	
Surrogate: Dibromofluoromethane	100 %	78 - 129			B2H0896	08/11/2022	08/11/22 14:11	
Surrogate: Toluene-d8	100 %	84 - 117			B2H0896	08/11/2022	08/11/22 14:11	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-43

Lab ID: 2202095-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:33	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 17:33	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0882	08/10/2022	08/10/22 17:33	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0882	08/10/2022	08/10/22 17:33	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:33	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 17:33	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 17:33	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 17:33	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 17:33	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0882	08/10/2022	08/10/22 17:33	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0882	08/10/2022	08/10/22 17:33	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:33	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 17:33	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:33	
Benzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
Bromobenzene	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 17:33	
Bromodichloromethane	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 17:33	
Bromoform	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 17:33	
Bromomethane	ND	0.50	0.40	1	B2H0882	08/10/2022	08/10/22 17:33	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:33	
Chlorobenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
Chloroethane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 17:33	
Chloroform	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:33	
Chloromethane	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 17:33	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 17:33	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
Dibromochloromethane	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 17:33	
Dibromomethane	ND	0.50	0.19	1	B2H0882	08/10/2022	08/10/22 17:33	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 17:33	
Ethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-43

Lab ID: 2202095-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 17:33	
Isopropylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:33	
m,p-Xylene	ND	1.0	0.19	1	B2H0882	08/10/2022	08/10/22 17:33	
Methylene chloride	ND	1.0	0.71	1	B2H0882	08/10/2022	08/10/22 17:33	
n-Butylbenzene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:33	
n-Propylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:33	
Naphthalene	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 17:33	
o-Xylene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:33	
Styrene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:33	
Tetrachloroethene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:33	
Toluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 17:33	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:33	
Trichloroethene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:33	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0882	08/10/2022	08/10/22 17:33	
Vinyl chloride	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:33	
Surrogate: 1,2-Dichloroethane-d4	105 %	64 - 155			B2H0882	08/10/2022	08/10/22 17:33	
Surrogate: 4-Bromofluorobenzene	96.8 %	73 - 124			B2H0882	08/10/2022	08/10/22 17:33	
Surrogate: Dibromofluoromethane	103 %	78 - 129			B2H0882	08/10/2022	08/10/22 17:33	
Surrogate: Toluene-d8	105 %	84 - 117			B2H0882	08/10/2022	08/10/22 17:33	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0880	08/10/2022	08/16/22 16:27	
Surrogate: 1,2-Dichlorobenzene-d4	111 %	13 - 99			B2H0880	08/10/2022	08/16/22 16:27	S12
Surrogate: 2-Fluorobiphenyl	89.6 %	8 - 111			B2H0880	08/10/2022	08/16/22 16:27	
Surrogate: 4-Terphenyl-d14	107 %	12 - 113			B2H0880	08/10/2022	08/16/22 16:27	
Surrogate: Nitrobenzene-d5	118 %	15 - 121			B2H0880	08/10/2022	08/16/22 16:27	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-31

Lab ID: 2202095-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 19:16	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 19:16	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0882	08/10/2022	08/10/22 19:16	
1,1,2-Trichloroethane	0.45	0.50	0.25	1	B2H0882	08/10/2022	08/10/22 19:16	J
1,1-Dichloroethane	2.3	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 19:16	
1,1-Dichloroethene	270	5.0	1.3	10	B2H0896	08/11/2022	08/11/22 14:37	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 19:16	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 19:16	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 19:16	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 19:16	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0882	08/10/2022	08/10/22 19:16	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0882	08/10/2022	08/10/22 19:16	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 19:16	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 19:16	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 19:16	
Benzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
Bromobenzene	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 19:16	
Bromodichloromethane	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 19:16	
Bromoform	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 19:16	
Bromomethane	ND	0.50	0.40	1	B2H0882	08/10/2022	08/10/22 19:16	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 19:16	
Chlorobenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
Chloroethane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 19:16	
Chloroform	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 19:16	
Chloromethane	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 19:16	
cis-1,2-Dichloroethene	0.92	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 19:16	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
Dibromochloromethane	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 19:16	
Dibromomethane	ND	0.50	0.19	1	B2H0882	08/10/2022	08/10/22 19:16	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 19:16	
Ethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-31

Lab ID: 2202095-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 19:16	
Isopropylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 19:16	
m,p-Xylene	ND	1.0	0.19	1	B2H0882	08/10/2022	08/10/22 19:16	
Methylene chloride	ND	1.0	0.71	1	B2H0882	08/10/2022	08/10/22 19:16	
n-Butylbenzene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 19:16	
n-Propylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 19:16	
Naphthalene	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 19:16	
o-Xylene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 19:16	
Styrene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 19:16	
Tetrachloroethene	0.62	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 19:16	
Toluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 19:16	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 19:16	
Trichloroethene	14	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 19:16	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0882	08/10/2022	08/10/22 19:16	
Vinyl chloride	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 19:16	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>64 - 155</i>			B2H0882	08/10/2022	<i>08/10/22 19:16</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>64 - 155</i>			B2H0896	08/11/2022	<i>08/11/22 14:37</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.0 %</i>	<i>73 - 124</i>			B2H0882	08/10/2022	<i>08/10/22 19:16</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.2 %</i>	<i>73 - 124</i>			B2H0896	08/11/2022	<i>08/11/22 14:37</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>78 - 129</i>			B2H0882	08/10/2022	<i>08/10/22 19:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>78 - 129</i>			B2H0896	08/11/2022	<i>08/11/22 14:37</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>84 - 117</i>			B2H0882	08/10/2022	<i>08/10/22 19:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>84 - 117</i>			B2H0896	08/11/2022	<i>08/11/22 14:37</i>	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	16	0.20	0.05	1	B2H0880	08/10/2022	08/16/22 16:59	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>111 %</i>	<i>13 - 99</i>			B2H0880	08/10/2022	<i>08/16/22 16:59</i>	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>88.3 %</i>	<i>8 - 111</i>			B2H0880	08/10/2022	<i>08/16/22 16:59</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>115 %</i>	<i>12 - 113</i>			B2H0880	08/10/2022	<i>08/16/22 16:59</i>	S12
<i>Surrogate: Nitrobenzene-d5</i>	<i>121 %</i>	<i>15 - 121</i>			B2H0880	08/10/2022	<i>08/16/22 16:59</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-40

Lab ID: 2202095-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:59	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 17:59	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0882	08/10/2022	08/10/22 17:59	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0882	08/10/2022	08/10/22 17:59	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:59	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 17:59	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 17:59	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 17:59	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 17:59	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0882	08/10/2022	08/10/22 17:59	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0882	08/10/2022	08/10/22 17:59	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:59	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 17:59	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:59	
Benzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
Bromobenzene	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 17:59	
Bromodichloromethane	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 17:59	
Bromoform	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 17:59	
Bromomethane	ND	0.50	0.40	1	B2H0882	08/10/2022	08/10/22 17:59	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:59	
Chlorobenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
Chloroethane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 17:59	
Chloroform	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:59	
Chloromethane	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 17:59	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 17:59	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
Dibromochloromethane	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 17:59	
Dibromomethane	ND	0.50	0.19	1	B2H0882	08/10/2022	08/10/22 17:59	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 17:59	
Ethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-40

Lab ID: 2202095-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 17:59	
Isopropylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:59	
m,p-Xylene	ND	1.0	0.19	1	B2H0882	08/10/2022	08/10/22 17:59	
Methylene chloride	ND	1.0	0.71	1	B2H0882	08/10/2022	08/10/22 17:59	
n-Butylbenzene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 17:59	
n-Propylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:59	
Naphthalene	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 17:59	
o-Xylene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:59	
Styrene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:59	
Tetrachloroethene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:59	
Toluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 17:59	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 17:59	
Trichloroethene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 17:59	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0882	08/10/2022	08/10/22 17:59	
Vinyl chloride	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 17:59	
Surrogate: 1,2-Dichloroethane-d4	104 %	64 - 155			B2H0882	08/10/2022	08/10/22 17:59	
Surrogate: 4-Bromofluorobenzene	96.0 %	73 - 124			B2H0882	08/10/2022	08/10/22 17:59	
Surrogate: Dibromofluoromethane	102 %	78 - 129			B2H0882	08/10/2022	08/10/22 17:59	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0882	08/10/2022	08/10/22 17:59	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0880	08/10/2022	08/16/22 17:30	
Surrogate: 1,2-Dichlorobenzene-d4	111 %	13 - 99			B2H0880	08/10/2022	08/16/22 17:30	S12
Surrogate: 2-Fluorobiphenyl	100 %	8 - 111			B2H0880	08/10/2022	08/16/22 17:30	
Surrogate: 4-Terphenyl-d14	104 %	12 - 113			B2H0880	08/10/2022	08/16/22 17:30	
Surrogate: Nitrobenzene-d5	111 %	15 - 121			B2H0880	08/10/2022	08/16/22 17:30	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-30A

Lab ID: 2202095-05

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:25	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 18:25	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0882	08/10/2022	08/10/22 18:25	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0882	08/10/2022	08/10/22 18:25	
1,1-Dichloroethane	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:25	
1,1-Dichloroethene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2-Dichloroethane	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 18:25	
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 18:25	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 18:25	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 18:25	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0882	08/10/2022	08/10/22 18:25	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0882	08/10/2022	08/10/22 18:25	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:25	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 18:25	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:25	
Benzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
Bromobenzene	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 18:25	
Bromodichloromethane	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 18:25	
Bromoform	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 18:25	
Bromomethane	ND	0.50	0.40	1	B2H0882	08/10/2022	08/10/22 18:25	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:25	
Chlorobenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
Chloroethane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 18:25	
Chloroform	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:25	
Chloromethane	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 18:25	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 18:25	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
Dibromochloromethane	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 18:25	
Dibromomethane	ND	0.50	0.19	1	B2H0882	08/10/2022	08/10/22 18:25	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 18:25	
Ethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-30A

Lab ID: 2202095-05

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 18:25	
Isopropylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:25	
m,p-Xylene	ND	1.0	0.19	1	B2H0882	08/10/2022	08/10/22 18:25	
Methylene chloride	ND	1.0	0.71	1	B2H0882	08/10/2022	08/10/22 18:25	
n-Butylbenzene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:25	
n-Propylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:25	
Naphthalene	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 18:25	
o-Xylene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:25	
Styrene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:25	
Tetrachloroethene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:25	
Toluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 18:25	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:25	
Trichloroethene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:25	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0882	08/10/2022	08/10/22 18:25	
Vinyl chloride	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:25	
Surrogate: 1,2-Dichloroethane-d4	106 %	64 - 155			B2H0882	08/10/2022	08/10/22 18:25	
Surrogate: 4-Bromofluorobenzene	96.4 %	73 - 124			B2H0882	08/10/2022	08/10/22 18:25	
Surrogate: Dibromofluoromethane	104 %	78 - 129			B2H0882	08/10/2022	08/10/22 18:25	
Surrogate: Toluene-d8	102 %	84 - 117			B2H0882	08/10/2022	08/10/22 18:25	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2H0880	08/10/2022	08/16/22 18:03	
Surrogate: 1,2-Dichlorobenzene-d4	110 %	13 - 99			B2H0880	08/10/2022	08/16/22 18:03	S12
Surrogate: 2-Fluorobiphenyl	97.2 %	8 - 111			B2H0880	08/10/2022	08/16/22 18:03	
Surrogate: 4-Terphenyl-d14	104 %	12 - 113			B2H0880	08/10/2022	08/16/22 18:03	
Surrogate: Nitrobenzene-d5	108 %	15 - 121			B2H0880	08/10/2022	08/16/22 18:03	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-30B

Lab ID: 2202095-06

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:51	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 18:51	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2H0882	08/10/2022	08/10/22 18:51	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2H0882	08/10/2022	08/10/22 18:51	
1,1-Dichloroethane	0.13	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:51	J
1,1-Dichloroethene	28	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
1,1-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2-Dibromoethane	ND	0.50	0.24	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 18:51	
1,2-Dichloroethane	0.21	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 18:51	J
1,2-Dichloropropane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 18:51	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 18:51	
1,3-Dichloropropane	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 18:51	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2H0882	08/10/2022	08/10/22 18:51	
2,2-Dichloropropane	ND	0.50	0.38	1	B2H0882	08/10/2022	08/10/22 18:51	
2-Chlorotoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:51	
4-Chlorotoluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 18:51	
4-Isopropyltoluene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:51	
Benzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
Bromobenzene	ND	0.50	0.21	1	B2H0882	08/10/2022	08/10/22 18:51	
Bromodichloromethane	ND	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 18:51	
Bromoform	ND	0.50	0.20	1	B2H0882	08/10/2022	08/10/22 18:51	
Bromomethane	ND	0.50	0.40	1	B2H0882	08/10/2022	08/10/22 18:51	
Carbon tetrachloride	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:51	
Chlorobenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
Chloroethane	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 18:51	
Chloroform	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:51	
Chloromethane	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 18:51	
cis-1,2-Dichloroethene	5.7	0.50	0.14	1	B2H0882	08/10/2022	08/10/22 18:51	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
Dibromochloromethane	ND	0.50	0.16	1	B2H0882	08/10/2022	08/10/22 18:51	
Dibromomethane	ND	0.50	0.19	1	B2H0882	08/10/2022	08/10/22 18:51	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2H0882	08/10/2022	08/10/22 18:51	
Ethylbenzene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Client Sample ID: MW-30B

Lab ID: 2202095-06

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2H0882	08/10/2022	08/10/22 18:51	
Isopropylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:51	
m,p-Xylene	ND	1.0	0.19	1	B2H0882	08/10/2022	08/10/22 18:51	
Methylene chloride	ND	1.0	0.71	1	B2H0882	08/10/2022	08/10/22 18:51	
n-Butylbenzene	ND	0.50	0.11	1	B2H0882	08/10/2022	08/10/22 18:51	
n-Propylbenzene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:51	
Naphthalene	ND	0.50	0.41	1	B2H0882	08/10/2022	08/10/22 18:51	
o-Xylene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
sec-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:51	
Styrene	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
tert-Butylbenzene	ND	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:51	
Tetrachloroethene	ND	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:51	
Toluene	ND	0.50	0.12	1	B2H0882	08/10/2022	08/10/22 18:51	
trans-1,2-Dichloroethene	0.11	0.50	0.09	1	B2H0882	08/10/2022	08/10/22 18:51	J
Trichloroethene	94	0.50	0.10	1	B2H0882	08/10/2022	08/10/22 18:51	
Trichlorofluoromethane	ND	0.50	0.23	1	B2H0882	08/10/2022	08/10/22 18:51	
Vinyl chloride	ND	0.50	0.13	1	B2H0882	08/10/2022	08/10/22 18:51	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>107 %</i>	<i>64 - 155</i>			B2H0882	08/10/2022	<i>08/10/22 18:51</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.5 %</i>	<i>73 - 124</i>			B2H0882	08/10/2022	<i>08/10/22 18:51</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>78 - 129</i>			B2H0882	08/10/2022	<i>08/10/22 18:51</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>84 - 117</i>			B2H0882	08/10/2022	<i>08/10/22 18:51</i>	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.93	0.20	0.05	1	B2H0880	08/10/2022	08/16/22 18:35	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>107 %</i>	<i>13 - 99</i>			B2H0880	08/10/2022	<i>08/16/22 18:35</i>	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>92.3 %</i>	<i>8 - 111</i>			B2H0880	08/10/2022	<i>08/16/22 18:35</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>109 %</i>	<i>12 - 113</i>			B2H0880	08/10/2022	<i>08/16/22 18:35</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>117 %</i>	<i>15 - 121</i>			B2H0880	08/10/2022	<i>08/16/22 18:35</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0882 - MSVOA_LL_W

Blank (B2H0882-BLK1)

Prepared: 8/10/2022 Analyzed: 8/10/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0882 - MSVOA_LL_W (continued)

Blank (B2H0882-BLK1) - Continued

Prepared: 8/10/2022 Analyzed: 8/10/2022

m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	0.120000	0.50	0.11
n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

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Surrogate: 1,2-Dichloroethane-d4	26.60		25.0000	106	64 - 155
Surrogate: 4-Bromofluorobenzene	24.62		25.0000	98.5	73 - 124
Surrogate: Dibromofluoromethane	25.95		25.0000	104	78 - 129
Surrogate: Toluene-d8	24.80		25.0000	99.2	84 - 117

LCS (B2H0882-BS1)

Prepared: 8/10/2022 Analyzed: 8/10/2022

1,1,1,2-Tetrachloroethane	18.8200	0.50	0.11	20.0000	94.1	79 - 116
1,1,1-Trichloroethane	20.1000	0.50	0.21	20.0000	100	73 - 130
1,1,2,2-Tetrachloroethane	19.1800	0.50	0.36	20.0000	95.9	71 - 122
1,1,2-Trichloroethane	20.3900	0.50	0.25	20.0000	102	70 - 124
1,1-Dichloroethane	20.5000	0.50	0.09	20.0000	102	69 - 128
1,1-Dichloroethene	20.5700	0.50	0.13	20.0000	103	65 - 137
1,1-Dichloropropene	19.1400	0.50	0.13	20.0000	95.7	74 - 129
1,2,3-Trichloropropane	19.5600	0.50	0.39	20.0000	97.8	74 - 123
1,2,3-Trichlorobenzene	20.3300	0.50	0.18	20.0000	102	59 - 130
1,2,4-Trichlorobenzene	19.9000	0.50	0.16	20.0000	99.5	65 - 125
1,2,4-Trimethylbenzene	19.4800	0.50	0.14	20.0000	97.4	88 - 124
1,2-Dibromo-3-chloropropane	19.6600	0.50	0.41	20.0000	98.3	61 - 127
1,2-Dibromoethane	20.1200	0.50	0.24	20.0000	101	72 - 125
1,2-Dichlorobenzene	19.3900	0.50	0.20	20.0000	97.0	84 - 113
1,2-Dichloroethane	19.9500	0.50	0.20	20.0000	99.8	68 - 130
1,2-Dichloropropane	19.6600	0.50	0.15	20.0000	98.3	77 - 121
1,3,5-Trimethylbenzene	19.4800	0.50	0.13	20.0000	97.4	83 - 124
1,3-Dichlorobenzene	19.6200	0.50	0.16	20.0000	98.1	83 - 112
1,3-Dichloropropane	19.8000	0.50	0.21	20.0000	99.0	77 - 119
1,4-Dichlorobenzene	18.8800	0.50	0.17	20.0000	94.4	79 - 115
2,2-Dichloropropane	20.0600	0.50	0.38	20.0000	100	67 - 149
2-Chlorotoluene	19.2700	0.50	0.11	20.0000	96.4	81 - 119
4-Chlorotoluene	19.3400	0.50	0.12	20.0000	96.7	86 - 117
4-Isopropyltoluene	19.5700	0.50	0.11	20.0000	97.8	82 - 131



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0882 - MSVOA_LL_W (continued)

LCS (B2H0882-BS1) - Continued

Prepared: 8/10/2022 Analyzed: 8/10/2022

Benzene	19.8700	0.50	0.13	20.0000		99.4	75 - 124			
Bromobenzene	18.8300	0.50	0.21	20.0000		94.2	82 - 108			
Bromodichloromethane	20.1100	0.50	0.14	20.0000		101	80 - 120			
Bromoform	19.2500	0.50	0.20	20.0000		96.2	70 - 123			
Bromomethane	21.7100	0.50	0.40	20.0000		109	44 - 151			
Carbon tetrachloride	19.4500	0.50	0.09	20.0000		97.2	62 - 140			
Chlorobenzene	19.2500	0.50	0.13	20.0000		96.2	80 - 112			
Chloroethane	23.2200	0.50	0.15	20.0000		116	42 - 167			
Chloroform	21.0300	0.50	0.11	20.0000		105	77 - 122			
Chloromethane	21.1000	0.50	0.12	20.0000		106	33 - 153			
cis-1,2-Dichloroethene	19.9900	0.50	0.14	20.0000		100	75 - 121			
cis-1,3-Dichloropropene	19.5400	0.50	0.13	20.0000		97.7	73 - 127			
Dibromochloromethane	17.9900	0.50	0.16	20.0000		90.0	77 - 122			
Dibromomethane	20.2000	0.50	0.19	20.0000		101	75 - 121			
Dichlorodifluoromethane	21.1300	0.50	0.18	20.0000		106	0 - 171			
Ethylbenzene	19.8400	0.50	0.13	20.0000		99.2	82 - 119			
Hexachlorobutadiene	19.4300	0.50	0.15	20.0000		97.2	71 - 131			
Isopropylbenzene	19.3500	0.50	0.10	20.0000		96.8	75 - 126			
m,p-Xylene	39.3400	1.0	0.19	40.0000		98.4	86 - 119			
Methylene chloride	22.7500	1.0	0.71	20.0000		114	76 - 125			
n-Butylbenzene	20.1600	0.50	0.11	20.0000		101	81 - 125			
n-Propylbenzene	19.6100	0.50	0.10	20.0000		98.0	78 - 130			
Naphthalene	21.3100	0.50	0.41	20.0000		107	47 - 128			
o-Xylene	18.5500	0.50	0.13	20.0000		92.8	85 - 119			
sec-Butylbenzene	19.4000	0.50	0.09	20.0000		97.0	78 - 130			
Styrene	20.2100	0.50	0.13	20.0000		101	62 - 148			
tert-Butylbenzene	19.5000	0.50	0.09	20.0000		97.5	77 - 125			
Tetrachloroethene	19.5600	0.50	0.10	20.0000		97.8	73 - 120			
Toluene	19.5200	0.50	0.12	20.0000		97.6	79 - 119			
trans-1,2-Dichloroethene	20.0600	0.50	0.09	20.0000		100	70 - 129			
Trichloroethene	19.3700	0.50	0.10	20.0000		96.8	73 - 117			
Trichlorofluoromethane	19.9800	0.50	0.23	20.0000		99.9	59 - 135			
Vinyl chloride	21.2800	0.50	0.13	20.0000		106	58 - 132			

Surrogate: 1,2-Dichloroethane-d4

26.05

25.0000

104

64 - 155

Surrogate: 4-Bromofluorobenzene

25.00

25.0000

100

73 - 124

Surrogate: Dibromofluoromethane

25.79

25.0000

103

78 - 129

Surrogate: Toluene-d8

24.99

25.0000

100

84 - 117

LCS Dup (B2H0882-BSD1)

Prepared: 8/10/2022 Analyzed: 8/10/2022

1,1,1,2-Tetrachloroethane	17.5500	0.50	0.11	20.0000		87.8	79 - 116	6.98	20	
1,1,1-Trichloroethane	18.5300	0.50	0.21	20.0000		92.6	73 - 130	8.13	20	
1,1,2,2-Tetrachloroethane	16.8100	0.50	0.36	20.0000		84.0	71 - 122	13.2	20	
1,1,2-Trichloroethane	18.2200	0.50	0.25	20.0000		91.1	70 - 124	11.2	20	
1,1-Dichloroethane	19.1900	0.50	0.09	20.0000		96.0	69 - 128	6.60	20	
1,1-Dichloroethene	19.1700	0.50	0.13	20.0000		95.8	65 - 137	7.05	20	



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Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0882 - MSVOA_LL_W (continued)

LCS Dup (B2H0882-BSD1) - Continued

Prepared: 8/10/2022 Analyzed: 8/10/2022

1,1-Dichloropropene	18.8800	0.50	0.13	20.0000	94.4	74 - 129	1.37	20	
1,2,3-Trichloropropane	16.7900	0.50	0.39	20.0000	84.0	74 - 123	15.2	20	
1,2,3-Trichlorobenzene	18.1100	0.50	0.18	20.0000	90.6	59 - 130	11.6	20	
1,2,4-Trichlorobenzene	18.1200	0.50	0.16	20.0000	90.6	65 - 125	9.36	20	
1,2,4-Trimethylbenzene	18.8700	0.50	0.14	20.0000	94.4	88 - 124	3.18	20	
1,2-Dibromo-3-chloropropane	15.9300	0.50	0.41	20.0000	79.6	61 - 127	21.0	20	R
1,2-Dibromoethane	17.5400	0.50	0.24	20.0000	87.7	72 - 125	13.7	20	
1,2-Dichlorobenzene	18.1000	0.50	0.20	20.0000	90.5	84 - 113	6.88	20	
1,2-Dichloroethane	18.4100	0.50	0.20	20.0000	92.0	68 - 130	8.03	20	
1,2-Dichloropropane	18.7100	0.50	0.15	20.0000	93.6	77 - 121	4.95	20	
1,3,5-Trimethylbenzene	19.0700	0.50	0.13	20.0000	95.4	83 - 124	2.13	20	
1,3-Dichlorobenzene	18.6900	0.50	0.16	20.0000	93.4	83 - 112	4.86	20	
1,3-Dichloropropane	17.6300	0.50	0.21	20.0000	88.2	77 - 119	11.6	20	
1,4-Dichlorobenzene	18.2200	0.50	0.17	20.0000	91.1	79 - 115	3.56	20	
2,2-Dichloropropane	19.4500	0.50	0.38	20.0000	97.2	67 - 149	3.09	20	
2-Chlorotoluene	18.6500	0.50	0.11	20.0000	93.2	81 - 119	3.27	20	
4-Chlorotoluene	18.5300	0.50	0.12	20.0000	92.6	86 - 117	4.28	20	
4-Isopropyltoluene	19.2100	0.50	0.11	20.0000	96.0	82 - 131	1.86	20	
Benzene	19.0200	0.50	0.13	20.0000	95.1	75 - 124	4.37	20	
Bromobenzene	17.7000	0.50	0.21	20.0000	88.5	82 - 108	6.19	20	
Bromodichloromethane	19.1400	0.50	0.14	20.0000	95.7	80 - 120	4.94	20	
Bromoform	16.7300	0.50	0.20	20.0000	83.6	70 - 123	14.0	20	
Bromomethane	22.1700	0.50	0.40	20.0000	111	44 - 151	2.10	20	
Carbon tetrachloride	18.1500	0.50	0.09	20.0000	90.8	62 - 140	6.91	20	
Chlorobenzene	18.3000	0.50	0.13	20.0000	91.5	80 - 112	5.06	20	
Chloroethane	22.0500	0.50	0.15	20.0000	110	42 - 167	5.17	20	
Chloroform	19.9100	0.50	0.11	20.0000	99.6	77 - 122	5.47	20	
Chloromethane	20.1100	0.50	0.12	20.0000	101	33 - 153	4.80	20	
cis-1,2-Dichloroethene	18.5500	0.50	0.14	20.0000	92.8	75 - 121	7.47	20	
cis-1,3-Dichloropropene	18.7800	0.50	0.13	20.0000	93.9	73 - 127	3.97	20	
Dibromochloromethane	16.2700	0.50	0.16	20.0000	81.4	77 - 122	10.0	20	
Dibromomethane	18.2900	0.50	0.19	20.0000	91.4	75 - 121	9.92	20	
Dichlorodifluoromethane	19.3200	0.50	0.18	20.0000	96.6	0 - 171	8.95	20	
Ethylbenzene	18.8700	0.50	0.13	20.0000	94.4	82 - 119	5.01	20	
Hexachlorobutadiene	18.0500	0.50	0.15	20.0000	90.2	71 - 131	7.36	20	
Isopropylbenzene	18.5700	0.50	0.10	20.0000	92.8	75 - 126	4.11	20	
m,p-Xylene	37.9700	1.0	0.19	40.0000	94.9	86 - 119	3.54	20	
Methylene chloride	19.6500	1.0	0.71	20.0000	98.2	76 - 125	14.6	20	
n-Butylbenzene	19.5700	0.50	0.11	20.0000	97.8	81 - 125	2.97	20	
n-Propylbenzene	18.9600	0.50	0.10	20.0000	94.8	78 - 130	3.37	20	
Naphthalene	17.2800	0.50	0.41	20.0000	86.4	47 - 128	20.9	20	R
o-Xylene	18.7100	0.50	0.13	20.0000	93.6	85 - 119	0.859	20	
sec-Butylbenzene	18.7700	0.50	0.09	20.0000	93.8	78 - 130	3.30	20	
Styrene	18.9800	0.50	0.13	20.0000	94.9	62 - 148	6.28	20	
tert-Butylbenzene	18.4600	0.50	0.09	20.0000	92.3	77 - 125	5.48	20	



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0882 - MSVOA_LL_W (continued)

LCS Dup (B2H0882-BSD1) - Continued

Prepared: 8/10/2022 Analyzed: 8/10/2022

Tetrachloroethene	18.5100	0.50	0.10	20.0000		92.6	73 - 120	5.52	20	
Toluene	18.7200	0.50	0.12	20.0000		93.6	79 - 119	4.18	20	
trans-1,2-Dichloroethene	19.0900	0.50	0.09	20.0000		95.4	70 - 129	4.96	20	
Trichloroethene	18.2800	0.50	0.10	20.0000		91.4	73 - 117	5.79	20	
Trichlorofluoromethane	18.7400	0.50	0.23	20.0000		93.7	59 - 135	6.40	20	
Vinyl chloride	20.2700	0.50	0.13	20.0000		101	58 - 132	4.86	20	
Surrogate: 1,2-Dichloroethane-d4	25.32			25.0000		101	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.71			25.0000		98.8	73 - 124			
Surrogate: Dibromofluoromethane	25.30			25.0000		101	78 - 129			
Surrogate: Toluene-d8	25.40			25.0000		102	84 - 117			



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W

Blank (B2H0896-BLK1)

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	0.130000	0.50	0.11

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

Blank (B2H0896-BLK1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	26.76		25.0000	107	64 - 155
Surrogate: 4-Bromofluorobenzene	24.89		25.0000	99.6	73 - 124
Surrogate: Dibromofluoromethane	25.54		25.0000	102	78 - 129
Surrogate: Toluene-d8	25.89		25.0000	104	84 - 117

LCS (B2H0896-BS1)

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,1,1,2-Tetrachloroethane	21.0100	0.50	0.11	20.0000	105	79 - 116
1,1,1-Trichloroethane	22.3200	0.50	0.21	20.0000	112	73 - 130
1,1,2,2-Tetrachloroethane	21.0200	0.50	0.36	20.0000	105	71 - 122
1,1,2-Trichloroethane	21.8100	0.50	0.25	20.0000	109	70 - 124
1,1-Dichloroethane	22.3500	0.50	0.09	20.0000	112	69 - 128
1,1-Dichloroethene	23.1900	0.50	0.13	20.0000	116	65 - 137
1,1-Dichloropropene	22.6100	0.50	0.13	20.0000	113	74 - 129
1,2,3-Trichloropropane	20.7200	0.50	0.39	20.0000	104	74 - 123
1,2,3-Trichlorobenzene	22.9800	0.50	0.18	20.0000	115	59 - 130
1,2,4-Trichlorobenzene	21.6600	0.50	0.16	20.0000	108	65 - 125
1,2,4-Trimethylbenzene	21.5300	0.50	0.14	20.0000	108	88 - 124
1,2-Dibromo-3-chloropropane	21.2800	0.50	0.41	20.0000	106	61 - 127
1,2-Dibromoethane	21.5200	0.50	0.24	20.0000	108	72 - 125
1,2-Dichlorobenzene	20.8300	0.50	0.20	20.0000	104	84 - 113
1,2-Dichloroethane	21.5900	0.50	0.20	20.0000	108	68 - 130
1,2-Dichloropropane	21.9500	0.50	0.15	20.0000	110	77 - 121
1,3,5-Trimethylbenzene	21.8200	0.50	0.13	20.0000	109	83 - 124
1,3-Dichlorobenzene	21.2800	0.50	0.16	20.0000	106	83 - 112
1,3-Dichloropropane	21.3600	0.50	0.21	20.0000	107	77 - 119
1,4-Dichlorobenzene	21.0500	0.50	0.17	20.0000	105	79 - 115
2,2-Dichloropropane	23.0100	0.50	0.38	20.0000	115	67 - 149
2-Chlorotoluene	21.5600	0.50	0.11	20.0000	108	81 - 119
4-Chlorotoluene	21.2700	0.50	0.12	20.0000	106	86 - 117
4-Isopropyltoluene	22.2300	0.50	0.11	20.0000	111	82 - 131
Benzene	22.5400	0.50	0.13	20.0000	113	75 - 124
Bromobenzene	20.3000	0.50	0.21	20.0000	102	82 - 108
Bromodichloromethane	22.5100	0.50	0.14	20.0000	113	80 - 120



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San Diego , CA 92108

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Reported : 08/17/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

LCS (B2H0896-BS1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

Bromoform	20.5700	0.50	0.20	20.0000		103	70 - 123			
Bromomethane	26.3500	0.50	0.40	20.0000		132	44 - 151			
Carbon tetrachloride	22.7400	0.50	0.09	20.0000		114	62 - 140			
Chlorobenzene	21.2100	0.50	0.13	20.0000		106	80 - 112			
Chloroethane	25.0800	0.50	0.15	20.0000		125	42 - 167			
Chloroform	22.8900	0.50	0.11	20.0000		114	77 - 122			
Chloromethane	22.8100	0.50	0.12	20.0000		114	33 - 153			
cis-1,2-Dichloroethene	21.9700	0.50	0.14	20.0000		110	75 - 121			
cis-1,3-Dichloropropene	22.3500	0.50	0.13	20.0000		112	73 - 127			
Dibromochloromethane	19.5400	0.50	0.16	20.0000		97.7	77 - 122			
Dibromomethane	21.5400	0.50	0.19	20.0000		108	75 - 121			
Dichlorodifluoromethane	24.3200	0.50	0.18	20.0000		122	0 - 171			
Ethylbenzene	22.0800	0.50	0.13	20.0000		110	82 - 119			
Hexachlorobutadiene	21.3800	0.50	0.15	20.0000		107	71 - 131			
Isopropylbenzene	21.7300	0.50	0.10	20.0000		109	75 - 126			
m,p-Xylene	43.8600	1.0	0.19	40.0000		110	86 - 119			
Methylene chloride	22.1000	1.0	0.71	20.0000		110	76 - 125			
n-Butylbenzene	22.6900	0.50	0.11	20.0000		113	81 - 125			
n-Propylbenzene	22.0400	0.50	0.10	20.0000		110	78 - 130			
Naphthalene	23.0600	0.50	0.41	20.0000		115	47 - 128			
o-Xylene	20.9500	0.50	0.13	20.0000		105	85 - 119			
sec-Butylbenzene	22.2500	0.50	0.09	20.0000		111	78 - 130			
Styrene	21.9700	0.50	0.13	20.0000		110	62 - 148			
tert-Butylbenzene	21.6900	0.50	0.09	20.0000		108	77 - 125			
Tetrachloroethene	21.6100	0.50	0.10	20.0000		108	73 - 120			
Toluene	21.6700	0.50	0.12	20.0000		108	79 - 119			
trans-1,2-Dichloroethene	22.0000	0.50	0.09	20.0000		110	70 - 129			
Trichloroethene	21.9800	0.50	0.10	20.0000		110	73 - 117			
Trichlorofluoromethane	23.1900	0.50	0.23	20.0000		116	59 - 135			
Vinyl chloride	24.4400	0.50	0.13	20.0000		122	58 - 132			
Surrogate: 1,2-Dichloroethane-d4	25.75			25.0000		103	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.95			25.0000		99.8	73 - 124			
Surrogate: Dibromofluoromethane	25.46			25.0000		102	78 - 129			
Surrogate: Toluene-d8	25.48			25.0000		102	84 - 117			

LCS Dup (B2H0896-BSD1)

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,1,1,2-Tetrachloroethane	20.5100	0.50	0.11	20.0000		103	79 - 116	2.41	20	
1,1,1-Trichloroethane	21.6600	0.50	0.21	20.0000		108	73 - 130	3.00	20	
1,1,2,2-Tetrachloroethane	21.1500	0.50	0.36	20.0000		106	71 - 122	0.617	20	
1,1,2-Trichloroethane	22.0400	0.50	0.25	20.0000		110	70 - 124	1.05	20	
1,1-Dichloroethane	21.7400	0.50	0.09	20.0000		109	69 - 128	2.77	20	
1,1-Dichloroethene	22.5300	0.50	0.13	20.0000		113	65 - 137	2.89	20	
1,1-Dichloropropene	21.8000	0.50	0.13	20.0000		109	74 - 129	3.65	20	
1,2,3-Trichloropropane	20.4900	0.50	0.39	20.0000		102	74 - 123	1.12	20	
1,2,3-Trichlorobenzene	22.1600	0.50	0.18	20.0000		111	59 - 130	3.63	20	



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

LCS Dup (B2H0896-BSD1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,2,4-Trichlorobenzene	21.0600	0.50	0.16	20.0000		105	65 - 125	2.81	20	
1,2,4-Trimethylbenzene	20.4100	0.50	0.14	20.0000		102	88 - 124	5.34	20	
1,2-Dibromo-3-chloropropane	21.0100	0.50	0.41	20.0000		105	61 - 127	1.28	20	
1,2-Dibromoethane	22.0600	0.50	0.24	20.0000		110	72 - 125	2.48	20	
1,2-Dichlorobenzene	20.2000	0.50	0.20	20.0000		101	84 - 113	3.07	20	
1,2-Dichloroethane	21.6700	0.50	0.20	20.0000		108	68 - 130	0.370	20	
1,2-Dichloropropane	21.9100	0.50	0.15	20.0000		110	77 - 121	0.182	20	
1,3,5-Trimethylbenzene	20.4800	0.50	0.13	20.0000		102	83 - 124	6.34	20	
1,3-Dichlorobenzene	20.4900	0.50	0.16	20.0000		102	83 - 112	3.78	20	
1,3-Dichloropropane	21.1900	0.50	0.21	20.0000		106	77 - 119	0.799	20	
1,4-Dichlorobenzene	20.0300	0.50	0.17	20.0000		100	79 - 115	4.97	20	
2,2-Dichloropropane	22.1100	0.50	0.38	20.0000		111	67 - 149	3.99	20	
2-Chlorotoluene	20.3800	0.50	0.11	20.0000		102	81 - 119	5.63	20	
4-Chlorotoluene	19.8000	0.50	0.12	20.0000		99.0	86 - 117	7.16	20	
4-Isopropyltoluene	20.8500	0.50	0.11	20.0000		104	82 - 131	6.41	20	
Benzene	21.7700	0.50	0.13	20.0000		109	75 - 124	3.48	20	
Bromobenzene	19.9500	0.50	0.21	20.0000		99.8	82 - 108	1.74	20	
Bromodichloromethane	22.3200	0.50	0.14	20.0000		112	80 - 120	0.848	20	
Bromoform	20.7300	0.50	0.20	20.0000		104	70 - 123	0.775	20	
Bromomethane	25.4600	0.50	0.40	20.0000		127	44 - 151	3.44	20	
Carbon tetrachloride	22.1100	0.50	0.09	20.0000		111	62 - 140	2.81	20	
Chlorobenzene	20.6500	0.50	0.13	20.0000		103	80 - 112	2.68	20	
Chloroethane	24.8000	0.50	0.15	20.0000		124	42 - 167	1.12	20	
Chloroform	22.1300	0.50	0.11	20.0000		111	77 - 122	3.38	20	
Chloromethane	22.8700	0.50	0.12	20.0000		114	33 - 153	0.263	20	
cis-1,2-Dichloroethene	21.2900	0.50	0.14	20.0000		106	75 - 121	3.14	20	
cis-1,3-Dichloropropene	22.3000	0.50	0.13	20.0000		112	73 - 127	0.224	20	
Dibromochloromethane	19.4200	0.50	0.16	20.0000		97.1	77 - 122	0.616	20	
Dibromomethane	21.7000	0.50	0.19	20.0000		108	75 - 121	0.740	20	
Dichlorodifluoromethane	23.2200	0.50	0.18	20.0000		116	0 - 171	4.63	20	
Ethylbenzene	21.0700	0.50	0.13	20.0000		105	82 - 119	4.68	20	
Hexachlorobutadiene	20.2800	0.50	0.15	20.0000		101	71 - 131	5.28	20	
Isopropylbenzene	20.4600	0.50	0.10	20.0000		102	75 - 126	6.02	20	
m,p-Xylene	42.3300	1.0	0.19	40.0000		106	86 - 119	3.55	20	
Methylene chloride	22.2500	1.0	0.71	20.0000		111	76 - 125	0.676	20	
n-Butylbenzene	21.3100	0.50	0.11	20.0000		107	81 - 125	6.27	20	
n-Propylbenzene	20.8900	0.50	0.10	20.0000		104	78 - 130	5.36	20	
Naphthalene	23.2100	0.50	0.41	20.0000		116	47 - 128	0.648	20	
o-Xylene	21.0900	0.50	0.13	20.0000		105	85 - 119	0.666	20	
sec-Butylbenzene	20.7600	0.50	0.09	20.0000		104	78 - 130	6.93	20	
Styrene	21.4200	0.50	0.13	20.0000		107	62 - 148	2.54	20	
tert-Butylbenzene	20.4400	0.50	0.09	20.0000		102	77 - 125	5.93	20	
Tetrachloroethene	21.0600	0.50	0.10	20.0000		105	73 - 120	2.58	20	
Toluene	21.1700	0.50	0.12	20.0000		106	79 - 119	2.33	20	
trans-1,2-Dichloroethene	21.2000	0.50	0.09	20.0000		106	70 - 129	3.70	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

LCS Dup (B2H0896-BSD1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

Trichloroethene	21.3100	0.50	0.10	20.0000		107	73 - 117	3.10	20
Trichlorofluoromethane	22.2700	0.50	0.23	20.0000		111	59 - 135	4.05	20
Vinyl chloride	23.3400	0.50	0.13	20.0000		117	58 - 132	4.60	20
Surrogate: 1,2-Dichloroethane-d4	25.54			25.0000		102	64 - 155		
Surrogate: 4-Bromofluorobenzene	25.53			25.0000		102	73 - 124		
Surrogate: Dibromofluoromethane	25.59			25.0000		102	78 - 129		
Surrogate: Toluene-d8	25.47			25.0000		102	84 - 117		



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/17/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0880 - MSSEMI_W

Blank (B2H0880-BLK1)

Prepared: 8/10/2022 Analyzed: 8/16/2022

1,4-Dioxane ND 0.20 0.05

Surrogate: 1,2-Dichlorobenzene-d4	1.088			1.00000	109	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.8921			1.00000	89.2	8 - 111			
Surrogate: 4-Terphenyl-d14	1.084			1.00000	108	12 - 113			
Surrogate: Nitrobenzene-d5	1.206			1.00000	121	15 - 121			

LCS (B2H0880-BS1)

Prepared: 8/10/2022 Analyzed: 8/16/2022

1,4-Dioxane 1.04104 0.20 0.05 1.00000 104 75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	1.057			1.00000	106	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.8827			1.00000	88.3	8 - 111			
Surrogate: 4-Terphenyl-d14	1.156			1.00000	116	12 - 113			S12
Surrogate: Nitrobenzene-d5	1.194			1.00000	119	15 - 121			

LCS Dup (B2H0880-BSD1)

Prepared: 8/10/2022 Analyzed: 8/16/2022

1,4-Dioxane 0.922870 0.20 0.05 1.00000 92.3 75 - 155 12.0 20

Surrogate: 1,2-Dichlorobenzene-d4	1.114			1.00000	111	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.8835			1.00000	88.4	8 - 111			
Surrogate: 4-Terphenyl-d14	1.183			1.00000	118	12 - 113			S12
Surrogate: Nitrobenzene-d5	1.219			1.00000	122	15 - 121			S12

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858.455.6500

Fax 858.455.6533

Sampled By:

A. DANNIELLY, A. KELSO		SAMPLE COLLECTION	
LAB ID	SAMPLE ID	Date	Time
9	MW-40 ↓	8/5/22	0920 ↓
5	MW-30A ↓		1015 ↓
6	MW-30B ↓		1124 ↓

PROJECT: Raytheon Main		TASK NO.: 532.30		Project Manager Steve Netto		QA Manager Andrew Donnelly		Phone 858.455.6500		Fax 858.455.6533	
Sampled By:		A.DONNELLY, A.KELSO									
LAB ID		SAMPLE ID		Date		Time		SAMPLE COLLECTION			
4-1		MW-40		9/15/22		0920		Groundwater			
5-1		MW-30A		1015		1015		Lab prepared water			
6-1		MW-30B		1124		1124		Groundwater			

Total number of containers per analysis:

Relinquished By: / Company:

Date / Time	Received By: / Company

Date / Time

	No. of containers correct
	Received in good condition
	Custody seals secure
	Conforms to COC documents

Send Results to:
Steve Netto

	Custody seals secure
	Conforms to COC document

3131 Camino del Rio N
Suite 355
San Diego, CA 92108
Ph: 858.455.5400
snetto@hargis.com

Instructions

Fill out form completely and sign only after verified for completeness
 complete in ballpoint pen. Draw one line through error, initial and date correction
 indicate the number of sample containers in analytical request space: indicate choice with $\checkmark$ or x
 indicate applicable preservatives, special instructions, and deviations from typical environmental samples.
 consult project QA documents for specific instructions.

Temperature on receipt

Page 28 of 28

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-105274-1
Client Project/Site: Raytheon / 532.30

For:
Hargis + Associates, Inc.
3131 Camino del Rio N
Suite 355
San Diego, California 92108

Attn: Steve Netto

Virendra R Patel

Authorized for release by:
8/16/2022 2:06:25 PM

Virendra Patel, Project Manager I
(714)895-5494

Virendra.Patel@et.eurofinsus.com

LINKS

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results through



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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Job ID: 570-105274-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative 570-105274-1

Comments

No additional comments.

Receipt

The samples were received on 8/3/2022 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.1° C.

GC/MS VOA

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-255581. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270C SIM ID: The method blank for preparation batch 570-254991 and analytical batch 570-255437 contained 1,4-Dioxane above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 8270C SIM ID: The following sample was re-prepared outside of preparation holding time due to contamination: MW-33 (570-105274-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Client Sample ID: TB-080222B

Lab Sample ID: 570-105274-1

No Detections.

Client Sample ID: MW-33

Lab Sample ID: 570-105274-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,1-Dichloroethene	5.1		0.50	0.21	ug/L	1			8260B	Total/NA
Trichloroethene	0.76		0.50	0.15	ug/L	1			8260B	Total/NA

Client Sample ID: EW-01

Lab Sample ID: 570-105274-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,1,2-Trichloroethane	0.24	J	0.50	0.18	ug/L	1			8260B	Total/NA
1,1-Dichloroethane	0.72		0.50	0.21	ug/L	1			8260B	Total/NA
1,1-Dichloroethene	28		0.50	0.21	ug/L	1			8260B	Total/NA
Trichloroethene	0.18	J	0.50	0.15	ug/L	1			8260B	Total/NA
1,4-Dioxane	31	B	0.50	0.34	ug/L	1			8270C SIM ID	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-080222B
Date Collected: 08/02/22 08:30
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/L			08/09/22 22:58	1
1,1,1-Trichloroethane	ND		0.50	0.20	ug/L			08/09/22 22:58	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.14	ug/L			08/09/22 22:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			08/09/22 22:58	1
1,1,2-Trichloroethane	ND		0.50	0.18	ug/L			08/09/22 22:58	1
1,1-Dichloroethane	ND		0.50	0.21	ug/L			08/09/22 22:58	1
1,1-Dichloroethene	ND		0.50	0.21	ug/L			08/09/22 22:58	1
1,1-Dichloropropene	ND		0.50	0.16	ug/L			08/09/22 22:58	1
1,2,3-Trichlorobenzene	ND		0.50	0.26	ug/L			08/09/22 22:58	1
1,2,3-Trichloropropane	ND		0.50	0.31	ug/L			08/09/22 22:58	1
1,2,4-Trichlorobenzene	ND		0.50	0.26	ug/L			08/09/22 22:58	1
1,2,4-Trimethylbenzene	ND		0.50	0.22	ug/L			08/09/22 22:58	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.84	ug/L			08/09/22 22:58	1
1,2-Dibromoethane	ND		0.50	0.27	ug/L			08/09/22 22:58	1
1,2-Dichlorobenzene	ND		0.50	0.14	ug/L			08/09/22 22:58	1
1,2-Dichloroethane	ND		0.50	0.14	ug/L			08/09/22 22:58	1
1,2-Dichloropropane	ND		0.50	0.14	ug/L			08/09/22 22:58	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			08/09/22 22:58	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			08/09/22 22:58	1
1,3-Dichloropropane	ND		0.50	0.19	ug/L			08/09/22 22:58	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			08/09/22 22:58	1
2,2-Dichloropropane	ND		0.50	0.26	ug/L			08/09/22 22:58	1
2-Butanone	ND		5.0	2.9	ug/L			08/09/22 22:58	1
2-Chlorotoluene	ND		0.50	0.23	ug/L			08/09/22 22:58	1
2-Hexanone	ND		6.0	2.0	ug/L			08/09/22 22:58	1
4-Chlorotoluene	ND		0.50	0.24	ug/L			08/09/22 22:58	1
4-Methyl-2-pentanone	ND		5.0	1.6	ug/L			08/09/22 22:58	1
Acetone	ND		8.0	3.6	ug/L			08/09/22 22:58	1
Benzene	ND		0.50	0.14	ug/L			08/09/22 22:58	1
Bromobenzene	ND		0.50	0.14	ug/L			08/09/22 22:58	1
Bromochloromethane	ND		1.0	0.27	ug/L			08/09/22 22:58	1
Bromodichloromethane	ND		0.50	0.15	ug/L			08/09/22 22:58	1
Bromoform	ND		0.50	0.28	ug/L			08/09/22 22:58	1
Bromomethane	ND		2.0	1.9	ug/L			08/09/22 22:58	1
cis-1,2-Dichloroethene	ND		0.50	0.16	ug/L			08/09/22 22:58	1
cis-1,3-Dichloropropene	ND		0.50	0.15	ug/L			08/09/22 22:58	1
Carbon disulfide	ND		1.0	0.32	ug/L			08/09/22 22:58	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			08/09/22 22:58	1
Chlorobenzene	ND		0.50	0.12	ug/L			08/09/22 22:58	1
Chloroethane	ND		0.50	0.38	ug/L			08/09/22 22:58	1
Chloroform	ND		0.50	0.17	ug/L			08/09/22 22:58	1
Chloromethane	ND		1.0	0.65	ug/L			08/09/22 22:58	1
Dibromochloromethane	ND		0.50	0.21	ug/L			08/09/22 22:58	1
Dibromomethane	ND		0.50	0.16	ug/L			08/09/22 22:58	1
Dichlorodifluoromethane	ND		1.0	0.51	ug/L			08/09/22 22:58	1
Ethylbenzene	ND		0.50	0.16	ug/L			08/09/22 22:58	1
Isopropylbenzene	ND		0.50	0.21	ug/L			08/09/22 22:58	1
Methylene Chloride	ND		1.0	0.40	ug/L			08/09/22 22:58	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.14	ug/L			08/09/22 22:58	1

Eurofins Calscience

Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-080222B
Date Collected: 08/02/22 08:30
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.55	ug/L			08/09/22 22:58	1
n-Butylbenzene	ND		0.50	0.24	ug/L			08/09/22 22:58	1
N-Propylbenzene	ND		0.50	0.18	ug/L			08/09/22 22:58	1
o-Xylene	ND		0.50	0.18	ug/L			08/09/22 22:58	1
m,p-Xylene	ND		1.0	0.39	ug/L			08/09/22 22:58	1
p-Isopropyltoluene	ND		0.50	0.20	ug/L			08/09/22 22:58	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			08/09/22 22:58	1
Styrene	ND		0.50	0.27	ug/L			08/09/22 22:58	1
trans-1,2-Dichloroethene	ND		0.50	0.22	ug/L			08/09/22 22:58	1
trans-1,3-Dichloropropene	ND		0.50	0.21	ug/L			08/09/22 22:58	1
tert-Butylbenzene	ND		0.50	0.21	ug/L			08/09/22 22:58	1
Tetrachloroethene	ND		0.50	0.16	ug/L			08/09/22 22:58	1
Toluene	ND		0.50	0.14	ug/L			08/09/22 22:58	1
Trichloroethene	ND		0.50	0.15	ug/L			08/09/22 22:58	1
Trichlorofluoromethane	ND		0.50	0.26	ug/L			08/09/22 22:58	1
Vinyl acetate	ND		5.0	3.2	ug/L			08/09/22 22:58	1
Vinyl chloride	ND		0.50	0.23	ug/L			08/09/22 22:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		64 - 132		08/09/22 22:58	1
4-Bromofluorobenzene (Surr)	84		76 - 120		08/09/22 22:58	1
Dibromofluoromethane	111		80 - 120		08/09/22 22:58	1
Toluene-d8 (Surr)	98		80 - 120		08/09/22 22:58	1

Client Sample ID: MW-33
Date Collected: 08/02/22 14:40
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/L			08/10/22 01:50	1
1,1,1-Trichloroethane	ND		0.50	0.20	ug/L			08/10/22 01:50	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.14	ug/L			08/10/22 01:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			08/10/22 01:50	1
1,1,2-Trichloroethane	ND		0.50	0.18	ug/L			08/10/22 01:50	1
1,1-Dichloroethane	ND		0.50	0.21	ug/L			08/10/22 01:50	1
1,1-Dichloroethene	5.1		0.50	0.21	ug/L			08/10/22 01:50	1
1,1-Dichloropropene	ND		0.50	0.16	ug/L			08/10/22 01:50	1
1,2,3-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 01:50	1
1,2,3-Trichloropropane	ND		0.50	0.31	ug/L			08/10/22 01:50	1
1,2,4-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 01:50	1
1,2,4-Trimethylbenzene	ND		0.50	0.22	ug/L			08/10/22 01:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.84	ug/L			08/10/22 01:50	1
1,2-Dibromoethane	ND		0.50	0.27	ug/L			08/10/22 01:50	1
1,2-Dichlorobenzene	ND		0.50	0.14	ug/L			08/10/22 01:50	1
1,2-Dichloroethane	ND		0.50	0.14	ug/L			08/10/22 01:50	1
1,2-Dichloropropane	ND		0.50	0.14	ug/L			08/10/22 01:50	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			08/10/22 01:50	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			08/10/22 01:50	1
1,3-Dichloropropane	ND		0.50	0.19	ug/L			08/10/22 01:50	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			08/10/22 01:50	1
2,2-Dichloropropane	ND		0.50	0.26	ug/L			08/10/22 01:50	1

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Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: MW-33
Date Collected: 08/02/22 14:40
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	ND		5.0	2.9	ug/L			08/10/22 01:50	1
2-Chlorotoluene	ND		0.50	0.23	ug/L			08/10/22 01:50	1
2-Hexanone	ND		6.0	2.0	ug/L			08/10/22 01:50	1
4-Chlorotoluene	ND		0.50	0.24	ug/L			08/10/22 01:50	1
4-Methyl-2-pentanone	ND		5.0	1.6	ug/L			08/10/22 01:50	1
Acetone	ND		8.0	3.6	ug/L			08/10/22 01:50	1
Benzene	ND		0.50	0.14	ug/L			08/10/22 01:50	1
Bromobenzene	ND		0.50	0.14	ug/L			08/10/22 01:50	1
Bromochloromethane	ND		1.0	0.27	ug/L			08/10/22 01:50	1
Bromodichloromethane	ND		0.50	0.15	ug/L			08/10/22 01:50	1
Bromoform	ND		0.50	0.28	ug/L			08/10/22 01:50	1
Bromomethane	ND		2.0	1.9	ug/L			08/10/22 01:50	1
cis-1,2-Dichloroethene	ND		0.50	0.16	ug/L			08/10/22 01:50	1
cis-1,3-Dichloropropene	ND		0.50	0.15	ug/L			08/10/22 01:50	1
Carbon disulfide	ND		1.0	0.32	ug/L			08/10/22 01:50	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			08/10/22 01:50	1
Chlorobenzene	ND		0.50	0.12	ug/L			08/10/22 01:50	1
Chloroethane	ND		0.50	0.38	ug/L			08/10/22 01:50	1
Chloroform	ND		0.50	0.17	ug/L			08/10/22 01:50	1
Chloromethane	ND		1.0	0.65	ug/L			08/10/22 01:50	1
Dibromochloromethane	ND		0.50	0.21	ug/L			08/10/22 01:50	1
Dibromomethane	ND		0.50	0.16	ug/L			08/10/22 01:50	1
Dichlorodifluoromethane	ND		1.0	0.51	ug/L			08/10/22 01:50	1
Ethylbenzene	ND		0.50	0.16	ug/L			08/10/22 01:50	1
Isopropylbenzene	ND		0.50	0.21	ug/L			08/10/22 01:50	1
Methylene Chloride	ND		1.0	0.40	ug/L			08/10/22 01:50	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.14	ug/L			08/10/22 01:50	1
Naphthalene	ND		1.0	0.55	ug/L			08/10/22 01:50	1
n-Butylbenzene	ND		0.50	0.24	ug/L			08/10/22 01:50	1
N-Propylbenzene	ND		0.50	0.18	ug/L			08/10/22 01:50	1
o-Xylene	ND		0.50	0.18	ug/L			08/10/22 01:50	1
m,p-Xylene	ND		1.0	0.39	ug/L			08/10/22 01:50	1
p-Isopropyltoluene	ND		0.50	0.20	ug/L			08/10/22 01:50	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			08/10/22 01:50	1
Styrene	ND		0.50	0.27	ug/L			08/10/22 01:50	1
trans-1,2-Dichloroethene	ND		0.50	0.22	ug/L			08/10/22 01:50	1
trans-1,3-Dichloropropene	ND		0.50	0.21	ug/L			08/10/22 01:50	1
tert-Butylbenzene	ND		0.50	0.21	ug/L			08/10/22 01:50	1
Tetrachloroethene	ND		0.50	0.16	ug/L			08/10/22 01:50	1
Toluene	ND		0.50	0.14	ug/L			08/10/22 01:50	1
Trichloroethene	0.76		0.50	0.15	ug/L			08/10/22 01:50	1
Trichlorofluoromethane	ND		0.50	0.26	ug/L			08/10/22 01:50	1
Vinyl acetate	ND		5.0	3.2	ug/L			08/10/22 01:50	1
Vinyl chloride	ND		0.50	0.23	ug/L			08/10/22 01:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		64 - 132		08/10/22 01:50	1
4-Bromofluorobenzene (Surr)	82		76 - 120		08/10/22 01:50	1
Dibromofluoromethane	109		80 - 120		08/10/22 01:50	1
Toluene-d8 (Surr)	98		80 - 120		08/10/22 01:50	1

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Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: EW-01
Date Collected: 08/03/22 14:30
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/L			08/10/22 02:18	1
1,1,1-Trichloroethane	ND		0.50	0.20	ug/L			08/10/22 02:18	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.14	ug/L			08/10/22 02:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			08/10/22 02:18	1
1,1,2-Trichloroethane	0.24	J	0.50	0.18	ug/L			08/10/22 02:18	1
1,1-Dichloroethane	0.72		0.50	0.21	ug/L			08/10/22 02:18	1
1,1-Dichloroethene	28		0.50	0.21	ug/L			08/10/22 02:18	1
1,1-Dichloropropene	ND		0.50	0.16	ug/L			08/10/22 02:18	1
1,2,3-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 02:18	1
1,2,3-Trichloropropane	ND		0.50	0.31	ug/L			08/10/22 02:18	1
1,2,4-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 02:18	1
1,2,4-Trimethylbenzene	ND		0.50	0.22	ug/L			08/10/22 02:18	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.84	ug/L			08/10/22 02:18	1
1,2-Dibromoethane	ND		0.50	0.27	ug/L			08/10/22 02:18	1
1,2-Dichlorobenzene	ND		0.50	0.14	ug/L			08/10/22 02:18	1
1,2-Dichloroethane	ND		0.50	0.14	ug/L			08/10/22 02:18	1
1,2-Dichloropropane	ND		0.50	0.14	ug/L			08/10/22 02:18	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			08/10/22 02:18	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			08/10/22 02:18	1
1,3-Dichloropropane	ND		0.50	0.19	ug/L			08/10/22 02:18	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			08/10/22 02:18	1
2,2-Dichloropropane	ND		0.50	0.26	ug/L			08/10/22 02:18	1
2-Butanone	ND		5.0	2.9	ug/L			08/10/22 02:18	1
2-Chlorotoluene	ND		0.50	0.23	ug/L			08/10/22 02:18	1
2-Hexanone	ND		6.0	2.0	ug/L			08/10/22 02:18	1
4-Chlorotoluene	ND		0.50	0.24	ug/L			08/10/22 02:18	1
4-Methyl-2-pentanone	ND		5.0	1.6	ug/L			08/10/22 02:18	1
Acetone	ND		8.0	3.6	ug/L			08/10/22 02:18	1
Benzene	ND		0.50	0.14	ug/L			08/10/22 02:18	1
Bromobenzene	ND		0.50	0.14	ug/L			08/10/22 02:18	1
Bromochloromethane	ND		1.0	0.27	ug/L			08/10/22 02:18	1
Bromodichloromethane	ND		0.50	0.15	ug/L			08/10/22 02:18	1
Bromoform	ND		0.50	0.28	ug/L			08/10/22 02:18	1
Bromomethane	ND		2.0	1.9	ug/L			08/10/22 02:18	1
cis-1,2-Dichloroethene	ND		0.50	0.16	ug/L			08/10/22 02:18	1
cis-1,3-Dichloropropane	ND		0.50	0.15	ug/L			08/10/22 02:18	1
Carbon disulfide	ND		1.0	0.32	ug/L			08/10/22 02:18	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			08/10/22 02:18	1
Chlorobenzene	ND		0.50	0.12	ug/L			08/10/22 02:18	1
Chloroethane	ND		0.50	0.38	ug/L			08/10/22 02:18	1
Chloroform	ND		0.50	0.17	ug/L			08/10/22 02:18	1
Chloromethane	ND		1.0	0.65	ug/L			08/10/22 02:18	1
Dibromochloromethane	ND		0.50	0.21	ug/L			08/10/22 02:18	1
Dibromomethane	ND		0.50	0.16	ug/L			08/10/22 02:18	1
Dichlorodifluoromethane	ND		1.0	0.51	ug/L			08/10/22 02:18	1
Ethylbenzene	ND		0.50	0.16	ug/L			08/10/22 02:18	1
Isopropylbenzene	ND		0.50	0.21	ug/L			08/10/22 02:18	1
Methylene Chloride	ND		1.0	0.40	ug/L			08/10/22 02:18	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.14	ug/L			08/10/22 02:18	1

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Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EW-01
Date Collected: 08/03/22 14:30
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.55	ug/L			08/10/22 02:18	1
n-Butylbenzene	ND		0.50	0.24	ug/L			08/10/22 02:18	1
N-Propylbenzene	ND		0.50	0.18	ug/L			08/10/22 02:18	1
o-Xylene	ND		0.50	0.18	ug/L			08/10/22 02:18	1
m,p-Xylene	ND		1.0	0.39	ug/L			08/10/22 02:18	1
p-Isopropyltoluene	ND		0.50	0.20	ug/L			08/10/22 02:18	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			08/10/22 02:18	1
Styrene	ND		0.50	0.27	ug/L			08/10/22 02:18	1
trans-1,2-Dichloroethene	ND		0.50	0.22	ug/L			08/10/22 02:18	1
trans-1,3-Dichloropropene	ND		0.50	0.21	ug/L			08/10/22 02:18	1
tert-Butylbenzene	ND		0.50	0.21	ug/L			08/10/22 02:18	1
Tetrachloroethene	ND		0.50	0.16	ug/L			08/10/22 02:18	1
Toluene	ND		0.50	0.14	ug/L			08/10/22 02:18	1
Trichloroethene	0.18	J	0.50	0.15	ug/L			08/10/22 02:18	1
Trichlorofluoromethane	ND		0.50	0.26	ug/L			08/10/22 02:18	1
Vinyl acetate	ND		5.0	3.2	ug/L			08/10/22 02:18	1
Vinyl chloride	ND		0.50	0.23	ug/L			08/10/22 02:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		64 - 132		08/10/22 02:18	1
4-Bromofluorobenzene (Surr)	84		76 - 120		08/10/22 02:18	1
Dibromofluoromethane	111		80 - 120		08/10/22 02:18	1
Toluene-d8 (Surr)	98		80 - 120		08/10/22 02:18	1

Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Client Sample ID: MW-33
Date Collected: 08/02/22 14:40
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	H	0.50	0.34	ug/L		08/11/22 14:01	08/12/22 18:50	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	57		21 - 120				08/11/22 14:01	08/12/22 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	91		58 - 135				08/11/22 14:01	08/12/22 18:50	1

Client Sample ID: EW-01
Date Collected: 08/03/22 14:30
Date Received: 08/03/22 17:00

Lab Sample ID: 570-105274-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	31	B	0.50	0.34	ug/L		08/06/22 13:53	08/09/22 22:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	52		21 - 120				08/06/22 13:53	08/09/22 22:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	86		58 - 135				08/06/22 13:53	08/09/22 22:37	1

Surrogate Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	DBFM	TOL
		(64-132)	(76-120)	(80-120)	(80-120)
570-105274-1	TB-080222B	111	84	111	98
570-105274-2	MW-33	112	82	109	98
570-105274-3	EW-01	110	84	111	98
LCS 570-255581/3	Lab Control Sample	95	101	97	101
LCSD 570-255581/4	Lab Control Sample Dup	95	101	96	103
MB 570-255581/6	Method Blank	111	84	107	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NBZ
		(58-135)
570-105274-2	MW-33	91
570-105274-3	EW-01	86
570-105371-D-2-C MS	Matrix Spike	99
570-105371-D-2-D MSD	Matrix Spike Duplicate	98
LCS 570-254991/2-A	Lab Control Sample	86
LCS 570-256132/2-A	Lab Control Sample	112
LCSD 570-254991/3-A	Lab Control Sample Dup	89
LCSD 570-256132/3-A	Lab Control Sample Dup	102
MB 570-254991/1-A	Method Blank	94

Surrogate Legend

NBZ = Nitrobenzene-d5

Isotope Dilution Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (21-120)
570-105274-2	MW-33	57
570-105274-3	EW-01	52
570-105371-D-2-C MS	Matrix Spike	47
570-105371-D-2-D MSD	Matrix Spike Duplicate	50
LCS 570-254991/2-A	Lab Control Sample	44
LCS 570-256132/2-A	Lab Control Sample	69
LCSD 570-254991/3-A	Lab Control Sample Dup	41
LCSD 570-256132/3-A	Lab Control Sample Dup	59
MB 570-254991/1-A	Method Blank	49

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-255581/6

Matrix: Water

Analysis Batch: 255581

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/L			08/09/22 22:00	1
1,1,1-Trichloroethane	ND		0.50	0.20	ug/L			08/09/22 22:00	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.14	ug/L			08/09/22 22:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			08/09/22 22:00	1
1,1,2-Trichloroethane	ND		0.50	0.18	ug/L			08/09/22 22:00	1
1,1-Dichloroethane	ND		0.50	0.21	ug/L			08/09/22 22:00	1
1,1-Dichloroethene	ND		0.50	0.21	ug/L			08/09/22 22:00	1
1,1-Dichloropropene	ND		0.50	0.16	ug/L			08/09/22 22:00	1
1,2,3-Trichlorobenzene	ND		0.50	0.26	ug/L			08/09/22 22:00	1
1,2,3-Trichloropropane	ND		0.50	0.31	ug/L			08/09/22 22:00	1
1,2,4-Trichlorobenzene	ND		0.50	0.26	ug/L			08/09/22 22:00	1
1,2,4-Trimethylbenzene	ND		0.50	0.22	ug/L			08/09/22 22:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.84	ug/L			08/09/22 22:00	1
1,2-Dibromoethane	ND		0.50	0.27	ug/L			08/09/22 22:00	1
1,2-Dichlorobenzene	ND		0.50	0.14	ug/L			08/09/22 22:00	1
1,2-Dichloroethane	ND		0.50	0.14	ug/L			08/09/22 22:00	1
1,2-Dichloropropane	ND		0.50	0.14	ug/L			08/09/22 22:00	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			08/09/22 22:00	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			08/09/22 22:00	1
1,3-Dichloropropane	ND		0.50	0.19	ug/L			08/09/22 22:00	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			08/09/22 22:00	1
2,2-Dichloropropane	ND		0.50	0.26	ug/L			08/09/22 22:00	1
2-Butanone	ND		5.0	2.9	ug/L			08/09/22 22:00	1
2-Chlorotoluene	ND		0.50	0.23	ug/L			08/09/22 22:00	1
2-Hexanone	ND		6.0	2.0	ug/L			08/09/22 22:00	1
4-Chlorotoluene	ND		0.50	0.24	ug/L			08/09/22 22:00	1
4-Methyl-2-pentanone	ND		5.0	1.6	ug/L			08/09/22 22:00	1
Acetone	ND		8.0	3.6	ug/L			08/09/22 22:00	1
Benzene	ND		0.50	0.14	ug/L			08/09/22 22:00	1
Bromobenzene	ND		0.50	0.14	ug/L			08/09/22 22:00	1
Bromochloromethane	ND		1.0	0.27	ug/L			08/09/22 22:00	1
Bromodichloromethane	ND		0.50	0.15	ug/L			08/09/22 22:00	1
Bromoform	ND		0.50	0.28	ug/L			08/09/22 22:00	1
Bromomethane	ND		2.0	1.9	ug/L			08/09/22 22:00	1
cis-1,2-Dichloroethene	ND		0.50	0.16	ug/L			08/09/22 22:00	1
cis-1,3-Dichloropropene	ND		0.50	0.15	ug/L			08/09/22 22:00	1
Carbon disulfide	ND		1.0	0.32	ug/L			08/09/22 22:00	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			08/09/22 22:00	1
Chlorobenzene	ND		0.50	0.12	ug/L			08/09/22 22:00	1
Chloroethane	ND		0.50	0.38	ug/L			08/09/22 22:00	1
Chloroform	ND		0.50	0.17	ug/L			08/09/22 22:00	1
Chloromethane	ND		1.0	0.65	ug/L			08/09/22 22:00	1
Dibromochloromethane	ND		0.50	0.21	ug/L			08/09/22 22:00	1
Dibromomethane	ND		0.50	0.16	ug/L			08/09/22 22:00	1
Dichlorodifluoromethane	ND		1.0	0.51	ug/L			08/09/22 22:00	1
Ethylbenzene	ND		0.50	0.16	ug/L			08/09/22 22:00	1
Isopropylbenzene	ND		0.50	0.21	ug/L			08/09/22 22:00	1
Methylene Chloride	ND		1.0	0.40	ug/L			08/09/22 22:00	1

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-255581/6

Matrix: Water

Analysis Batch: 255581

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.14	ug/L			08/09/22 22:00	1
Naphthalene	ND		1.0	0.55	ug/L			08/09/22 22:00	1
n-Butylbenzene	ND		0.50	0.24	ug/L			08/09/22 22:00	1
N-Propylbenzene	ND		0.50	0.18	ug/L			08/09/22 22:00	1
o-Xylene	ND		0.50	0.18	ug/L			08/09/22 22:00	1
m,p-Xylene	ND		1.0	0.39	ug/L			08/09/22 22:00	1
p-Isopropyltoluene	ND		0.50	0.20	ug/L			08/09/22 22:00	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			08/09/22 22:00	1
Styrene	ND		0.50	0.27	ug/L			08/09/22 22:00	1
trans-1,2-Dichloroethene	ND		0.50	0.22	ug/L			08/09/22 22:00	1
trans-1,3-Dichloropropene	ND		0.50	0.21	ug/L			08/09/22 22:00	1
tert-Butylbenzene	ND		0.50	0.21	ug/L			08/09/22 22:00	1
Tetrachloroethene	ND		0.50	0.16	ug/L			08/09/22 22:00	1
Toluene	ND		0.50	0.14	ug/L			08/09/22 22:00	1
Trichloroethene	ND		0.50	0.15	ug/L			08/09/22 22:00	1
Trichlorofluoromethane	ND		0.50	0.26	ug/L			08/09/22 22:00	1
Vinyl acetate	ND		5.0	3.2	ug/L			08/09/22 22:00	1
Vinyl chloride	ND		0.50	0.23	ug/L			08/09/22 22:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		64 - 132		08/09/22 22:00	1
4-Bromofluorobenzene (Surr)	84		76 - 120		08/09/22 22:00	1
Dibromofluoromethane	107		80 - 120		08/09/22 22:00	1
Toluene-d8 (Surr)	98		80 - 120		08/09/22 22:00	1

Lab Sample ID: LCS 570-255581/3

Matrix: Water

Analysis Batch: 255581

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.35		ug/L		104	80 - 125
1,1,1-Trichloroethane	10.0	9.922		ug/L		99	75 - 121
1,1,2,2-Tetrachloroethane	10.0	9.650		ug/L		96	80 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.10		ug/L		101	56 - 132
1,1,2-Trichloroethane	10.0	10.39		ug/L		104	80 - 121
1,1-Dichloroethane	10.0	10.07		ug/L		101	80 - 120
1,1-Dichloroethene	10.0	9.721		ug/L		97	80 - 126
1,1-Dichloropropene	10.0	9.512		ug/L		95	72 - 122
1,2,3-Trichlorobenzene	10.0	10.37		ug/L		104	80 - 125
1,2,3-Trichloropropane	10.0	9.123		ug/L		91	75 - 127
1,2,4-Trichlorobenzene	10.0	9.831		ug/L		98	80 - 124
1,2,4-Trimethylbenzene	10.0	10.83		ug/L		108	80 - 128
1,2-Dibromo-3-Chloropropane	10.0	7.967		ug/L		80	63 - 123
1,2-Dibromoethane	10.0	10.37		ug/L		104	80 - 125
1,2-Dichlorobenzene	10.0	10.55		ug/L		106	80 - 120
1,2-Dichloroethane	10.0	10.41		ug/L		104	76 - 130
1,2-Dichloropropane	10.0	10.43		ug/L		104	74 - 124
1,3,5-Trimethylbenzene	10.0	10.43		ug/L		104	80 - 122

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-255581/3

Matrix: Water

Analysis Batch: 255581

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichlorobenzene	10.0	10.55		ug/L		105	80 - 120
1,3-Dichloropropane	10.0	10.29		ug/L		103	80 - 121
1,4-Dichlorobenzene	10.0	10.40		ug/L		104	80 - 120
2,2-Dichloropropane	10.0	9.815		ug/L		98	79 - 131
2-Butanone	10.0	11.32		ug/L		113	48 - 145
2-Chlorotoluene	10.0	10.62		ug/L		106	80 - 120
2-Hexanone	10.0	9.028		ug/L		90	50 - 149
4-Chlorotoluene	10.0	10.02		ug/L		100	80 - 120
4-Methyl-2-pentanone	10.0	9.043		ug/L		90	63 - 120
Acetone	10.0	10.89		ug/L		109	45 - 139
Benzene	10.0	10.49		ug/L		105	80 - 120
Bromobenzene	10.0	11.09		ug/L		111	80 - 125
Bromochloromethane	10.0	9.076		ug/L		91	80 - 120
Bromodichloromethane	10.0	10.22		ug/L		102	73 - 131
Bromoform	10.0	9.540		ug/L		95	76 - 124
Bromomethane	10.0	8.544		ug/L		85	26 - 180
cis-1,2-Dichloroethene	10.0	10.10		ug/L		101	80 - 120
cis-1,3-Dichloropropene	10.0	9.009		ug/L		90	76 - 123
Carbon disulfide	10.0	9.142		ug/L		91	75 - 123
Carbon tetrachloride	10.0	9.646		ug/L		96	61 - 139
Chlorobenzene	10.0	10.47		ug/L		105	80 - 120
Chloroethane	10.0	9.842		ug/L		98	54 - 150
Chloroform	10.0	10.06		ug/L		101	80 - 120
Chloromethane	10.0	12.78		ug/L		128	28 - 151
Dibromochloromethane	10.0	10.69		ug/L		107	74 - 136
Dibromomethane	10.0	10.65		ug/L		107	80 - 122
Dichlorodifluoromethane	10.0	9.400		ug/L		94	27 - 154
Ethylbenzene	10.0	10.74		ug/L		107	80 - 126
Isopropylbenzene	10.0	10.15		ug/L		101	80 - 120
Methylene Chloride	10.0	9.088		ug/L		91	80 - 120
Methyl-t-Butyl Ether (MTBE)	10.0	9.067		ug/L		91	69 - 128
Naphthalene	10.0	8.739		ug/L		87	70 - 130
n-Butylbenzene	10.0	9.375		ug/L		94	78 - 127
N-Propylbenzene	10.0	11.08		ug/L		111	80 - 121
o-Xylene	10.0	10.69		ug/L		107	80 - 124
m,p-Xylene	20.0	22.19		ug/L		111	80 - 123
p-Isopropyltoluene	10.0	10.03		ug/L		100	80 - 128
sec-Butylbenzene	10.0	9.832		ug/L		98	80 - 125
Styrene	10.0	10.37		ug/L		104	80 - 121
trans-1,2-Dichloroethene	10.0	9.548		ug/L		95	79 - 120
trans-1,3-Dichloropropene	10.0	9.183		ug/L		92	80 - 126
tert-Butylbenzene	10.0	10.11		ug/L		101	80 - 121
Tetrachloroethene	10.0	11.24		ug/L		112	80 - 125
Toluene	10.0	10.68		ug/L		107	80 - 120
Trichloroethene	10.0	10.24		ug/L		102	77 - 124
Trichlorofluoromethane	10.0	9.316		ug/L		93	41 - 163
Vinyl acetate	10.0	9.392		ug/L		94	61 - 126
Vinyl chloride	10.0	9.836		ug/L		98	50 - 160

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-255581/3

Matrix: Water

Analysis Batch: 255581

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		64 - 132
4-Bromofluorobenzene (Surr)	101		76 - 120
Dibromofluoromethane	97		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: LCSD 570-255581/4

Matrix: Water

Analysis Batch: 255581

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.08		ug/L		101	80 - 125	3	20
1,1,1-Trichloroethane	10.0	9.657		ug/L		97	75 - 121	3	20
1,1,2,2-Tetrachloroethane	10.0	9.836		ug/L		98	80 - 120	2	20
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.652		ug/L		97	56 - 132	5	22
1,1,2-Trichloroethane	10.0	10.17		ug/L		102	80 - 121	2	20
1,1-Dichloroethane	10.0	9.773		ug/L		98	80 - 120	3	20
1,1-Dichloroethene	10.0	9.209		ug/L		92	80 - 126	5	21
1,1-Dichloropropene	10.0	9.261		ug/L		93	72 - 122	3	20
1,2,3-Trichlorobenzene	10.0	10.18		ug/L		102	80 - 125	2	20
1,2,3-Trichloropropane	10.0	9.142		ug/L		91	75 - 127	0	20
1,2,4-Trichlorobenzene	10.0	9.512		ug/L		95	80 - 124	3	20
1,2,4-Trimethylbenzene	10.0	10.44		ug/L		104	80 - 128	4	20
1,2-Dibromo-3-Chloropropane	10.0	8.289		ug/L		83	63 - 123	4	20
1,2-Dibromoethane	10.0	10.48		ug/L		105	80 - 125	1	20
1,2-Dichlorobenzene	10.0	10.50		ug/L		105	80 - 120	0	20
1,2-Dichloroethane	10.0	10.40		ug/L		104	76 - 130	0	20
1,2-Dichloropropane	10.0	10.24		ug/L		102	74 - 124	2	20
1,3,5-Trimethylbenzene	10.0	10.25		ug/L		102	80 - 122	2	20
1,3-Dichlorobenzene	10.0	10.33		ug/L		103	80 - 120	2	20
1,3-Dichloropropane	10.0	10.04		ug/L		100	80 - 121	2	20
1,4-Dichlorobenzene	10.0	10.15		ug/L		102	80 - 120	2	20
2,2-Dichloropropane	10.0	9.112		ug/L		91	79 - 131	7	20
2-Butanone	10.0	12.25		ug/L		122	48 - 145	8	30
2-Chlorotoluene	10.0	10.38		ug/L		104	80 - 120	2	20
2-Hexanone	10.0	8.879		ug/L		89	50 - 149	2	29
4-Chlorotoluene	10.0	9.901		ug/L		99	80 - 120	1	20
4-Methyl-2-pentanone	10.0	9.613		ug/L		96	63 - 120	6	20
Acetone	10.0	10.58		ug/L		106	45 - 139	3	30
Benzene	10.0	10.25		ug/L		102	80 - 120	2	20
Bromobenzene	10.0	11.05		ug/L		110	80 - 125	0	20
Bromochloromethane	10.0	9.026		ug/L		90	80 - 120	1	20
Bromodichloromethane	10.0	10.41		ug/L		104	73 - 131	2	20
Bromoform	10.0	9.439		ug/L		94	76 - 124	1	20
Bromomethane	10.0	8.547		ug/L		85	26 - 180	0	20
cis-1,2-Dichloroethene	10.0	9.863		ug/L		99	80 - 120	2	20
cis-1,3-Dichloropropene	10.0	9.170		ug/L		92	76 - 123	2	20
Carbon disulfide	10.0	8.694		ug/L		87	75 - 123	5	20
Carbon tetrachloride	10.0	9.294		ug/L		93	61 - 139	4	20

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-255581/4

Matrix: Water

Analysis Batch: 255581

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorobenzene	10.0	10.37		ug/L		104	80 - 120	1	20
Chloroethane	10.0	9.182		ug/L		92	54 - 150	7	25
Chloroform	10.0	9.870		ug/L		99	80 - 120	2	20
Chloromethane	10.0	13.57		ug/L		136	28 - 151	6	20
Dibromochloromethane	10.0	10.54		ug/L		105	74 - 136	1	20
Dibromomethane	10.0	10.49		ug/L		105	80 - 122	1	20
Dichlorodifluoromethane	10.0	9.655		ug/L		97	27 - 154	3	21
Ethylbenzene	10.0	10.48		ug/L		105	80 - 126	3	20
Isopropylbenzene	10.0	9.996		ug/L		100	80 - 120	2	20
Methylene Chloride	10.0	8.521		ug/L		85	80 - 120	6	20
Methyl-t-Butyl Ether (MTBE)	10.0	9.047		ug/L		90	69 - 128	0	20
Naphthalene	10.0	8.459		ug/L		85	70 - 130	3	20
n-Butylbenzene	10.0	8.893		ug/L		89	78 - 127	5	20
N-Propylbenzene	10.0	10.79		ug/L		108	80 - 121	3	20
o-Xylene	10.0	10.61		ug/L		106	80 - 124	1	20
m,p-Xylene	20.0	21.68		ug/L		108	80 - 123	2	20
p-Isopropyltoluene	10.0	9.672		ug/L		97	80 - 128	4	20
sec-Butylbenzene	10.0	9.561		ug/L		96	80 - 125	3	20
Styrene	10.0	10.30		ug/L		103	80 - 121	1	20
trans-1,2-Dichloroethene	10.0	9.127		ug/L		91	79 - 120	5	20
trans-1,3-Dichloropropene	10.0	8.971		ug/L		90	80 - 126	2	20
tert-Butylbenzene	10.0	9.748		ug/L		97	80 - 121	4	20
Tetrachloroethene	10.0	10.82		ug/L		108	80 - 125	4	20
Toluene	10.0	10.40		ug/L		104	80 - 120	3	20
Trichloroethene	10.0	10.06		ug/L		101	77 - 124	2	20
Trichlorofluoromethane	10.0	9.025		ug/L		90	41 - 163	3	21
Vinyl acetate	10.0	9.447		ug/L		94	61 - 126	1	24
Vinyl chloride	10.0	9.526		ug/L		95	50 - 160	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		64 - 132
4-Bromofluorobenzene (Surr)	101		76 - 120
Dibromofluoromethane	96		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 570-254991/1-A

Matrix: Water

Analysis Batch: 255437

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 254991

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.337		0.50	0.34	ug/L		08/06/22 13:53	08/09/22 18:02	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	49		21 - 120				08/06/22 13:53	08/09/22 18:02	1

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) (Continued)

Lab Sample ID: MB 570-254991/1-A
Matrix: Water
Analysis Batch: 255437

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 254991

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	94		58 - 135	08/06/22 13:53	08/09/22 18:02	1

Lab Sample ID: LCS 570-254991/2-A
Matrix: Water
Analysis Batch: 255437

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 254991

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	26.65		ug/L		133	63 - 144
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	44		21 - 120				
Surrogate	%Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5	86		58 - 135				

Lab Sample ID: LCSD 570-254991/3-A
Matrix: Water
Analysis Batch: 255437

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 254991

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	20.0	26.36		ug/L		132	63 - 144	1	20
Isotope Dilution	%Recovery	LCSD Qualifier	Limits						
1,4-Dioxane-d8	41		21 - 120						
Surrogate	%Recovery	LCSD Qualifier	Limits						
Nitrobenzene-d5	89		58 - 135						

Lab Sample ID: LCS 570-256132/2-A
Matrix: Water
Analysis Batch: 256416

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 256132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	20.45		ug/L		102	63 - 144
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	69		21 - 120				
Surrogate	%Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5	112		58 - 135				

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Job ID: 570-105274-1

Lab Sample ID: LCSD 570-256132/3-A
Matrix: Water
Analysis Batch: 256416

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 256132

Lab Sample ID: 570-105371-D-2-C MS
Matrix: Water
Analysis Batch: 256416

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 256132

Lab Sample ID: 570-105371-D-2-D MSD
Matrix: Water
Analysis Batch: 256416

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 256132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	6.8		20.0	28.42		ug/L	-	108	48 - 164	3	20
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>MSD Limits</i>								
1,4-Dioxane-d8	50		21 - 120								
<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>MSD Limits</i>								
Nitrobenzene-d5	98		58 - 135								

QC Association Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

GC/MS VOA

Analysis Batch: 255581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105274-1	TB-080222B	Total/NA	Water	8260B	
570-105274-2	MW-33	Total/NA	Water	8260B	
570-105274-3	EW-01	Total/NA	Water	8260B	
MB 570-255581/6	Method Blank	Total/NA	Water	8260B	
LCS 570-255581/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-255581/4	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 254991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105274-3	EW-01	Total/NA	Water	3510C	
MB 570-254991/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-254991/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-254991/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 255437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105274-3	EW-01	Total/NA	Water	8270C SIM ID	254991
MB 570-254991/1-A	Method Blank	Total/NA	Water	8270C SIM ID	254991
LCS 570-254991/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	254991
LCSD 570-254991/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	254991

Prep Batch: 256132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105274-2	MW-33	Total/NA	Water	3510C	
LCS 570-256132/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-256132/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-105371-D-2-C MS	Matrix Spike	Total/NA	Water	3510C	
570-105371-D-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	

Analysis Batch: 256416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105274-2	MW-33	Total/NA	Water	8270C SIM ID	256132
LCS 570-256132/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	256132
LCSD 570-256132/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	256132
570-105371-D-2-C MS	Matrix Spike	Total/NA	Water	8270C SIM ID	256132
570-105371-D-2-D MSD	Matrix Spike Duplicate	Total/NA	Water	8270C SIM ID	256132

Lab Chronicle

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Client Sample ID: TB-080222B

Lab Sample ID: 570-105274-1

Date Collected: 08/02/22 08:30

Matrix: Water

Date Received: 08/03/22 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	255581	08/09/22 22:58	VYF4	EET CAL 4
Instrument ID: GCMSWW										

Client Sample ID: MW-33

Lab Sample ID: 570-105274-2

Date Collected: 08/02/22 14:40

Matrix: Water

Date Received: 08/03/22 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	255581	08/10/22 01:50	VYF4	EET CAL 4
Instrument ID: GCMSWW										
Total/NA	Prep	3510C			100 mL	10 mL	256132	08/11/22 14:01	UFLE	EET CAL 4
Total/NA	Analysis	8270C SIM ID		1	1 mL	0 mL	256416	08/12/22 18:50	UJ3K	EET CAL 4
Instrument ID: GCMSDDD										

Client Sample ID: EW-01

Lab Sample ID: 570-105274-3

Date Collected: 08/03/22 14:30

Matrix: Water

Date Received: 08/03/22 17:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	255581	08/10/22 02:18	VYF4	EET CAL 4
Instrument ID: GCMSWW										
Total/NA	Prep	3510C			100 mL	10 mL	254991	08/06/22 13:53	RY4P	EET CAL 4
Total/NA	Analysis	8270C SIM ID		1			255437	08/09/22 22:37	UFLE	EET CAL 4
Instrument ID: GCMSDDD										

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Laboratory: Eurofins Calscience

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4175	02-02-23

1
2
3
4
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15
16

Method Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105274-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-105274-1	TB-080222B	Water	08/02/22 08:30	08/03/22 17:00
570-105274-2	MW-33	Water	08/02/22 14:40	08/03/22 17:00
570-105274-3	EW-01	Water	08/03/22 14:30	08/03/22 17:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Login Sample Receipt Checklist

Client: Hargis + Associates, Inc.

Job Number: 570-105274-1

Login Number: 105274

List Source: Eurofins Calscience

List Number: 1

Creator: Lagunas, Jorge L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Tel: (714)895-5494

Laboratory Job ID: 570-105371-1
Client Project/Site: Raytheon / 532.30

For:
Hargis + Associates, Inc.
3131 Camino del Rio N
Suite 355
San Diego, California 92108

Attn: Steve Netto

Virendra R Patel

Authorized for release by:
8/15/2022 7:57:59 AM

Virendra Patel, Project Manager I
(714)895-5494

Virendra.Patel@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Job ID: 570-105371-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative 570-105371-1

Comments

No additional comments.

Receipt

The samples were received on 8/4/2022 4:30 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.8° C.

GC/MS VOA

Method 8260B: The continuing calibration verification (CCV) associated with batch 570-255691 recovered above the upper control limit for Chloromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: TB-080422B (570-105371-1), MW-36 (570-105371-2) and (CCVIS 570-255691/2).

Method 8260B: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 570-255691 recovered outside control limits for the following analyte: Chloromethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-255691 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8260B: This trip blank sample TB-080422B (570-105371-1) contained Methylene chloride above the MDL. Other sample associated with this trip blank was ND for Methylene chloride.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Client Sample ID: TB-080422B

Lab Sample ID: 570-105371-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	0.65	J	1.0	0.40	ug/L	1		8260B	Total/NA

Client Sample ID: MW-36

Lab Sample ID: 570-105371-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.75		0.50	0.21	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	75		0.50	0.21	ug/L	1		8260B	Total/NA
1,4-Dioxane	6.8		0.50	0.34	ug/L	1		8270C SIM ID	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-080422B
Date Collected: 08/04/22 07:30
Date Received: 08/04/22 16:30

Lab Sample ID: 570-105371-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/L			08/10/22 16:33	1
1,1,1-Trichloroethane	ND		0.50	0.20	ug/L			08/10/22 16:33	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.14	ug/L			08/10/22 16:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			08/10/22 16:33	1
1,1,2-Trichloroethane	ND		0.50	0.18	ug/L			08/10/22 16:33	1
1,1-Dichloroethane	ND		0.50	0.21	ug/L			08/10/22 16:33	1
1,1-Dichloroethene	ND		0.50	0.21	ug/L			08/10/22 16:33	1
1,1-Dichloropropene	ND		0.50	0.16	ug/L			08/10/22 16:33	1
1,2,3-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 16:33	1
1,2,3-Trichloropropane	ND		0.50	0.31	ug/L			08/10/22 16:33	1
1,2,4-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 16:33	1
1,2,4-Trimethylbenzene	ND		0.50	0.22	ug/L			08/10/22 16:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.84	ug/L			08/10/22 16:33	1
1,2-Dibromoethane	ND		0.50	0.27	ug/L			08/10/22 16:33	1
1,2-Dichlorobenzene	ND		0.50	0.14	ug/L			08/10/22 16:33	1
1,2-Dichloroethane	ND		0.50	0.14	ug/L			08/10/22 16:33	1
1,2-Dichloropropane	ND		0.50	0.14	ug/L			08/10/22 16:33	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			08/10/22 16:33	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			08/10/22 16:33	1
1,3-Dichloropropane	ND		0.50	0.19	ug/L			08/10/22 16:33	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			08/10/22 16:33	1
2,2-Dichloropropane	ND		0.50	0.26	ug/L			08/10/22 16:33	1
2-Butanone	ND		5.0	2.9	ug/L			08/10/22 16:33	1
2-Chlorotoluene	ND		0.50	0.23	ug/L			08/10/22 16:33	1
2-Hexanone	ND		6.0	2.0	ug/L			08/10/22 16:33	1
4-Chlorotoluene	ND		0.50	0.24	ug/L			08/10/22 16:33	1
4-Methyl-2-pentanone	ND		5.0	1.6	ug/L			08/10/22 16:33	1
Acetone	ND		8.0	3.6	ug/L			08/10/22 16:33	1
Benzene	ND		0.50	0.14	ug/L			08/10/22 16:33	1
Bromobenzene	ND		0.50	0.14	ug/L			08/10/22 16:33	1
Bromochloromethane	ND		1.0	0.27	ug/L			08/10/22 16:33	1
Bromodichloromethane	ND		0.50	0.15	ug/L			08/10/22 16:33	1
Bromoform	ND		0.50	0.28	ug/L			08/10/22 16:33	1
Bromomethane	ND		2.0	1.9	ug/L			08/10/22 16:33	1
cis-1,2-Dichloroethene	ND		0.50	0.16	ug/L			08/10/22 16:33	1
cis-1,3-Dichloropropene	ND		0.50	0.15	ug/L			08/10/22 16:33	1
Carbon disulfide	ND		1.0	0.32	ug/L			08/10/22 16:33	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			08/10/22 16:33	1
Chlorobenzene	ND		0.50	0.12	ug/L			08/10/22 16:33	1
Chloroethane	ND		0.50	0.38	ug/L			08/10/22 16:33	1
Chloroform	ND		0.50	0.17	ug/L			08/10/22 16:33	1
Chloromethane	ND	+	1.0	0.65	ug/L			08/10/22 16:33	1
Dibromochloromethane	ND		0.50	0.21	ug/L			08/10/22 16:33	1
Dibromomethane	ND		0.50	0.16	ug/L			08/10/22 16:33	1
Dichlorodifluoromethane	ND		1.0	0.51	ug/L			08/10/22 16:33	1
Ethylbenzene	ND		0.50	0.16	ug/L			08/10/22 16:33	1
Isopropylbenzene	ND		0.50	0.21	ug/L			08/10/22 16:33	1
Methylene Chloride	0.65	J	1.0	0.40	ug/L			08/10/22 16:33	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.14	ug/L			08/10/22 16:33	1

Eurofins Calscience

Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-080422B
Date Collected: 08/04/22 07:30
Date Received: 08/04/22 16:30

Lab Sample ID: 570-105371-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.55	ug/L			08/10/22 16:33	1
n-Butylbenzene	ND		0.50	0.24	ug/L			08/10/22 16:33	1
N-Propylbenzene	ND		0.50	0.18	ug/L			08/10/22 16:33	1
o-Xylene	ND		0.50	0.18	ug/L			08/10/22 16:33	1
m,p-Xylene	ND		1.0	0.39	ug/L			08/10/22 16:33	1
p-Isopropyltoluene	ND		0.50	0.20	ug/L			08/10/22 16:33	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			08/10/22 16:33	1
Styrene	ND		0.50	0.27	ug/L			08/10/22 16:33	1
trans-1,2-Dichloroethene	ND		0.50	0.22	ug/L			08/10/22 16:33	1
trans-1,3-Dichloropropene	ND		0.50	0.21	ug/L			08/10/22 16:33	1
tert-Butylbenzene	ND		0.50	0.21	ug/L			08/10/22 16:33	1
Tetrachloroethene	ND		0.50	0.16	ug/L			08/10/22 16:33	1
Toluene	ND		0.50	0.14	ug/L			08/10/22 16:33	1
Trichloroethene	ND		0.50	0.15	ug/L			08/10/22 16:33	1
Trichlorofluoromethane	ND		0.50	0.26	ug/L			08/10/22 16:33	1
Vinyl acetate	ND		5.0	3.2	ug/L			08/10/22 16:33	1
Vinyl chloride	ND		0.50	0.23	ug/L			08/10/22 16:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		64 - 132		08/10/22 16:33	1
4-Bromofluorobenzene (Surr)	83		76 - 120		08/10/22 16:33	1
Dibromofluoromethane	110		80 - 120		08/10/22 16:33	1
Toluene-d8 (Surr)	96		80 - 120		08/10/22 16:33	1

Client Sample ID: MW-36
Date Collected: 08/04/22 11:48
Date Received: 08/04/22 16:30

Lab Sample ID: 570-105371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/L			08/10/22 17:02	1
1,1,1-Trichloroethane	ND		0.50	0.20	ug/L			08/10/22 17:02	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.14	ug/L			08/10/22 17:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			08/10/22 17:02	1
1,1,2-Trichloroethane	ND		0.50	0.18	ug/L			08/10/22 17:02	1
1,1-Dichloroethane	0.75		0.50	0.21	ug/L			08/10/22 17:02	1
1,1-Dichloroethene	75		0.50	0.21	ug/L			08/10/22 17:02	1
1,1-Dichloropropene	ND		0.50	0.16	ug/L			08/10/22 17:02	1
1,2,3-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 17:02	1
1,2,3-Trichloropropane	ND		0.50	0.31	ug/L			08/10/22 17:02	1
1,2,4-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 17:02	1
1,2,4-Trimethylbenzene	ND		0.50	0.22	ug/L			08/10/22 17:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.84	ug/L			08/10/22 17:02	1
1,2-Dibromoethane	ND		0.50	0.27	ug/L			08/10/22 17:02	1
1,2-Dichlorobenzene	ND		0.50	0.14	ug/L			08/10/22 17:02	1
1,2-Dichloroethane	ND		0.50	0.14	ug/L			08/10/22 17:02	1
1,2-Dichloropropane	ND		0.50	0.14	ug/L			08/10/22 17:02	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			08/10/22 17:02	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			08/10/22 17:02	1
1,3-Dichloropropane	ND		0.50	0.19	ug/L			08/10/22 17:02	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			08/10/22 17:02	1
2,2-Dichloropropane	ND		0.50	0.26	ug/L			08/10/22 17:02	1

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Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: MW-36
Date Collected: 08/04/22 11:48
Date Received: 08/04/22 16:30

Lab Sample ID: 570-105371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	ND		5.0	2.9	ug/L			08/10/22 17:02	1
2-Chlorotoluene	ND		0.50	0.23	ug/L			08/10/22 17:02	1
2-Hexanone	ND		6.0	2.0	ug/L			08/10/22 17:02	1
4-Chlorotoluene	ND		0.50	0.24	ug/L			08/10/22 17:02	1
4-Methyl-2-pentanone	ND		5.0	1.6	ug/L			08/10/22 17:02	1
Acetone	ND		8.0	3.6	ug/L			08/10/22 17:02	1
Benzene	ND		0.50	0.14	ug/L			08/10/22 17:02	1
Bromobenzene	ND		0.50	0.14	ug/L			08/10/22 17:02	1
Bromochloromethane	ND		1.0	0.27	ug/L			08/10/22 17:02	1
Bromodichloromethane	ND		0.50	0.15	ug/L			08/10/22 17:02	1
Bromoform	ND		0.50	0.28	ug/L			08/10/22 17:02	1
Bromomethane	ND		2.0	1.9	ug/L			08/10/22 17:02	1
cis-1,2-Dichloroethene	ND		0.50	0.16	ug/L			08/10/22 17:02	1
cis-1,3-Dichloropropene	ND		0.50	0.15	ug/L			08/10/22 17:02	1
Carbon disulfide	ND		1.0	0.32	ug/L			08/10/22 17:02	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			08/10/22 17:02	1
Chlorobenzene	ND		0.50	0.12	ug/L			08/10/22 17:02	1
Chloroethane	ND		0.50	0.38	ug/L			08/10/22 17:02	1
Chloroform	ND		0.50	0.17	ug/L			08/10/22 17:02	1
Chloromethane	ND	*+	1.0	0.65	ug/L			08/10/22 17:02	1
Dibromochloromethane	ND		0.50	0.21	ug/L			08/10/22 17:02	1
Dibromomethane	ND		0.50	0.16	ug/L			08/10/22 17:02	1
Dichlorodifluoromethane	ND		1.0	0.51	ug/L			08/10/22 17:02	1
Ethylbenzene	ND		0.50	0.16	ug/L			08/10/22 17:02	1
Isopropylbenzene	ND		0.50	0.21	ug/L			08/10/22 17:02	1
Methylene Chloride	ND		1.0	0.40	ug/L			08/10/22 17:02	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.14	ug/L			08/10/22 17:02	1
Naphthalene	ND		1.0	0.55	ug/L			08/10/22 17:02	1
n-Butylbenzene	ND		0.50	0.24	ug/L			08/10/22 17:02	1
N-Propylbenzene	ND		0.50	0.18	ug/L			08/10/22 17:02	1
o-Xylene	ND		0.50	0.18	ug/L			08/10/22 17:02	1
m,p-Xylene	ND		1.0	0.39	ug/L			08/10/22 17:02	1
p-Isopropyltoluene	ND		0.50	0.20	ug/L			08/10/22 17:02	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			08/10/22 17:02	1
Styrene	ND		0.50	0.27	ug/L			08/10/22 17:02	1
trans-1,2-Dichloroethene	ND		0.50	0.22	ug/L			08/10/22 17:02	1
trans-1,3-Dichloropropene	ND		0.50	0.21	ug/L			08/10/22 17:02	1
tert-Butylbenzene	ND		0.50	0.21	ug/L			08/10/22 17:02	1
Tetrachloroethene	ND		0.50	0.16	ug/L			08/10/22 17:02	1
Toluene	ND		0.50	0.14	ug/L			08/10/22 17:02	1
Trichloroethene	ND		0.50	0.15	ug/L			08/10/22 17:02	1
Trichlorofluoromethane	ND		0.50	0.26	ug/L			08/10/22 17:02	1
Vinyl acetate	ND		5.0	3.2	ug/L			08/10/22 17:02	1
Vinyl chloride	ND		0.50	0.23	ug/L			08/10/22 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		64 - 132		08/10/22 17:02	1
4-Bromofluorobenzene (Surr)	84		76 - 120		08/10/22 17:02	1
Dibromofluoromethane	114		80 - 120		08/10/22 17:02	1
Toluene-d8 (Surr)	98		80 - 120		08/10/22 17:02	1

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Client Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Client Sample ID: MW-36
Date Collected: 08/04/22 11:48
Date Received: 08/04/22 16:30

Lab Sample ID: 570-105371-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	6.8		0.50	0.34	ug/L		08/11/22 14:03	08/12/22 15:56	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	59		21 - 120				08/11/22 14:03	08/12/22 15:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	106		58 - 135				08/11/22 14:03	08/12/22 15:56	1

Surrogate Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (64-132)	BFB (76-120)	DBFM (80-120)	TOL (80-120)
570-105187-A-1 MS	Matrix Spike	97	97	99	103
570-105187-A-1 MSD	Matrix Spike Duplicate	98	97	98	103
570-105371-1	TB-080422B	114	83	110	96
570-105371-2	MW-36	110	84	114	98
LCS 570-255691/3	Lab Control Sample	93	98	99	97
LCSD 570-255691/4	Lab Control Sample Dup	98	99	100	101
MB 570-255691/6	Method Blank	110	85	113	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		NBZ (58-135)			
570-105371-2	MW-36	106			
570-105371-2 MS	MW-36	99			
570-105371-2 MSD	MW-36	98			
LCS 570-256132/2-A	Lab Control Sample	112			
LCSD 570-256132/3-A	Lab Control Sample Dup	102			

Surrogate Legend

NBZ = Nitrobenzene-d5

Isotope Dilution Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE	
		(21-120)	
570-105371-2	MW-36	59	
570-105371-2 MS	MW-36	47	
570-105371-2 MSD	MW-36	50	
LCS 570-256132/2-A	Lab Control Sample	69	
LCSD 570-256132/3-A	Lab Control Sample Dup	59	

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-255691/6

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/L			08/10/22 10:49	1
1,1,1-Trichloroethane	ND		0.50	0.20	ug/L			08/10/22 10:49	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.14	ug/L			08/10/22 10:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			08/10/22 10:49	1
1,1,2-Trichloroethane	ND		0.50	0.18	ug/L			08/10/22 10:49	1
1,1-Dichloroethane	ND		0.50	0.21	ug/L			08/10/22 10:49	1
1,1-Dichloroethene	ND		0.50	0.21	ug/L			08/10/22 10:49	1
1,1-Dichloropropene	ND		0.50	0.16	ug/L			08/10/22 10:49	1
1,2,3-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 10:49	1
1,2,3-Trichloropropane	ND		0.50	0.31	ug/L			08/10/22 10:49	1
1,2,4-Trichlorobenzene	ND		0.50	0.26	ug/L			08/10/22 10:49	1
1,2,4-Trimethylbenzene	ND		0.50	0.22	ug/L			08/10/22 10:49	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.84	ug/L			08/10/22 10:49	1
1,2-Dibromoethane	ND		0.50	0.27	ug/L			08/10/22 10:49	1
1,2-Dichlorobenzene	ND		0.50	0.14	ug/L			08/10/22 10:49	1
1,2-Dichloroethane	ND		0.50	0.14	ug/L			08/10/22 10:49	1
1,2-Dichloropropane	ND		0.50	0.14	ug/L			08/10/22 10:49	1
1,3,5-Trimethylbenzene	ND		0.50	0.19	ug/L			08/10/22 10:49	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			08/10/22 10:49	1
1,3-Dichloropropane	ND		0.50	0.19	ug/L			08/10/22 10:49	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			08/10/22 10:49	1
2,2-Dichloropropane	ND		0.50	0.26	ug/L			08/10/22 10:49	1
2-Butanone	ND		5.0	2.9	ug/L			08/10/22 10:49	1
2-Chlorotoluene	ND		0.50	0.23	ug/L			08/10/22 10:49	1
2-Hexanone	ND		6.0	2.0	ug/L			08/10/22 10:49	1
4-Chlorotoluene	ND		0.50	0.24	ug/L			08/10/22 10:49	1
4-Methyl-2-pentanone	ND		5.0	1.6	ug/L			08/10/22 10:49	1
Acetone	ND		8.0	3.6	ug/L			08/10/22 10:49	1
Benzene	ND		0.50	0.14	ug/L			08/10/22 10:49	1
Bromobenzene	ND		0.50	0.14	ug/L			08/10/22 10:49	1
Bromochloromethane	ND		1.0	0.27	ug/L			08/10/22 10:49	1
Bromodichloromethane	ND		0.50	0.15	ug/L			08/10/22 10:49	1
Bromoform	ND		0.50	0.28	ug/L			08/10/22 10:49	1
Bromomethane	ND		2.0	1.9	ug/L			08/10/22 10:49	1
cis-1,2-Dichloroethene	ND		0.50	0.16	ug/L			08/10/22 10:49	1
cis-1,3-Dichloropropene	ND		0.50	0.15	ug/L			08/10/22 10:49	1
Carbon disulfide	ND		1.0	0.32	ug/L			08/10/22 10:49	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			08/10/22 10:49	1
Chlorobenzene	ND		0.50	0.12	ug/L			08/10/22 10:49	1
Chloroethane	ND		0.50	0.38	ug/L			08/10/22 10:49	1
Chloroform	ND		0.50	0.17	ug/L			08/10/22 10:49	1
Chloromethane	ND		1.0	0.65	ug/L			08/10/22 10:49	1
Dibromochloromethane	ND		0.50	0.21	ug/L			08/10/22 10:49	1
Dibromomethane	ND		0.50	0.16	ug/L			08/10/22 10:49	1
Dichlorodifluoromethane	ND		1.0	0.51	ug/L			08/10/22 10:49	1
Ethylbenzene	ND		0.50	0.16	ug/L			08/10/22 10:49	1
Isopropylbenzene	ND		0.50	0.21	ug/L			08/10/22 10:49	1
Methylene Chloride	ND		1.0	0.40	ug/L			08/10/22 10:49	1

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-255691/6

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.14	ug/L			08/10/22 10:49	1
Naphthalene	ND		1.0	0.55	ug/L			08/10/22 10:49	1
n-Butylbenzene	ND		0.50	0.24	ug/L			08/10/22 10:49	1
N-Propylbenzene	ND		0.50	0.18	ug/L			08/10/22 10:49	1
o-Xylene	ND		0.50	0.18	ug/L			08/10/22 10:49	1
m,p-Xylene	ND		1.0	0.39	ug/L			08/10/22 10:49	1
p-Isopropyltoluene	ND		0.50	0.20	ug/L			08/10/22 10:49	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			08/10/22 10:49	1
Styrene	ND		0.50	0.27	ug/L			08/10/22 10:49	1
trans-1,2-Dichloroethene	ND		0.50	0.22	ug/L			08/10/22 10:49	1
trans-1,3-Dichloropropene	ND		0.50	0.21	ug/L			08/10/22 10:49	1
tert-Butylbenzene	ND		0.50	0.21	ug/L			08/10/22 10:49	1
Tetrachloroethene	ND		0.50	0.16	ug/L			08/10/22 10:49	1
Toluene	ND		0.50	0.14	ug/L			08/10/22 10:49	1
Trichloroethene	ND		0.50	0.15	ug/L			08/10/22 10:49	1
Trichlorofluoromethane	ND		0.50	0.26	ug/L			08/10/22 10:49	1
Vinyl acetate	ND		5.0	3.2	ug/L			08/10/22 10:49	1
Vinyl chloride	ND		0.50	0.23	ug/L			08/10/22 10:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		64 - 132		08/10/22 10:49	1
4-Bromofluorobenzene (Surr)	85		76 - 120		08/10/22 10:49	1
Dibromofluoromethane	113		80 - 120		08/10/22 10:49	1
Toluene-d8 (Surr)	97		80 - 120		08/10/22 10:49	1

Lab Sample ID: LCS 570-255691/3

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.19		ug/L		102	80 - 125
1,1,1-Trichloroethane	10.0	9.798		ug/L		98	75 - 121
1,1,2,2-Tetrachloroethane	10.0	9.292		ug/L		93	80 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.21		ug/L		102	56 - 132
1,1,2-Trichloroethane	10.0	9.760		ug/L		98	80 - 121
1,1-Dichloroethane	10.0	10.50		ug/L		105	80 - 120
1,1-Dichloroethene	10.0	9.843		ug/L		98	80 - 126
1,1-Dichloropropene	10.0	9.192		ug/L		92	72 - 122
1,2,3-Trichlorobenzene	10.0	9.799		ug/L		98	80 - 125
1,2,3-Trichloropropane	10.0	8.288		ug/L		83	75 - 127
1,2,4-Trichlorobenzene	10.0	9.351		ug/L		94	80 - 124
1,2,4-Trimethylbenzene	10.0	10.89		ug/L		109	80 - 128
1,2-Dibromo-3-Chloropropane	10.0	7.248		ug/L		72	63 - 123
1,2-Dibromoethane	10.0	9.649		ug/L		96	80 - 125
1,2-Dichlorobenzene	10.0	10.54		ug/L		105	80 - 120
1,2-Dichloroethane	10.0	9.976		ug/L		100	76 - 130
1,2-Dichloropropane	10.0	10.20		ug/L		102	74 - 124
1,3,5-Trimethylbenzene	10.0	10.33		ug/L		103	80 - 122

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-255691/3

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichlorobenzene	10.0	10.69		ug/L		107	80 - 120
1,3-Dichloropropane	10.0	9.686		ug/L		97	80 - 121
1,4-Dichlorobenzene	10.0	10.33		ug/L		103	80 - 120
2,2-Dichloropropane	10.0	10.03		ug/L		100	79 - 131
2-Butanone	10.0	10.23		ug/L		102	48 - 145
2-Chlorotoluene	10.0	10.55		ug/L		106	80 - 120
2-Hexanone	10.0	7.148		ug/L		71	50 - 149
4-Chlorotoluene	10.0	10.36		ug/L		104	80 - 120
4-Methyl-2-pentanone	10.0	7.474		ug/L		75	63 - 120
Acetone	10.0	8.509		ug/L		85	45 - 139
Benzene	10.0	10.29		ug/L		103	80 - 120
Bromobenzene	10.0	10.73		ug/L		107	80 - 125
Bromochloromethane	10.0	8.851		ug/L		89	80 - 120
Bromodichloromethane	10.0	9.749		ug/L		97	73 - 131
Bromoform	10.0	9.318		ug/L		93	76 - 124
Bromomethane	10.0	8.942		ug/L		89	26 - 180
cis-1,2-Dichloroethene	10.0	9.839		ug/L		98	80 - 120
cis-1,3-Dichloropropene	10.0	8.573		ug/L		86	76 - 123
Carbon disulfide	10.0	8.832		ug/L		88	75 - 123
Carbon tetrachloride	10.0	9.397		ug/L		94	61 - 139
Chlorobenzene	10.0	10.49		ug/L		105	80 - 120
Chloroethane	10.0	10.80		ug/L		108	54 - 150
Chloroform	10.0	9.873		ug/L		99	80 - 120
Chloromethane	10.0	21.22	++	ug/L		212	28 - 151
Dibromochloromethane	10.0	10.20		ug/L		102	74 - 136
Dibromomethane	10.0	9.824		ug/L		98	80 - 122
Dichlorodifluoromethane	10.0	12.58		ug/L		126	27 - 154
Ethylbenzene	10.0	10.61		ug/L		106	80 - 126
Isopropylbenzene	10.0	10.10		ug/L		101	80 - 120
Methylene Chloride	10.0	8.810		ug/L		88	80 - 120
Methyl-t-Butyl Ether (MTBE)	10.0	9.804		ug/L		98	69 - 128
Naphthalene	10.0	7.392		ug/L		74	70 - 130
n-Butylbenzene	10.0	9.659		ug/L		97	78 - 127
N-Propylbenzene	10.0	10.99		ug/L		110	80 - 121
o-Xylene	10.0	10.62		ug/L		106	80 - 124
m,p-Xylene	20.0	21.91		ug/L		110	80 - 123
p-Isopropyltoluene	10.0	10.16		ug/L		102	80 - 128
sec-Butylbenzene	10.0	10.24		ug/L		102	80 - 125
Styrene	10.0	10.13		ug/L		101	80 - 121
trans-1,2-Dichloroethene	10.0	11.48		ug/L		115	79 - 120
trans-1,3-Dichloropropene	10.0	8.695		ug/L		87	80 - 126
tert-Butylbenzene	10.0	10.24		ug/L		102	80 - 121
Tetrachloroethene	10.0	11.47		ug/L		115	80 - 125
Toluene	10.0	10.01		ug/L		100	80 - 120
Trichloroethene	10.0	10.12		ug/L		101	77 - 124
Trichlorofluoromethane	10.0	11.05		ug/L		110	41 - 163
Vinyl acetate	10.0	9.326		ug/L		93	61 - 126
Vinyl chloride	10.0	11.44		ug/L		114	50 - 160

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-255691/3

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		64 - 132
4-Bromofluorobenzene (Surr)	98		76 - 120
Dibromofluoromethane	99		80 - 120
Toluene-d8 (Surr)	97		80 - 120

Lab Sample ID: LCSD 570-255691/4

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.16		ug/L		102	80 - 125	0	20
1,1,1-Trichloroethane	10.0	10.09		ug/L		101	75 - 121	3	20
1,1,2,2-Tetrachloroethane	10.0	9.833		ug/L		98	80 - 120	6	20
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.857		ug/L		99	56 - 132	4	22
1,1,2-Trichloroethane	10.0	10.26		ug/L		103	80 - 121	5	20
1,1-Dichloroethane	10.0	9.942		ug/L		99	80 - 120	5	20
1,1-Dichloroethene	10.0	9.463		ug/L		95	80 - 126	4	21
1,1-Dichloropropene	10.0	9.676		ug/L		97	72 - 122	5	20
1,2,3-Trichlorobenzene	10.0	10.22		ug/L		102	80 - 125	4	20
1,2,3-Trichloropropane	10.0	8.857		ug/L		89	75 - 127	7	20
1,2,4-Trichlorobenzene	10.0	9.684		ug/L		97	80 - 124	3	20
1,2,4-Trimethylbenzene	10.0	10.64		ug/L		106	80 - 128	2	20
1,2-Dibromo-3-Chloropropane	10.0	7.949		ug/L		79	63 - 123	9	20
1,2-Dibromoethane	10.0	10.52		ug/L		105	80 - 125	9	20
1,2-Dichlorobenzene	10.0	10.62		ug/L		106	80 - 120	1	20
1,2-Dichloroethane	10.0	10.10		ug/L		101	76 - 130	1	20
1,2-Dichloropropane	10.0	10.41		ug/L		104	74 - 124	2	20
1,3,5-Trimethylbenzene	10.0	10.37		ug/L		104	80 - 122	0	20
1,3-Dichlorobenzene	10.0	10.61		ug/L		106	80 - 120	1	20
1,3-Dichloropropane	10.0	9.971		ug/L		100	80 - 121	3	20
1,4-Dichlorobenzene	10.0	10.25		ug/L		103	80 - 120	1	20
2,2-Dichloropropane	10.0	9.847		ug/L		98	79 - 131	2	20
2-Butanone	10.0	10.65		ug/L		106	48 - 145	4	30
2-Chlorotoluene	10.0	10.45		ug/L		104	80 - 120	1	20
2-Hexanone	10.0	8.338		ug/L		83	50 - 149	15	29
4-Chlorotoluene	10.0	10.06		ug/L		101	80 - 120	3	20
4-Methyl-2-pentanone	10.0	9.131		ug/L		91	63 - 120	20	20
Acetone	10.0	8.043		ug/L		80	45 - 139	6	30
Benzene	10.0	10.37		ug/L		104	80 - 120	1	20
Bromobenzene	10.0	10.85		ug/L		108	80 - 125	1	20
Bromochloromethane	10.0	8.955		ug/L		90	80 - 120	1	20
Bromodichloromethane	10.0	10.16		ug/L		102	73 - 131	4	20
Bromoform	10.0	9.476		ug/L		95	76 - 124	2	20
Bromomethane	10.0	8.206		ug/L		82	26 - 180	9	20
cis-1,2-Dichloroethene	10.0	10.18		ug/L		102	80 - 120	3	20
cis-1,3-Dichloropropene	10.0	9.113		ug/L		91	76 - 123	6	20
Carbon disulfide	10.0	8.775		ug/L		88	75 - 123	1	20
Carbon tetrachloride	10.0	9.586		ug/L		96	61 - 139	2	20

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-255691/4

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorobenzene	10.0	10.28		ug/L		103	80 - 120	2	20
Chloroethane	10.0	9.437		ug/L		94	54 - 150	13	25
Chloroform	10.0	10.12		ug/L		101	80 - 120	2	20
Chloromethane	10.0	19.14	*+	ug/L		191	28 - 151	10	20
Dibromochloromethane	10.0	10.56		ug/L		106	74 - 136	3	20
Dibromomethane	10.0	10.40		ug/L		104	80 - 122	6	20
Dichlorodifluoromethane	10.0	10.60		ug/L		106	27 - 154	17	21
Ethylbenzene	10.0	10.53		ug/L		105	80 - 126	1	20
Isopropylbenzene	10.0	10.07		ug/L		101	80 - 120	0	20
Methylene Chloride	10.0	9.164		ug/L		92	80 - 120	4	20
Methyl-t-Butyl Ether (MTBE)	10.0	8.975		ug/L		90	69 - 128	9	20
Naphthalene	10.0	8.185		ug/L		82	70 - 130	10	20
n-Butylbenzene	10.0	9.365		ug/L		94	78 - 127	3	20
N-Propylbenzene	10.0	11.03		ug/L		110	80 - 121	0	20
o-Xylene	10.0	10.55		ug/L		105	80 - 124	1	20
m,p-Xylene	20.0	21.82		ug/L		109	80 - 123	0	20
p-Isopropyltoluene	10.0	9.897		ug/L		99	80 - 128	3	20
sec-Butylbenzene	10.0	9.920		ug/L		99	80 - 125	3	20
Styrene	10.0	10.38		ug/L		104	80 - 121	2	20
trans-1,2-Dichloroethene	10.0	9.997		ug/L		100	79 - 120	14	20
trans-1,3-Dichloropropene	10.0	8.971		ug/L		90	80 - 126	3	20
tert-Butylbenzene	10.0	10.07		ug/L		101	80 - 121	2	20
Tetrachloroethene	10.0	11.00		ug/L		110	80 - 125	4	20
Toluene	10.0	10.48		ug/L		105	80 - 120	5	20
Trichloroethene	10.0	10.08		ug/L		101	77 - 124	0	20
Trichlorofluoromethane	10.0	10.16		ug/L		102	41 - 163	8	21
Vinyl acetate	10.0	11.57		ug/L		116	61 - 126	21	24
Vinyl chloride	10.0	10.04		ug/L		100	50 - 160	13	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 132
4-Bromofluorobenzene (Surr)	99		76 - 120
Dibromofluoromethane	100		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: 570-105187-A-1 MS

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	ND		10.0	10.61		ug/L		106	61 - 142
1,1,1-Trichloroethane	ND		10.0	9.953		ug/L		100	68 - 138
1,1,2,2-Tetrachloroethane	ND		10.0	9.834		ug/L		98	71 - 133
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.650		ug/L		86	51 - 132
1,1,2-Trichloroethane	ND		10.0	10.41		ug/L		104	70 - 132
1,1-Dichloroethane	ND		10.0	10.31		ug/L		103	70 - 132
1,1-Dichloroethene	ND		10.0	9.490		ug/L		95	57 - 148
1,1-Dichloropropene	ND		10.0	9.227		ug/L		92	74 - 132

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-105187-A-1 MS

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichlorobenzene	ND		10.0	9.272		ug/L		93	66 - 135
1,2,3-Trichloropropane	ND		10.0	8.702		ug/L		87	61 - 130
1,2,4-Trichlorobenzene	ND		10.0	8.661		ug/L		87	66 - 131
1,2,4-Trimethylbenzene	ND		10.0	10.48		ug/L		105	65 - 132
1,2-Dibromo-3-Chloropropane	ND		10.0	7.545		ug/L		75	48 - 132
1,2-Dibromoethane	ND		10.0	10.14		ug/L		101	74 - 128
1,2-Dichlorobenzene	ND		10.0	10.52		ug/L		105	74 - 126
1,2-Dichloroethane	ND		10.0	10.35		ug/L		104	65 - 140
1,2-Dichloropropane	ND		10.0	10.42		ug/L		104	75 - 127
1,3,5-Trimethylbenzene	ND		10.0	10.40		ug/L		104	64 - 144
1,3-Dichlorobenzene	ND		10.0	10.30		ug/L		103	73 - 125
1,3-Dichloropropane	ND		10.0	10.03		ug/L		100	71 - 131
1,4-Dichlorobenzene	ND		10.0	9.949		ug/L		99	73 - 125
2,2-Dichloropropane	ND		10.0	8.441		ug/L		84	39 - 138
2-Butanone	ND		10.0	10.72		ug/L		107	44 - 140
2-Chlorotoluene	ND		10.0	10.61		ug/L		106	71 - 130
2-Hexanone	ND		10.0	7.385		ug/L		74	52 - 136
4-Chlorotoluene	ND		10.0	9.923		ug/L		99	69 - 127
4-Methyl-2-pentanone	ND		10.0	8.736		ug/L		87	44 - 139
Acetone	ND		10.0	8.290		ug/L		83	20 - 174
Benzene	ND		10.0	10.65		ug/L		106	75 - 125
Bromobenzene	ND		10.0	11.13		ug/L		111	75 - 132
Bromochloromethane	ND		10.0	9.119		ug/L		91	75 - 125
Bromodichloromethane	ND		10.0	10.44		ug/L		104	70 - 137
Bromoform	ND		10.0	9.296		ug/L		93	51 - 142
Bromomethane	ND		10.0	9.287		ug/L		93	46 - 164
cis-1,2-Dichloroethene	ND		10.0	10.15		ug/L		102	62 - 138
cis-1,3-Dichloropropene	ND		10.0	8.638		ug/L		86	67 - 125
Carbon disulfide	ND		10.0	9.049		ug/L		90	70 - 132
Carbon tetrachloride	ND		10.0	9.509		ug/L		95	50 - 159
Chlorobenzene	ND		10.0	10.57		ug/L		106	75 - 128
Chloroethane	ND		10.0	10.04		ug/L		100	62 - 161
Chloroform	ND		10.0	10.19		ug/L		102	73 - 130
Chloromethane	ND	*+ F1	10.0	20.12	F1	ug/L		201	45 - 157
Dibromochloromethane	ND		10.0	10.88		ug/L		109	63 - 145
Dibromomethane	ND		10.0	10.84		ug/L		108	75 - 127
Dichlorodifluoromethane	ND		10.0	9.860		ug/L		99	31 - 132
Ethylbenzene	ND		10.0	10.88		ug/L		109	73 - 135
Isopropylbenzene	ND		10.0	10.16		ug/L		102	69 - 141
Methylene Chloride	ND		10.0	8.952		ug/L		90	65 - 127
Methyl-t-Butyl Ether (MTBE)	ND		10.0	8.543		ug/L		85	59 - 131
Naphthalene	ND		10.0	6.976		ug/L		70	51 - 133
n-Butylbenzene	ND		10.0	8.768		ug/L		88	66 - 128
N-Propylbenzene	ND		10.0	11.22		ug/L		112	73 - 136
o-Xylene	ND		10.0	10.70		ug/L		107	69 - 138
m,p-Xylene	ND		20.0	22.48		ug/L		112	73 - 138
p-Isopropyltoluene	ND		10.0	9.664		ug/L		97	69 - 134
sec-Butylbenzene	ND		10.0	9.661		ug/L		97	70 - 130
Styrene	ND		10.0	10.28		ug/L		103	45 - 144

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-105187-A-1 MS

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,2-Dichloroethene	ND		10.0	9.550		ug/L		96	61 - 138
trans-1,3-Dichloropropene	ND		10.0	8.575		ug/L		86	61 - 131
tert-Butylbenzene	ND		10.0	9.708		ug/L		97	71 - 131
Tetrachloroethene	ND		10.0	11.24		ug/L		112	64 - 150
Toluene	ND		10.0	10.86		ug/L		109	75 - 127
Trichloroethene	ND		10.0	10.26		ug/L		103	34 - 159
Trichlorofluoromethane	ND		10.0	9.386		ug/L		94	69 - 142
Vinyl acetate	ND		10.0	9.018		ug/L		90	35 - 132
Vinyl chloride	ND		10.0	10.49		ug/L		105	51 - 168

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		64 - 132
4-Bromofluorobenzene (Surr)	97		76 - 120
Dibromofluoromethane	99		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: 570-105187-A-1 MSD

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		10.0	10.28		ug/L		103	61 - 142	3	20
1,1,1-Trichloroethane	ND		10.0	9.990		ug/L		100	68 - 138	0	20
1,1,2,2-Tetrachloroethane	ND		10.0	9.634		ug/L		96	71 - 133	2	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.464		ug/L		85	51 - 132	2	21
1,1,2-Trichloroethane	ND		10.0	10.05		ug/L		101	70 - 132	3	20
1,1-Dichloroethane	ND		10.0	10.26		ug/L		103	70 - 132	1	20
1,1-Dichloroethene	ND		10.0	9.272		ug/L		93	57 - 148	2	20
1,1-Dichloropropene	ND		10.0	9.355		ug/L		94	74 - 132	1	20
1,2,3-Trichlorobenzene	ND		10.0	9.732		ug/L		97	66 - 135	5	22
1,2,3-Trichloropropane	ND		10.0	8.740		ug/L		87	61 - 130	0	20
1,2,4-Trichlorobenzene	ND		10.0	8.955		ug/L		90	66 - 131	3	24
1,2,4-Trimethylbenzene	ND		10.0	10.44		ug/L		104	65 - 132	0	22
1,2-Dibromo-3-Chloropropane	ND		10.0	7.771		ug/L		78	48 - 132	3	20
1,2-Dibromoethane	ND		10.0	10.33		ug/L		103	74 - 128	2	20
1,2-Dichlorobenzene	ND		10.0	10.47		ug/L		105	74 - 126	0	20
1,2-Dichloroethane	ND		10.0	10.61		ug/L		106	65 - 140	2	20
1,2-Dichloropropane	ND		10.0	10.59		ug/L		106	75 - 127	2	20
1,3,5-Trimethylbenzene	ND		10.0	10.09		ug/L		101	64 - 144	3	22
1,3-Dichlorobenzene	ND		10.0	10.31		ug/L		103	73 - 125	0	21
1,3-Dichloropropane	ND		10.0	9.771		ug/L		98	71 - 131	3	20
1,4-Dichlorobenzene	ND		10.0	10.23		ug/L		102	73 - 125	3	20
2,2-Dichloropropane	ND		10.0	8.468		ug/L		85	39 - 138	0	20
2-Butanone	ND		10.0	10.45		ug/L		105	44 - 140	3	34
2-Chlorotoluene	ND		10.0	10.35		ug/L		104	71 - 130	2	20
2-Hexanone	ND		10.0	7.760		ug/L		78	52 - 136	5	37
4-Chlorotoluene	ND		10.0	10.01		ug/L		100	69 - 127	1	20
4-Methyl-2-pentanone	ND		10.0	8.510		ug/L		85	44 - 139	3	21

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-105187-A-1 MSD

Matrix: Water

Analysis Batch: 255691

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	ND		10.0	8.488		ug/L		85	20 - 174	2	35
Benzene	ND		10.0	10.83		ug/L		108	75 - 125	2	20
Bromobenzene	ND		10.0	10.78		ug/L		108	75 - 132	3	20
Bromochloromethane	ND		10.0	8.847		ug/L		88	75 - 125	3	20
Bromodichloromethane	ND		10.0	10.52		ug/L		105	70 - 137	1	20
Bromoform	ND		10.0	9.265		ug/L		93	51 - 142	0	20
Bromomethane	ND		10.0	8.896		ug/L		89	46 - 164	4	25
cis-1,2-Dichloroethene	ND		10.0	10.24		ug/L		102	62 - 138	1	20
cis-1,3-Dichloropropene	ND		10.0	8.674		ug/L		87	67 - 125	0	20
Carbon disulfide	ND		10.0	8.869		ug/L		89	70 - 132	2	20
Carbon tetrachloride	ND		10.0	9.294		ug/L		93	50 - 159	2	20
Chlorobenzene	ND		10.0	10.31		ug/L		103	75 - 128	2	20
Chloroethane	ND		10.0	10.39		ug/L		104	62 - 161	3	20
Chloroform	ND		10.0	9.992		ug/L		100	73 - 130	2	20
Chloromethane	ND	*+ F1	10.0	19.82	F1	ug/L		198	45 - 157	2	21
Dibromochloromethane	ND		10.0	10.50		ug/L		105	63 - 145	4	20
Dibromomethane	ND		10.0	10.52		ug/L		105	75 - 127	3	20
Dichlorodifluoromethane	ND		10.0	9.743		ug/L		97	31 - 132	1	21
Ethylbenzene	ND		10.0	10.55		ug/L		106	73 - 135	3	20
Isopropylbenzene	ND		10.0	9.957		ug/L		100	69 - 141	2	22
Methylene Chloride	ND		10.0	9.000		ug/L		90	65 - 127	1	20
Methyl-t-Butyl Ether (MTBE)	ND		10.0	8.880		ug/L		89	59 - 131	4	20
Naphthalene	ND		10.0	7.614		ug/L		76	51 - 133	9	25
n-Butylbenzene	ND		10.0	8.964		ug/L		90	66 - 128	2	24
N-Propylbenzene	ND		10.0	10.85		ug/L		109	73 - 136	3	22
o-Xylene	ND		10.0	10.51		ug/L		105	69 - 138	2	20
m,p-Xylene	ND		20.0	21.90		ug/L		110	73 - 138	3	21
p-Isopropyltoluene	ND		10.0	9.608		ug/L		96	69 - 134	1	23
sec-Butylbenzene	ND		10.0	9.544		ug/L		95	70 - 130	1	22
Styrene	ND		10.0	9.991		ug/L		100	45 - 144	3	32
trans-1,2-Dichloroethene	ND		10.0	9.559		ug/L		96	61 - 138	0	21
trans-1,3-Dichloropropene	ND		10.0	8.764		ug/L		88	61 - 131	2	20
tert-Butylbenzene	ND		10.0	9.689		ug/L		97	71 - 131	0	23
Tetrachloroethene	ND		10.0	10.84		ug/L		108	64 - 150	4	23
Toluene	ND		10.0	10.55		ug/L		105	75 - 127	3	20
Trichloroethene	ND		10.0	10.29		ug/L		103	34 - 159	0	23
Trichlorofluoromethane	ND		10.0	9.061		ug/L		91	69 - 142	4	20
Vinyl acetate	ND		10.0	9.568		ug/L		96	35 - 132	6	29
Vinyl chloride	ND		10.0	10.58		ug/L		106	51 - 168	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 132
4-Bromofluorobenzene (Surr)	97		76 - 120
Dibromofluoromethane	98		80 - 120
Toluene-d8 (Surr)	103		80 - 120

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QC Sample Results

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8270C SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: LCS 570-256132/2-A

Matrix: Water

Analysis Batch: 256416

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 256132

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			20.0	20.45		ug/L		102	63 - 144		
	LCS	LCS									
Isotope Dilution	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8	69		21 - 120								
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5	112		58 - 135								

Lab Sample ID: LCSD 570-256132/3-A

Matrix: Water

Analysis Batch: 256416

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 256132

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	21.06		ug/L		105	63 - 144	3	20
	LCSD	LCSD									
Isotope Dilution	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8	59		21 - 120								
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5	102		58 - 135								

Lab Sample ID: 570-105371-2 MS

Matrix: Water

Analysis Batch: 256416

Client Sample ID: MW-36

Prep Type: Total/NA

Prep Batch: 256132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane	6.8		20.0	27.47		ug/L		103	48 - 164		
	MS	MS									
Isotope Dilution	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8	47		21 - 120								
	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5	99		58 - 135								

Lab Sample ID: 570-105371-2 MSD

Matrix: Water

Analysis Batch: 256416

Client Sample ID: MW-36

Prep Type: Total/NA

Prep Batch: 256132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	6.8		20.0	28.42		ug/L		108	48 - 164	3	20
	MSD	MSD									
Isotope Dilution	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8	50		21 - 120								
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5	98		58 - 135								

Eurofins Calscience

Marginal Exceedance (ME) Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 570-255691/3

Matrix: Water

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	%Rec	%Rec. Limits	ME %Rec. Limits	Marginal Exceedance Status
1,1,1,2-Tetrachloroethane	10.0	10.19		ug/L	102	80 - 125	73 - 133	
1,1,1-Trichloroethane	10.0	9.798		ug/L	98	75 - 121	67 - 129	
1,1,2,2-Tetrachloroethane	10.0	9.292		ug/L	93	80 - 120	73 - 127	
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.21		ug/L	102	56 - 132	43 - 145	
1,1,2-Trichloroethane	10.0	9.760		ug/L	98	80 - 121	73 - 128	
1,1-Dichloroethane	10.0	10.50		ug/L	105	80 - 120	73 - 127	
1,1-Dichloroethene	10.0	9.843		ug/L	98	80 - 126	72 - 134	
1,1-Dichloropropene	10.0	9.192		ug/L	92	72 - 122	64 - 130	
1,2,3-Trichlorobenzene	10.0	9.799		ug/L	98	80 - 125	73 - 133	
1,2,3-Trichloropropane	10.0	8.288		ug/L	83	75 - 127	66 - 136	
1,2,4-Trichlorobenzene	10.0	9.351		ug/L	94	80 - 124	73 - 131	
1,2,4-Trimethylbenzene	10.0	10.89		ug/L	109	80 - 128	72 - 136	
1,2-Dibromo-3-Chloropropane	10.0	7.248		ug/L	72	63 - 123	53 - 133	
1,2-Dibromoethane	10.0	9.649		ug/L	96	80 - 125	73 - 133	
1,2-Dichlorobenzene	10.0	10.54		ug/L	105	80 - 120	73 - 127	
1,2-Dichloroethane	10.0	9.976		ug/L	100	76 - 130	67 - 139	
1,2-Dichloropropane	10.0	10.20		ug/L	102	74 - 124	66 - 132	
1,3,5-Trimethylbenzene	10.0	10.33		ug/L	103	80 - 122	73 - 129	
1,3-Dichlorobenzene	10.0	10.69		ug/L	107	80 - 120	73 - 127	
1,3-Dichloropropane	10.0	9.686		ug/L	97	80 - 121	73 - 128	
1,4-Dichlorobenzene	10.0	10.33		ug/L	103	80 - 120	73 - 127	
2,2-Dichloropropane	10.0	10.03		ug/L	100	79 - 131	70 - 140	
2-Butanone	10.0	10.23		ug/L	102	48 - 145	32 - 161	
2-Chlorotoluene	10.0	10.55		ug/L	106	80 - 120	73 - 127	
2-Hexanone	10.0	7.148		ug/L	71	50 - 149	34 - 166	
4-Chlorotoluene	10.0	10.36		ug/L	104	80 - 120	73 - 127	
4-Methyl-2-pentanone	10.0	7.474		ug/L	75	63 - 120	54 - 130	
Acetone	10.0	8.509		ug/L	85	45 - 139	29 - 155	
Benzene	10.0	10.29		ug/L	103	80 - 120	73 - 127	
Bromobenzene	10.0	10.73		ug/L	107	80 - 125	73 - 133	
Bromochloromethane	10.0	8.851		ug/L	89	80 - 120	73 - 127	
Bromodichloromethane	10.0	9.749		ug/L	97	73 - 131	63 - 141	
Bromoform	10.0	9.318		ug/L	93	76 - 124	68 - 132	
Bromomethane	10.0	8.942		ug/L	89	26 - 180	1 - 206	
cis-1,2-Dichloroethene	10.0	9.839		ug/L	98	80 - 120	73 - 127	
cis-1,3-Dichloropropene	10.0	8.573		ug/L	86	76 - 123	68 - 131	
Carbon disulfide	10.0	8.832		ug/L	88	75 - 123	67 - 131	
Carbon tetrachloride	10.0	9.397		ug/L	94	61 - 139	48 - 152	
Chlorobenzene	10.0	10.49		ug/L	105	80 - 120	73 - 127	
Chloroethane	10.0	10.80		ug/L	108	54 - 150	38 - 166	
Chloroform	10.0	9.873		ug/L	99	80 - 120	73 - 127	
Chloromethane	10.0	21.22	*+	ug/L	212	28 - 151	8 - 172	X
Dibromochloromethane	10.0	10.20		ug/L	102	74 - 136	64 - 146	
Dibromomethane	10.0	9.824		ug/L	98	80 - 122	73 - 129	
Dichlorodifluoromethane	10.0	12.58		ug/L	126	27 - 154	6 - 175	
Ethylbenzene	10.0	10.61		ug/L	106	80 - 126	72 - 134	
Isopropylbenzene	10.0	10.10		ug/L	101	80 - 120	73 - 127	
Methylene Chloride	10.0	8.810		ug/L	88	80 - 120	73 - 127	
Methyl-t-Butyl Ether (MTBE)	10.0	9.804		ug/L	98	69 - 128	59 - 138	

Eurofins Calscience

Marginal Exceedance (ME) Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-255691/3

Matrix: Water

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	%Rec	%Rec. Limits	ME %Rec. Limits	Marginal Exceedance Status
Naphthalene	10.0	7.392		ug/L	74	70 - 130	60 - 140	
n-Butylbenzene	10.0	9.659		ug/L	97	78 - 127	70 - 135	
N-Propylbenzene	10.0	10.99		ug/L	110	80 - 121	73 - 128	
o-Xylene	10.0	10.62		ug/L	106	80 - 124	73 - 131	
m,p-Xylene	20.0	21.91		ug/L	110	80 - 123	73 - 130	
p-Isopropyltoluene	10.0	10.16		ug/L	102	80 - 128	72 - 136	
sec-Butylbenzene	10.0	10.24		ug/L	102	80 - 125	73 - 133	
Styrene	10.0	10.13		ug/L	101	80 - 121	73 - 128	
trans-1,2-Dichloroethene	10.0	11.48		ug/L	115	79 - 120	72 - 127	
trans-1,3-Dichloropropene	10.0	8.695		ug/L	87	80 - 126	72 - 134	
tert-Butylbenzene	10.0	10.24		ug/L	102	80 - 121	73 - 128	
Tetrachloroethene	10.0	11.47		ug/L	115	80 - 125	73 - 133	
Toluene	10.0	10.01		ug/L	100	80 - 120	73 - 127	
Trichloroethene	10.0	10.12		ug/L	101	77 - 124	69 - 132	
Trichlorofluoromethane	10.0	11.05		ug/L	110	41 - 163	21 - 183	
Vinyl acetate	10.0	9.326		ug/L	93	61 - 126	50 - 137	
Vinyl chloride	10.0	11.44		ug/L	114	50 - 160	32 - 178	

Summary

Number of Analytes Reported	Number of Marginal Exceedances Allowed	Number of Marginal Exceedances Found
66	3	0

X = % Recovery is greater than widest possible limit

Lab Sample ID: LCSD 570-255691/4

Matrix: Water

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	%Rec	%Rec. Limits	ME %Rec. Limits	Marginal Exceedance Status
1,1,1,2-Tetrachloroethane	10.0	10.16		ug/L	102	80 - 125	73 - 133	
1,1,1-Trichloroethane	10.0	10.09		ug/L	101	75 - 121	67 - 129	
1,1,2,2-Tetrachloroethane	10.0	9.833		ug/L	98	80 - 120	73 - 127	
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.857		ug/L	99	56 - 132	43 - 145	
1,1,2-Trichloroethane	10.0	10.26		ug/L	103	80 - 121	73 - 128	
1,1-Dichloroethane	10.0	9.942		ug/L	99	80 - 120	73 - 127	
1,1-Dichloroethene	10.0	9.463		ug/L	95	80 - 126	72 - 134	
1,1-Dichloropropene	10.0	9.676		ug/L	97	72 - 122	64 - 130	
1,2,3-Trichlorobenzene	10.0	10.22		ug/L	102	80 - 125	73 - 133	
1,2,3-Trichloropropane	10.0	8.857		ug/L	89	75 - 127	66 - 136	
1,2,4-Trichlorobenzene	10.0	9.684		ug/L	97	80 - 124	73 - 131	
1,2,4-Trimethylbenzene	10.0	10.64		ug/L	106	80 - 128	72 - 136	
1,2-Dibromo-3-Chloropropane	10.0	7.949		ug/L	79	63 - 123	53 - 133	
1,2-Dibromoethane	10.0	10.52		ug/L	105	80 - 125	73 - 133	
1,2-Dichlorobenzene	10.0	10.62		ug/L	106	80 - 120	73 - 127	
1,2-Dichloroethane	10.0	10.10		ug/L	101	76 - 130	67 - 139	
1,2-Dichloropropane	10.0	10.41		ug/L	104	74 - 124	66 - 132	
1,3,5-Trimethylbenzene	10.0	10.37		ug/L	104	80 - 122	73 - 129	
1,3-Dichlorobenzene	10.0	10.61		ug/L	106	80 - 120	73 - 127	
1,3-Dichloropropane	10.0	9.971		ug/L	100	80 - 121	73 - 128	
1,4-Dichlorobenzene	10.0	10.25		ug/L	103	80 - 120	73 - 127	

Eurofins Calscience

Marginal Exceedance (ME) Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-255691/4
Matrix: Water

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	%Rec	%Rec. Limits	ME %Rec. Limits	Marginal Exceedance Status
2,2-Dichloropropane	10.0	9.847		ug/L	98	79 - 131	70 - 140	
2-Butanone	10.0	10.65		ug/L	106	48 - 145	32 - 161	
2-Chlorotoluene	10.0	10.45		ug/L	104	80 - 120	73 - 127	
2-Hexanone	10.0	8.338		ug/L	83	50 - 149	34 - 166	
4-Chlorotoluene	10.0	10.06		ug/L	101	80 - 120	73 - 127	
4-Methyl-2-pentanone	10.0	9.131		ug/L	91	63 - 120	54 - 130	
Acetone	10.0	8.043		ug/L	80	45 - 139	29 - 155	
Benzene	10.0	10.37		ug/L	104	80 - 120	73 - 127	
Bromobenzene	10.0	10.85		ug/L	108	80 - 125	73 - 133	
Bromochloromethane	10.0	8.955		ug/L	90	80 - 120	73 - 127	
Bromodichloromethane	10.0	10.16		ug/L	102	73 - 131	63 - 141	
Bromoform	10.0	9.476		ug/L	95	76 - 124	68 - 132	
Bromomethane	10.0	8.206		ug/L	82	26 - 180	1 - 206	
cis-1,2-Dichloroethene	10.0	10.18		ug/L	102	80 - 120	73 - 127	
cis-1,3-Dichloropropene	10.0	9.113		ug/L	91	76 - 123	68 - 131	
Carbon disulfide	10.0	8.775		ug/L	88	75 - 123	67 - 131	
Carbon tetrachloride	10.0	9.586		ug/L	96	61 - 139	48 - 152	
Chlorobenzene	10.0	10.28		ug/L	103	80 - 120	73 - 127	
Chloroethane	10.0	9.437		ug/L	94	54 - 150	38 - 166	
Chloroform	10.0	10.12		ug/L	101	80 - 120	73 - 127	
Chloromethane	10.0	19.14	*+	ug/L	191	28 - 151	8 - 172	X
Dibromochloromethane	10.0	10.56		ug/L	106	74 - 136	64 - 146	
Dibromomethane	10.0	10.40		ug/L	104	80 - 122	73 - 129	
Dichlorodifluoromethane	10.0	10.60		ug/L	106	27 - 154	6 - 175	
Ethylbenzene	10.0	10.53		ug/L	105	80 - 126	72 - 134	
Isopropylbenzene	10.0	10.07		ug/L	101	80 - 120	73 - 127	
Methylene Chloride	10.0	9.164		ug/L	92	80 - 120	73 - 127	
Methyl-t-Butyl Ether (MTBE)	10.0	8.975		ug/L	90	69 - 128	59 - 138	
Naphthalene	10.0	8.185		ug/L	82	70 - 130	60 - 140	
n-Butylbenzene	10.0	9.365		ug/L	94	78 - 127	70 - 135	
N-Propylbenzene	10.0	11.03		ug/L	110	80 - 121	73 - 128	
o-Xylene	10.0	10.55		ug/L	105	80 - 124	73 - 131	
m,p-Xylene	20.0	21.82		ug/L	109	80 - 123	73 - 130	
p-Isopropyltoluene	10.0	9.897		ug/L	99	80 - 128	72 - 136	
sec-Butylbenzene	10.0	9.920		ug/L	99	80 - 125	73 - 133	
Styrene	10.0	10.38		ug/L	104	80 - 121	73 - 128	
trans-1,2-Dichloroethene	10.0	9.997		ug/L	100	79 - 120	72 - 127	
trans-1,3-Dichloropropene	10.0	8.971		ug/L	90	80 - 126	72 - 134	
tert-Butylbenzene	10.0	10.07		ug/L	101	80 - 121	73 - 128	
Tetrachloroethene	10.0	11.00		ug/L	110	80 - 125	73 - 133	
Toluene	10.0	10.48		ug/L	105	80 - 120	73 - 127	
Trichloroethene	10.0	10.08		ug/L	101	77 - 124	69 - 132	
Trichlorofluoromethane	10.0	10.16		ug/L	102	41 - 163	21 - 183	
Vinyl acetate	10.0	11.57		ug/L	116	61 - 126	50 - 137	
Vinyl chloride	10.0	10.04		ug/L	100	50 - 160	32 - 178	

Summary

Number of Analytes Reported	Number of Marginal Exceedances Allowed	Number of Marginal Exceedances Found
66	3	0

Eurofins Calscience

Marginal Exceedance (ME) Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

X = % Recovery is greater than widest possible limit

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QC Association Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

GC/MS VOA

Analysis Batch: 255691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105371-1	TB-080422B	Total/NA	Water	8260B	
570-105371-2	MW-36	Total/NA	Water	8260B	
MB 570-255691/6	Method Blank	Total/NA	Water	8260B	
LCS 570-255691/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-255691/4	Lab Control Sample Dup	Total/NA	Water	8260B	
570-105187-A-1 MS	Matrix Spike	Total/NA	Water	8260B	
570-105187-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 256132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105371-2	MW-36	Total/NA	Water	3510C	
LCS 570-256132/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-256132/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-105371-2 MS	MW-36	Total/NA	Water	3510C	
570-105371-2 MSD	MW-36	Total/NA	Water	3510C	

Analysis Batch: 256416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-105371-2	MW-36	Total/NA	Water	8270C SIM ID	256132
LCS 570-256132/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	256132
LCSD 570-256132/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	256132
570-105371-2 MS	MW-36	Total/NA	Water	8270C SIM ID	256132
570-105371-2 MSD	MW-36	Total/NA	Water	8270C SIM ID	256132

Lab Chronicle

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Client Sample ID: TB-080422B

Lab Sample ID: 570-105371-1

Date Collected: 08/04/22 07:30

Matrix: Water

Date Received: 08/04/22 16:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	255691	08/10/22 16:33	N5PD	EET CAL 4
Instrument ID: GCMSWW										

Client Sample ID: MW-36

Lab Sample ID: 570-105371-2

Date Collected: 08/04/22 11:48

Matrix: Water

Date Received: 08/04/22 16:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	255691	08/10/22 17:02	N5PD	EET CAL 4
Instrument ID: GCMSWW										
Total/NA	Prep	3510C			100 mL	10 mL	256132	08/11/22 14:03	UFLE	EET CAL 4
Total/NA	Analysis	8270C SIM ID		1	1 mL	0 mL	256416	08/12/22 15:56	UJ3K	EET CAL 4
Instrument ID: GCMSDDD										

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Laboratory: Eurofins Calscience

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4175	02-02-23

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Method Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Hargis + Associates, Inc.
Project/Site: Raytheon / 532.30

Job ID: 570-105371-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-105371-1	TB-080422B	Water	08/04/22 07:30	08/04/22 16:30
570-105371-2	MW-36	Water	08/04/22 11:48	08/04/22 16:30

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PROJECT Raytheon Main

TASK NO 532 30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858 455 6500

Fax 858 455 6533

105371

Date 08-04-22
Page 1 of 1

SAMPLED BY		SAMPLE COLLECTION		MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED				Expected Concentration Range (ppb) for VOA's	SPECIAL HANDLING	Laboratory
LAB ID	SAMPLE ID	Date	Time				1,4-Dioxane 8270 MOD	1,4-Dioxane 8270 SIM	VOCs by EPA 8260B	24 hr TAT			
D. Sealee, A Warden				Groundwater	Hydrochloric Acid (HCl)	500ml Amber	250-ml Amber						Eurofins Calscience, Inc. Attn Virendra Patel 2841 Dow Ave, Ste 100 Tustin, CA 92780 714-895-5494 ECI Project #57003509 REMARKS Report J Flags
	TB-080422B	08-04-22	0730			40-ml VOA							
	MW-36		1148	X	X								
				X									
Total number of containers per analysis													Total No. of Containers

Send Results to
Steve Netto
3131 Camino del Rio N
Suite 355
San Diego, CA 92108
Ph 858 455 5400
snetto@hargis.com

No. of containers correct
Received in good condition
Custody seals secure
Conforms to COC document

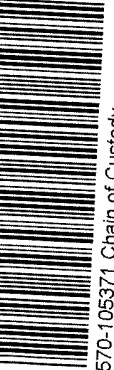
Date / Time 8/4/22 16:30
Date / Time 8/4/22 16:30

Temperature on receipt

2.8/2-8 8C/2

Instructions

- 1 Fill out form completely and sign only after verified for completeness
- 2 Complete in ballpoint pen Draw one line through error, initial and date correction
- 3 Indicate the number of sample containers in analytical request space, indicate choice with ✓ or x
- 4 Note applicable preservatives, special instructions, and deviations from typical environmental samples.
- 5 Consult project QA documents for specific instructions.



570-105371 Chain of Custody

Login Sample Receipt Checklist

Client: Hargis + Associates, Inc.

Job Number: 570-105371-1

Login Number: 105371

List Number: 1

Creator: Lagunas, Jorge L

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
ANALYTICAL RESULTS



June 28, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 2201465

Client Reference : Raytheon Main Gets Monthly Sample / 532.15

Enclosed are the results for sample(s) received on June 02, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Victoria Michel', with a small flourish below it.

Victoria Michel, Project Assistant
Victoria.Michel@atlglobal.com

Authorized to Release on 06/28/22 11:07 on Behalf of

A handwritten signature in black ink, appearing to read 'Amy Leung'.

Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.

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Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-060222	2201465-01	Water	6/02/22 8:00	6/02/22 14:17
CEFF	2201465-02	Groundwater	6/02/22 11:20	6/02/22 14:17
CBT	2201465-03	Groundwater	6/02/22 11:25	6/02/22 14:17
POX	2201465-04	Groundwater	6/02/22 11:30	6/02/22 14:17
PF	2201465-05	Groundwater	6/02/22 11:35	6/02/22 14:17
INF	2201465-06	Groundwater	6/02/22 11:40	6/02/22 14:17
EW-02	2201465-07	Groundwater	6/02/22 12:15	6/02/22 14:17
MW-29	2201465-08	Groundwater	6/02/22 12:30	6/02/22 14:17



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Report To : Steve Netto

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Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
H2	Holding time for preparation or analysis exceeded.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyte: Residue, Suspended

Analyst: LN

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2201465-05	PF	ND	mg/L	10	1	B2F0993	06/10/2022	06/10/22 14:23	H2



Certificate of Analysis

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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: TB-060222

Lab ID: 2201465-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,1,1-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,1,2-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,1-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,1-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,1-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2,3-Trichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2-Dibromoethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,3-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,3-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
1,4-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
2,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
2-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
4-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
4-Isopropyltoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Benzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Bromobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Bromodichloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Bromoform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Bromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Carbon tetrachloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Chlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Chloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Chloroform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Chloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
cis-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
cis-1,3-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Dibromochloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Dibromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Dichlorodifluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: TB-060222

Lab ID: 2201465-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Hexachlorobutadiene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Isopropylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
m,p-Xylene	ND	1.0	1	B2F0887	06/06/2022	06/06/22 12:21	
Methylene chloride	ND	1.0	1	B2F0887	06/06/2022	06/06/22 12:21	
n-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
n-Propylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Naphthalene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
o-Xylene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
sec-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Styrene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
tert-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Tetrachloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Toluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
trans-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Trichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Trichlorofluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
Vinyl chloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:21	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>117 %</i>	<i>64 - 155</i>		B2F0887	06/06/2022	<i>06/06/22 12:21</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.0 %</i>	<i>73 - 124</i>		B2F0887	06/06/2022	<i>06/06/22 12:21</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>78 - 129</i>		B2F0887	06/06/2022	<i>06/06/22 12:21</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>		B2F0887	06/06/2022	<i>06/06/22 12:21</i>	



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3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: CEFF

Lab ID: 2201465-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,1,1-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,1,2-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,1-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,1-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,1-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2,3-Trichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2,3-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2,4-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2,4-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2-Dibromoethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,3,5-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,3-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,3-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
1,4-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
2,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
2-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
4-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
4-Isopropyltoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Benzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Bromobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Bromodichloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Bromoform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Bromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Carbon tetrachloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Chlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Chloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Chloroform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Chloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
cis-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
cis-1,3-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Dibromochloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Dibromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Dichlorodifluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: CEFF

Lab ID: 2201465-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Hexachlorobutadiene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Isopropylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
m,p-Xylene	ND	1.0	1	B2F0887	06/06/2022	06/06/22 12:47	
Methylene chloride	ND	1.0	1	B2F0887	06/06/2022	06/06/22 12:47	
n-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
n-Propylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Naphthalene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
o-Xylene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
sec-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Styrene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
tert-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Tetrachloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Toluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
trans-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Trichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Trichlorofluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Vinyl chloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 12:47	
Surrogate: 1,2-Dichloroethane-d4	119 %	64 - 155		B2F0887	06/06/2022	06/06/22 12:47	
Surrogate: 4-Bromofluorobenzene	110 %	73 - 124		B2F0887	06/06/2022	06/06/22 12:47	
Surrogate: Dibromofluoromethane	111 %	78 - 129		B2F0887	06/06/2022	06/06/22 12:47	
Surrogate: Toluene-d8	100 %	84 - 117		B2F0887	06/06/2022	06/06/22 12:47	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2F0866	06/03/2022	06/06/22 18:54	
Surrogate: 1,2-Dichlorobenzene-d4	103 %	13 - 99		B2F0866	06/03/2022	06/06/22 18:54	S12
Surrogate: 2-Fluorobiphenyl	99.0 %	8 - 111		B2F0866	06/03/2022	06/06/22 18:54	
Surrogate: 4-Terphenyl-d14	122 %	12 - 113		B2F0866	06/03/2022	06/06/22 18:54	S12
Surrogate: Nitrobenzene-d5	87.0 %	15 - 121		B2F0866	06/03/2022	06/06/22 18:54	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: CBT

Lab ID: 2201465-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,1,1-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,1,2-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,1-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,1-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,1-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2,3-Trichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2,3-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2,4-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2,4-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2-Dibromoethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,3,5-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,3-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,3-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
1,4-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
2,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
2-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
4-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
4-Isopropyltoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Benzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Bromobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Bromodichloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Bromoform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Bromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Carbon tetrachloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Chlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Chloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Chloroform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Chloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
cis-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
cis-1,3-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Dibromochloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Dibromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Dichlorodifluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: CBT

Lab ID: 2201465-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Hexachlorobutadiene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Isopropylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
m,p-Xylene	ND	1.0	1	B2F0887	06/06/2022	06/06/22 13:13	
Methylene chloride	ND	1.0	1	B2F0887	06/06/2022	06/06/22 13:13	
n-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
n-Propylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Naphthalene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
o-Xylene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
sec-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Styrene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
tert-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Tetrachloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Toluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
trans-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Trichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Trichlorofluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Vinyl chloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:13	
Surrogate: 1,2-Dichloroethane-d4	115 %	64 - 155		B2F0887	06/06/2022	06/06/22 13:13	
Surrogate: 4-Bromofluorobenzene	109 %	73 - 124		B2F0887	06/06/2022	06/06/22 13:13	
Surrogate: Dibromofluoromethane	108 %	78 - 129		B2F0887	06/06/2022	06/06/22 13:13	
Surrogate: Toluene-d8	104 %	84 - 117		B2F0887	06/06/2022	06/06/22 13:13	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2F0866	06/03/2022	06/06/22 19:21	
Surrogate: 1,2-Dichlorobenzene-d4	103 %	13 - 99		B2F0866	06/03/2022	06/06/22 19:21	S12
Surrogate: 2-Fluorobiphenyl	97.5 %	8 - 111		B2F0866	06/03/2022	06/06/22 19:21	
Surrogate: 4-Terphenyl-d14	116 %	12 - 113		B2F0866	06/03/2022	06/06/22 19:21	S12
Surrogate: Nitrobenzene-d5	93.3 %	15 - 121		B2F0866	06/03/2022	06/06/22 19:21	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: POX

Lab ID: 2201465-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,1,1-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,1,2-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,1-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,1-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,1-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2,3-Trichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2,3-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2,4-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2,4-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2-Dibromoethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,3,5-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,3-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,3-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
1,4-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
2,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
2-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
4-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
4-Isopropyltoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Benzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Bromobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Bromodichloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Bromoform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Bromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Carbon tetrachloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Chlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Chloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Chloroform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Chloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
cis-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
cis-1,3-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Dibromochloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Dibromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Dichlorodifluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: POX

Lab ID: 2201465-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Hexachlorobutadiene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Isopropylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
m,p-Xylene	ND	1.0	1	B2F0887	06/06/2022	06/06/22 13:39	
Methylene chloride	ND	1.0	1	B2F0887	06/06/2022	06/06/22 13:39	
n-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
n-Propylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Naphthalene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
o-Xylene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
sec-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Styrene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
tert-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Tetrachloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Toluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
trans-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Trichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Trichlorofluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Vinyl chloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 13:39	
Surrogate: 1,2-Dichloroethane-d4	118 %	64 - 155		B2F0887	06/06/2022	06/06/22 13:39	
Surrogate: 4-Bromofluorobenzene	103 %	73 - 124		B2F0887	06/06/2022	06/06/22 13:39	
Surrogate: Dibromofluoromethane	108 %	78 - 129		B2F0887	06/06/2022	06/06/22 13:39	
Surrogate: Toluene-d8	105 %	84 - 117		B2F0887	06/06/2022	06/06/22 13:39	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2F0866	06/03/2022	06/06/22 19:49	
Surrogate: 1,2-Dichlorobenzene-d4	104 %	13 - 99		B2F0866	06/03/2022	06/06/22 19:49	S12
Surrogate: 2-Fluorobiphenyl	99.1 %	8 - 111		B2F0866	06/03/2022	06/06/22 19:49	
Surrogate: 4-Terphenyl-d14	116 %	12 - 113		B2F0866	06/03/2022	06/06/22 19:49	S12
Surrogate: Nitrobenzene-d5	94.6 %	15 - 121		B2F0866	06/03/2022	06/06/22 19:49	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: INF

Lab ID: 2201465-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,1,1-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,1,2-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,1-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,1-Dichloroethene	46	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,1-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2,3-Trichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2,3-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2,4-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2,4-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2-Dibromoethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,3,5-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,3-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,3-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
1,4-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
2,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
2-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
4-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
4-Isopropyltoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Benzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Bromobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Bromodichloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Bromoform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Bromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Carbon tetrachloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Chlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Chloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Chloroform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Chloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
cis-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
cis-1,3-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Dibromochloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Dibromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Dichlorodifluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: INF

Lab ID: 2201465-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Hexachlorobutadiene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Isopropylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
m,p-Xylene	ND	1.0	1	B2F0887	06/06/2022	06/06/22 14:05	
Methylene chloride	ND	1.0	1	B2F0887	06/06/2022	06/06/22 14:05	
n-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
n-Propylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Naphthalene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
o-Xylene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
sec-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Styrene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
tert-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Tetrachloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Toluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
trans-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Trichloroethene	0.52	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Trichlorofluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
Vinyl chloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:05	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>116 %</i>	<i>64 - 155</i>		B2F0887	06/06/2022	<i>06/06/22 14:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>	<i>73 - 124</i>		B2F0887	06/06/2022	<i>06/06/22 14:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>78 - 129</i>		B2F0887	06/06/2022	<i>06/06/22 14:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>84 - 117</i>		B2F0887	06/06/2022	<i>06/06/22 14:05</i>	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	21	2.0	1	B2F0897	06/06/2022	06/06/22 15:18	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>98.4 %</i>	<i>17 - 119</i>		B2F0897	06/06/2022	<i>06/06/22 15:18</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>88.9 %</i>	<i>10 - 133</i>		B2F0897	06/06/2022	<i>06/06/22 15:18</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>87.6 %</i>	<i>5 - 139</i>		B2F0897	06/06/2022	<i>06/06/22 15:18</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>102 %</i>	<i>13 - 150</i>		B2F0897	06/06/2022	<i>06/06/22 15:18</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: EW-02

Lab ID: 2201465-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,1,1-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,1,2-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,1-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,1-Dichloroethene	11	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,1-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2,3-Trichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2,3-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2,4-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2,4-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2-Dibromoethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,3,5-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,3-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,3-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
1,4-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
2,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
2-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
4-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
4-Isopropyltoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Benzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Bromobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Bromodichloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Bromoform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Bromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Carbon tetrachloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Chlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Chloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Chloroform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Chloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
cis-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
cis-1,3-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Dibromochloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Dibromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Dichlorodifluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: EW-02

Lab ID: 2201465-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Hexachlorobutadiene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Isopropylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
m,p-Xylene	ND	1.0	1	B2F0887	06/06/2022	06/06/22 14:30	
Methylene chloride	ND	1.0	1	B2F0887	06/06/2022	06/06/22 14:30	
n-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
n-Propylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Naphthalene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
o-Xylene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
sec-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Styrene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
tert-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Tetrachloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Toluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
trans-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Trichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Trichlorofluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Vinyl chloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:30	
Surrogate: 1,2-Dichloroethane-d4	118 %	64 - 155		B2F0887	06/06/2022	06/06/22 14:30	
Surrogate: 4-Bromofluorobenzene	102 %	73 - 124		B2F0887	06/06/2022	06/06/22 14:30	
Surrogate: Dibromofluoromethane	106 %	78 - 129		B2F0887	06/06/2022	06/06/22 14:30	
Surrogate: Toluene-d8	95.1 %	84 - 117		B2F0887	06/06/2022	06/06/22 14:30	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	2.0	1	B2F0897	06/06/2022	06/06/22 15:45	
Surrogate: 1,2-Dichlorobenzene-d4	96.6 %	17 - 119		B2F0897	06/06/2022	06/06/22 15:45	
Surrogate: 2-Fluorobiphenyl	85.9 %	10 - 133		B2F0897	06/06/2022	06/06/22 15:45	
Surrogate: 4-Terphenyl-d14	87.1 %	5 - 139		B2F0897	06/06/2022	06/06/22 15:45	
Surrogate: Nitrobenzene-d5	103 %	13 - 150		B2F0897	06/06/2022	06/06/22 15:45	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: MW-29

Lab ID: 2201465-08

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,1,1-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,1,2-Trichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,1-Dichloroethane	1.2	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,1-Dichloroethene	150	5.0	10	B2F0887	06/06/2022	06/06/22 15:22	
1,1-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2,3-Trichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2,3-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2,4-Trichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2,4-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2-Dibromoethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2-Dichloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,3,5-Trimethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,3-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,3-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
1,4-Dichlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
2,2-Dichloropropane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
2-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
4-Chlorotoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
4-Isopropyltoluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Benzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Bromobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Bromodichloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Bromoform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Bromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Carbon tetrachloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Chlorobenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Chloroethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Chloroform	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Chloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
cis-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
cis-1,3-Dichloropropene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Dibromochloromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Dibromomethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Dichlorodifluoromethane	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Client Sample ID: MW-29

Lab ID: 2201465-08

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Hexachlorobutadiene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Isopropylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
m,p-Xylene	ND	1.0	1	B2F0887	06/06/2022	06/06/22 14:56	
Methylene chloride	ND	1.0	1	B2F0887	06/06/2022	06/06/22 14:56	
n-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
n-Propylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Naphthalene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
o-Xylene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
sec-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Styrene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
tert-Butylbenzene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Tetrachloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Toluene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
trans-1,2-Dichloroethene	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Trichloroethene	0.96	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Trichlorofluoromethane	0.67	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
Vinyl chloride	ND	0.50	1	B2F0887	06/06/2022	06/06/22 14:56	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>119 %</i>	<i>64 - 155</i>		B2F0887	06/06/2022	06/06/22 14:56	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>118 %</i>	<i>64 - 155</i>		B2F0887	06/06/2022	06/06/22 15:22	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>	<i>73 - 124</i>		B2F0887	06/06/2022	06/06/22 14:56	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>109 %</i>	<i>73 - 124</i>		B2F0887	06/06/2022	06/06/22 15:22	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>78 - 129</i>		B2F0887	06/06/2022	06/06/22 14:56	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>78 - 129</i>		B2F0887	06/06/2022	06/06/22 15:22	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>		B2F0887	06/06/2022	06/06/22 14:56	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>		B2F0887	06/06/2022	06/06/22 15:22	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	70	2.0	1	B2F0897	06/06/2022	06/06/22 16:12	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>95.9 %</i>	<i>17 - 119</i>		B2F0897	06/06/2022	06/06/22 16:12	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>88.6 %</i>	<i>10 - 133</i>		B2F0897	06/06/2022	06/06/22 16:12	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>88.4 %</i>	<i>5 - 139</i>		B2F0897	06/06/2022	06/06/22 16:12	
<i>Surrogate: Nitrobenzene-d5</i>	<i>101 %</i>	<i>13 - 150</i>		B2F0897	06/06/2022	06/06/22 16:12	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

QUALITY CONTROL SECTION

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B2F0993 - No_Prep_WC1_W

Blank (B2F0993-BLK1)

Prepared: 6/10/2022 Analyzed: 6/10/2022

Residue, Suspended ND 10 10

LCS (B2F0993-BS1)

Prepared: 6/10/2022 Analyzed: 6/10/2022

Residue, Suspended 80.0000 10 10 100.000 80.0 80 - 120

Duplicate (B2F0993-DUP1)

Source: 2201355-01

Prepared: 6/10/2022 Analyzed: 6/10/2022

Residue, Suspended 137.000 10 10 134.000 2.21 10



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F0887 - MSVOA_LL_W

Blank (B2F0887-BLK1)

Prepared: 6/6/2022 Analyzed: 6/6/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F0887 - MSVOA_LL_W (continued)

Blank (B2F0887-BLK1) - Continued

Prepared: 6/6/2022 Analyzed: 6/6/2022

n-Butylbenzene	ND	0.50	0.11
n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	26.72		25.0000	107	64 - 155
Surrogate: 4-Bromofluorobenzene	24.43		25.0000	97.7	73 - 124
Surrogate: Dibromofluoromethane	25.47		25.0000	102	78 - 129
Surrogate: Toluene-d8	23.13		25.0000	92.5	84 - 117

LCS (B2F0887-BS1)

Prepared: 6/6/2022 Analyzed: 6/6/2022

1,1,1,2-Tetrachloroethane	17.6300	0.50	0.11	20.0000	88.2	79 - 116
1,1,1-Trichloroethane	19.3700	0.50	0.21	20.0000	96.8	73 - 130
1,1,2,2-Tetrachloroethane	18.3000	0.50	0.36	20.0000	91.5	71 - 122
1,1,2-Trichloroethane	20.2400	0.50	0.25	20.0000	101	70 - 124
1,1-Dichloroethane	17.8900	0.50	0.09	20.0000	89.4	69 - 128
1,1-Dichloroethene	17.3200	0.50	0.13	20.0000	86.6	65 - 137
1,1-Dichloropropene	16.6100	0.50	0.13	20.0000	83.0	74 - 129
1,2,3-Trichloropropane	18.7500	0.50	0.39	20.0000	93.8	74 - 123
1,2,3-Trichlorobenzene	17.0900	0.50	0.18	20.0000	85.4	59 - 130
1,2,4-Trichlorobenzene	17.9100	0.50	0.16	20.0000	89.6	65 - 125
1,2,4-Trimethylbenzene	18.8700	0.50	0.14	20.0000	94.4	88 - 124
1,2-Dibromo-3-chloropropane	17.2000	0.50	0.41	20.0000	86.0	61 - 127
1,2-Dibromoethane	19.7800	0.50	0.24	20.0000	98.9	72 - 125
1,2-Dichlorobenzene	16.9800	0.50	0.20	20.0000	84.9	84 - 113
1,2-Dichloroethane	20.1900	0.50	0.20	20.0000	101	68 - 130
1,2-Dichloropropane	18.6300	0.50	0.15	20.0000	93.2	77 - 121
1,3,5-Trimethylbenzene	18.9400	0.50	0.13	20.0000	94.7	83 - 124
1,3-Dichlorobenzene	16.6600	0.50	0.16	20.0000	83.3	83 - 112
1,3-Dichloropropane	18.4400	0.50	0.21	20.0000	92.2	77 - 119
1,4-Dichlorobenzene	16.8500	0.50	0.17	20.0000	84.2	79 - 115
2,2-Dichloropropane	18.3400	0.50	0.38	20.0000	91.7	67 - 149
2-Chlorotoluene	18.0500	0.50	0.11	20.0000	90.2	81 - 119
4-Chlorotoluene	19.4100	0.50	0.12	20.0000	97.0	86 - 117
4-Isopropyltoluene	17.7400	0.50	0.11	20.0000	88.7	82 - 131
Benzene	18.2600	0.50	0.13	20.0000	91.3	75 - 124



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F0887 - MSVOA_LL_W (continued)

LCS (B2F0887-BS1) - Continued

Prepared: 6/6/2022 Analyzed: 6/6/2022

Bromobenzene	18.3800	0.50	0.21	20.0000	91.9	82 - 108			
Bromodichloromethane	19.3000	0.50	0.14	20.0000	96.5	80 - 120			
Bromoform	16.0100	0.50	0.20	20.0000	80.0	70 - 123			
Bromomethane	20.2000	0.50	0.40	20.0000	101	44 - 151			
Carbon tetrachloride	20.0900	0.50	0.09	20.0000	100	62 - 140			
Chlorobenzene	16.8000	0.50	0.13	20.0000	84.0	80 - 112			
Chloroethane	19.8600	0.50	0.15	20.0000	99.3	42 - 167			
Chloroform	18.8000	0.50	0.11	20.0000	94.0	77 - 122			
Chloromethane	19.5100	0.50	0.12	20.0000	97.6	33 - 153			
cis-1,2-Dichloroethene	13.2700	0.50	0.14	20.0000	66.4	75 - 121			L4
cis-1,3-Dichloropropene	18.6000	0.50	0.13	20.0000	93.0	73 - 127			
Dibromochloromethane	18.8400	0.50	0.16	20.0000	94.2	77 - 122			
Dibromomethane	19.6500	0.50	0.19	20.0000	98.2	75 - 121			
Dichlorodifluoromethane	26.7700	0.50	0.18	20.0000	134	0 - 171			
Ethylbenzene	18.4900	0.50	0.13	20.0000	92.4	82 - 119			
Hexachlorobutadiene	17.6400	0.50	0.15	20.0000	88.2	71 - 131			
Isopropylbenzene	19.2600	0.50	0.10	20.0000	96.3	75 - 126			
m,p-Xylene	35.9300	1.0	0.19	40.0000	89.8	86 - 119			
Methylene chloride	17.9600	1.0	0.71	20.0000	89.8	76 - 125			
n-Butylbenzene	17.9000	0.50	0.11	20.0000	89.5	81 - 125			
n-Propylbenzene	18.8400	0.50	0.10	20.0000	94.2	78 - 130			
Naphthalene	18.1000	0.50	0.41	20.0000	90.5	47 - 128			
o-Xylene	18.4700	0.50	0.13	20.0000	92.4	85 - 119			
sec-Butylbenzene	18.5300	0.50	0.09	20.0000	92.6	78 - 130			
Styrene	17.8200	0.50	0.13	20.0000	89.1	62 - 148			
tert-Butylbenzene	18.1600	0.50	0.09	20.0000	90.8	77 - 125			
Tetrachloroethene	19.3900	0.50	0.10	20.0000	97.0	73 - 120			
Toluene	21.1100	0.50	0.12	20.0000	106	79 - 119			
trans-1,2-Dichloroethene	21.9700	0.50	0.09	20.0000	110	70 - 129			
Trichloroethene	17.8100	0.50	0.10	20.0000	89.0	73 - 117			
Trichlorofluoromethane	22.2500	0.50	0.23	20.0000	111	59 - 135			
Vinyl chloride	21.7900	0.50	0.13	20.0000	109	58 - 132			

Surrogate: 1,2-Dichloroethane-d4

27.41

25.0000

110

64 - 155

Surrogate: 4-Bromofluorobenzene

27.37

25.0000

109

73 - 124

Surrogate: Dibromofluoromethane

24.72

25.0000

98.9

78 - 129

Surrogate: Toluene-d8

28.40

25.0000

114

84 - 117

LCS Dup (B2F0887-BS1)

Prepared: 6/6/2022 Analyzed: 6/6/2022

1,1,1,2-Tetrachloroethane	19.6800	0.50	0.11	20.0000	98.4	79 - 116	11.0	20
1,1,1-Trichloroethane	22.6200	0.50	0.21	20.0000	113	73 - 130	15.5	20
1,1,2,2-Tetrachloroethane	19.4200	0.50	0.36	20.0000	97.1	71 - 122	5.94	20
1,1,2-Trichloroethane	20.4400	0.50	0.25	20.0000	102	70 - 124	0.983	20
1,1-Dichloroethane	20.2800	0.50	0.09	20.0000	101	69 - 128	12.5	20
1,1-Dichloroethene	19.6500	0.50	0.13	20.0000	98.2	65 - 137	12.6	20



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F0887 - MSVOA_LL_W (continued)

LCS Dup (B2F0887-BSD1) - Continued

Prepared: 6/6/2022 Analyzed: 6/6/2022

1,1-Dichloropropene	20.0300	0.50	0.13	20.0000		100	74 - 129	18.7	20	
1,2,3-Trichloropropane	19.0200	0.50	0.39	20.0000		95.1	74 - 123	1.43	20	
1,2,3-Trichlorobenzene	16.5700	0.50	0.18	20.0000		82.8	59 - 130	3.09	20	
1,2,4-Trichlorobenzene	17.4100	0.50	0.16	20.0000		87.0	65 - 125	2.83	20	
1,2,4-Trimethylbenzene	19.5800	0.50	0.14	20.0000		97.9	88 - 124	3.69	20	
1,2-Dibromo-3-chloropropane	17.3800	0.50	0.41	20.0000		86.9	61 - 127	1.04	20	
1,2-Dibromoethane	21.0500	0.50	0.24	20.0000		105	72 - 125	6.22	20	
1,2-Dichlorobenzene	17.7600	0.50	0.20	20.0000		88.8	84 - 113	4.49	20	
1,2-Dichloroethane	22.1700	0.50	0.20	20.0000		111	68 - 130	9.35	20	
1,2-Dichloropropane	20.5400	0.50	0.15	20.0000		103	77 - 121	9.75	20	
1,3,5-Trimethylbenzene	19.0000	0.50	0.13	20.0000		95.0	83 - 124	0.316	20	
1,3-Dichlorobenzene	17.8200	0.50	0.16	20.0000		89.1	83 - 112	6.73	20	
1,3-Dichloropropane	20.3500	0.50	0.21	20.0000		102	77 - 119	9.85	20	
1,4-Dichlorobenzene	17.7900	0.50	0.17	20.0000		89.0	79 - 115	5.43	20	
2,2-Dichloropropane	19.6600	0.50	0.38	20.0000		98.3	67 - 149	6.95	20	
2-Chlorotoluene	19.0900	0.50	0.11	20.0000		95.4	81 - 119	5.60	20	
4-Chlorotoluene	20.0200	0.50	0.12	20.0000		100	86 - 117	3.09	20	
4-Isopropyltoluene	18.7000	0.50	0.11	20.0000		93.5	82 - 131	5.27	20	
Benzene	19.6700	0.50	0.13	20.0000		98.4	75 - 124	7.43	20	
Bromobenzene	19.8500	0.50	0.21	20.0000		99.2	82 - 108	7.69	20	
Bromodichloromethane	21.0800	0.50	0.14	20.0000		105	80 - 120	8.82	20	
Bromoform	18.9200	0.50	0.20	20.0000		94.6	70 - 123	16.7	20	
Bromomethane	22.8000	0.50	0.40	20.0000		114	44 - 151	12.1	20	
Carbon tetrachloride	22.4700	0.50	0.09	20.0000		112	62 - 140	11.2	20	
Chlorobenzene	19.6000	0.50	0.13	20.0000		98.0	80 - 112	15.4	20	
Chloroethane	24.0600	0.50	0.15	20.0000		120	42 - 167	19.1	20	
Chloroform	22.9500	0.50	0.11	20.0000		115	77 - 122	19.9	20	
Chloromethane	23.2000	0.50	0.12	20.0000		116	33 - 153	17.3	20	
cis-1,2-Dichloroethene	15.1200	0.50	0.14	20.0000		75.6	75 - 121	13.0	20	
cis-1,3-Dichloropropene	20.4200	0.50	0.13	20.0000		102	73 - 127	9.33	20	
Dibromochloromethane	20.4900	0.50	0.16	20.0000		102	77 - 122	8.39	20	
Dibromomethane	21.1700	0.50	0.19	20.0000		106	75 - 121	7.45	20	
Dichlorodifluoromethane	31.1300	0.50	0.18	20.0000		156	0 - 171	15.1	20	
Ethylbenzene	21.6500	0.50	0.13	20.0000		108	82 - 119	15.7	20	
Hexachlorobutadiene	18.0900	0.50	0.15	20.0000		90.4	71 - 131	2.52	20	
Isopropylbenzene	20.2300	0.50	0.10	20.0000		101	75 - 126	4.91	20	
m,p-Xylene	40.8300	1.0	0.19	40.0000		102	86 - 119	12.8	20	
Methylene chloride	20.1300	1.0	0.71	20.0000		101	76 - 125	11.4	20	
n-Butylbenzene	19.5500	0.50	0.11	20.0000		97.8	81 - 125	8.81	20	
n-Propylbenzene	20.3700	0.50	0.10	20.0000		102	78 - 130	7.80	20	
Naphthalene	16.9300	0.50	0.41	20.0000		84.6	47 - 128	6.68	20	
o-Xylene	20.9800	0.50	0.13	20.0000		105	85 - 119	12.7	20	
sec-Butylbenzene	20.0200	0.50	0.09	20.0000		100	78 - 130	7.73	20	
Styrene	19.4100	0.50	0.13	20.0000		97.0	62 - 148	8.54	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F0887 - MSVOA_LL_W (continued)

LCS Dup (B2F0887-BSD1) - Continued

Prepared: 6/6/2022 Analyzed: 6/6/2022

tert-Butylbenzene	19.2800	0.50	0.09	20.0000		96.4	77 - 125	5.98	20	
Tetrachloroethene	20.2300	0.50	0.10	20.0000		101	73 - 120	4.24	20	
Toluene	23.5300	0.50	0.12	20.0000		118	79 - 119	10.8	20	
trans-1,2-Dichloroethene	27.5900	0.50	0.09	20.0000		138	70 - 129	22.7	20	L5, R
Trichloroethene	20.9700	0.50	0.10	20.0000		105	73 - 117	16.3	20	
Trichlorofluoromethane	27.8300	0.50	0.23	20.0000		139	59 - 135	22.3	20	L4, R
Vinyl chloride	26.9400	0.50	0.13	20.0000		135	58 - 132	21.1	20	L4, R
Surrogate: 1,2-Dichloroethane-d4	28.60			25.0000		114	64 - 155			
Surrogate: 4-Bromofluorobenzene	28.92			25.0000		116	73 - 124			
Surrogate: Dibromofluoromethane	27.07			25.0000		108	78 - 129			
Surrogate: Toluene-d8	28.57			25.0000		114	84 - 117			



Certificate of Analysis

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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F0897 - MSSEMI_W

Blank (B2F0897-BLK1)

Prepared: 6/6/2022 Analyzed: 6/6/2022

1,4-Dioxane	ND	2.0	0.84						

Surrogate: 1,2-Dichlorobenzene-d4	95.22			100.000	95.2	17 - 119
Surrogate: 2-Fluorobiphenyl	91.35			100.000	91.4	10 - 133
Surrogate: 4-Terphenyl-d14	88.27			100.000	88.3	5 - 139
Surrogate: Nitrobenzene-d5	102.3			100.000	102	13 - 150

LCS (B2F0897-BS1)

Prepared: 6/6/2022 Analyzed: 6/6/2022

1,4-Dioxane	95.0600	2.0	0.84	100.000	95.1	75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	99.98			100.000	100	17 - 119
Surrogate: 2-Fluorobiphenyl	91.69			100.000	91.7	10 - 133
Surrogate: 4-Terphenyl-d14	88.53			100.000	88.5	5 - 139
Surrogate: Nitrobenzene-d5	108.7			100.000	109	13 - 150

LCS Dup (B2F0897-BSD1)

Prepared: 6/6/2022 Analyzed: 6/6/2022

1,4-Dioxane	85.3600	2.0	0.84	100.000	85.4	75 - 155	10.8	20

Surrogate: 1,2-Dichlorobenzene-d4	94.81			100.000	94.8	17 - 119
Surrogate: 2-Fluorobiphenyl	90.40			100.000	90.4	10 - 133
Surrogate: 4-Terphenyl-d14	86.90			100.000	86.9	5 - 139
Surrogate: Nitrobenzene-d5	106.2			100.000	106	13 - 150



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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 06/28/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F0866 - MSSEMI_W

Blank (B2F0866-BLK1)

Prepared: 6/3/2022 Analyzed: 6/6/2022

1,4-Dioxane	ND	0.20	0.05							
Surrogate: 1,2-Dichlorobenzene-d4	1.028			1.00000		103	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9891			1.00000		98.9	8 - 111			
Surrogate: 4-Terphenyl-d14	1.156			1.00000		116	12 - 113			S12
Surrogate: Nitrobenzene-d5	0.9053			1.00000		90.5	15 - 121			

LCS (B2F0866-BS1)

Prepared: 6/3/2022 Analyzed: 6/6/2022

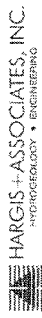
1,4-Dioxane	1.47947	0.20	0.05	1.00000		148	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	1.037			1.00000		104	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9893			1.00000		98.9	8 - 111			
Surrogate: 4-Terphenyl-d14	1.117			1.00000		112	12 - 113			
Surrogate: Nitrobenzene-d5	0.9993			1.00000		99.9	15 - 121			

LCS Dup (B2F0866-BSD1)

Prepared: 6/3/2022 Analyzed: 6/6/2022

1,4-Dioxane	1.33345	0.20	0.05	1.00000		133	75 - 155	10.4	20	
Surrogate: 1,2-Dichlorobenzene-d4	1.034			1.00000		103	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9924			1.00000		99.2	8 - 111			
Surrogate: 4-Terphenyl-d14	1.111			1.00000		111	12 - 113			
Surrogate: Nitrobenzene-d5	0.9283			1.00000		92.8	15 - 121			

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PROJECT: Raytheon Main GETS Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto
QA Manager Ruben Sanchez
Phone 858.455.6500
Fax 858.455.6533

SAMPLE COLLECTION		
LAB ID	SAMPLE ID	Time
1	TB-060222	8:00
2	CEFF	11:20
3	CBT	11:25
4	POX	11:30
5	PF	11:35
6	INF	11:40
7	EW-02	12:15
8	MW-29	12:30

Total number of containers per analysis: 24 3 2 1 2 6 Total No. of Containers: 38

Relinquished By: / Company:		Date / Time	Received By: / Company:	Date / Time
Steve Netto		6-2-22 1300	Steve Netto	6-2-2022 1300
Ruben Sanchez		6-2-22 14:17	Ruben Sanchez	6-2-22 14:17

Instructions:
1. Fill out form completely and sign only after verified for completeness
2. Complete in ballpoint pen. Draw one line through error, initial and date correction
3. Indicate the number of sample containers in analytical request space; indicate choice with ✓ or x
4. Indicate applicable preservatives, special instructions, and deviations from typical environmental samples.
5. Consult project QA documents for specific instructions.



JK BioScience Environmental Laboratories

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- Consulting and Research
- Analytical Laboratories

CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

REPORTING DATE: 06/23/2022
SAMPLE RECEIVED: 06/07/2022
LABORATORY NO.: 22-1674-1

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201465-04 / POX
MATRIX: Groundwater

DATE SAMPLED : 06/02/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Alkalinity as CaCO ₃	223	mg/L	6.00	1	SM 2320 B	06/15/22
Total Organic Carbon	ND	mg/L	0.50	1	SM 5310 D	06/14/22
Bromate	ND	ug/L	25.0	1	EPA 300.1	06/13/22
<u>Surrogate Recovery</u>	<u>Rec (%)</u>				<u>Control Limits</u>	
Dichloroacetate (Surr)	99				90-115	

*ND: Parameter not detected at the indicated reporting limit.

**Analyses were performed by partnership lab, LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201465-05 / PF
MATRIX: Groundwater

REPORTING DATE: 06/23/2022
SAMPLE RECEIVED: 06/07/2022
LABORATORY NO.: 22-1674-2
DATE SAMPLED : 06/02/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Alkalinity as CaCO ₃	224	mg/L	6.00	1	SM 2320 B	06/15/22
Total Organic Carbon	ND	mg/L	0.50	1	SM 5310 D	06/14/22

*ND: Parameter not detected at the indicated reporting limit.

**Analyses were performed by partnership lab, LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____




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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201465-06 / INF
MATRIX: Groundwater

REPORTING DATE: 06/23/2022
SAMPLE RECEIVED: 06/07/2022
LABORATORY NO.: 22-1674-3
DATE SAMPLED : 06/02/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.29	mg/L	0.10	1	EPA 300.0	06/20/22
Bromate	ND	ug/L	25.0	1	EPA 300.1	06/13/22
<u>Surrogate Recovery</u>	<u>Rec (%)</u>				<u>Control Limits</u>	
Dichloroacetate (Surr)	102				90-115	

*ND: Parameter not detected at the indicated reporting limit.

**Analyses were performed by partnership lab, LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



JK BioScience Environmental Laboratories

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- Consulting and Research
- Analytical Laboratories

CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201465-07 / EW-02
MATRIX: Groundwater

REPORTING DATE: 06/23/2022
SAMPLE RECEIVED: 06/07/2022
LABORATORY NO.: 22-1674-4
DATE SAMPLED : 06/02/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.21	mg/L	0.10	1	EPA 300.0	06/20/22

*ND: Parameter not detected at the indicated reporting limit.

**Analysis was performed by partnership lab, LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



JK BioScience Environmental Laboratories

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- Analytical Laboratories

CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201465-08 / MW-29
MATRIX: Groundwater

REPORTING DATE: 06/23/2022
SAMPLE RECEIVED: 06/07/2022
LABORATORY NO.: 22-1674-5
DATE SAMPLED : 06/02/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.39	mg/L	0.10	1	EPA 300.0	06/20/22

*ND: Parameter not detected at the indicated reporting limit.

**Analysis was performed by partnership lab, LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____


ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2201465

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Jerald Ancheta
(Jerald.Ancheta@atlglobal.com)
Sampler: Ruben Sanchez

RECEIVING LABORATORY:

JK Bioscience, Inc.
1926 E. Gladwick Street
Rancho Dominguez, CA 90220
Phone : (213) 292-6474
Fax:
PO#: SC16186
IMPORTANT : Please 'J-Flag' results to MDL. Please include Work Order # and PO # in your invoice.

QC Requirements:

☒ Routine ☐ MS/MSD
☐ Caltrans ☐ Level IV*
☐ DUP ☐ Other: _____

TAT Requirements:

☒ Standard
☐ Rush _____ Days
☐ Fastest Possible

EDD Requirements:

☐ Standard Excel
☐ Geotracker EDF
☐ EQuis
☐ Other: _____

* All Level IV sample containers (including empty ones) must be returned to ATL 30 days after receipt.

Analysis	Expires	Sampled	Comments
ATL Lab#: 2201465-04 / POX 22-1674-1 Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS] Speciated Alkalinity_2320B_SUB [Alkalinity, Speciated] TOC_SUB [Total Organic Carbon] TOC_SUB [Total Organic Carbon]	Groundwater 06/30/22 11:30 06/16/22 11:30 06/30/22 11:30 06/30/22 11:30	06/02/22 11:30 Poly EDA - 60mL Poly Unpres - 125mL Voa Vial - HCl Voa Vial - HCl 2	 Res Temp. 9°C

Prepared by:

J. Sanchez 6/6/22
Sample Control Technician Date

Inspected by:

[Signature] 6/6/22
PM Lead / SC Lead Date

Approved by:

[Signature] 6/6/22
Dedicated ATL Project Manager Date

Released By ATL Sample Control Date Time

Received By Courier Date Time

[Signature] 6/6/22 10:45 AM

Released By Courier Date Time

Received By Subcontract Laboratory Date Time

Released By Date Time

Received By Date Time

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2201465

Analysis	Expires	Sampled	Comments
ATL Lab#: 2201465-05 / PF 22-1674-2 Speciated Alkalinity_2320B_SUB [Alkalinity, Speciated] TOC_SUB [Total Organic Carbon] TOC_SUB [Total Organic Carbon]	Groundwater 06/16/22 11:35 06/30/22 11:35 06/30/22 11:35	06/02/22 11:35 Poly Unpres - 125mL Voa Vial - HCl Voa Vial - HCl 2	
ATL Lab#: 2201465-06 / INF 22-1674-3 300_Bromide_SUB [Bromide by Ion Chromatography] Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS]	Groundwater 06/30/22 11:40 06/30/22 11:40	06/02/22 11:40 Poly Unpres - 125mL Poly EDA - 60mL	
ATL Lab#: 2201465-07 / EW-02 22-1674-4 300_Bromide_SUB [Bromide by Ion Chromatography]	Groundwater 06/30/22 12:15	06/02/22 12:15 Poly Unpres - 125mL	
ATL Lab#: 2201465-08 / MW-29 22-1674-5 300_Bromide_SUB [Bromide by Ion Chromatography]	Groundwater 06/30/22 12:30	06/02/22 12:30 Poly Unpres - 125mL	

Prepared by: [Signature] 6/6/22
Sample Control Technician Date

Inspected by: [Signature] 6/6/22
PM Lead / SC Lead Date

Approved by: [Signature] 6/7/22 10:45
Dedicated ATL Project Manager Date

Released By ATL Sample Control Date Time

Released By Courier Date Time

Released By Date Time

Received By Courier Date Time

Received By Subcontract Laboratory Date Time

Received By Date Time



June 29, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 2201732

Client Reference : Raytheon Main GETS Mid Month Sample: 532.15

Enclosed are the results for sample(s) received on June 23, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Victoria Michel', with a small flourish below it.

Victoria Michel, Project Assistant
Victoria.Michel@atlglobal.com

Authorized to Release on 06/29/22 09:29 on Behalf of

A handwritten signature in black ink, appearing to read 'Amy Leung'.

Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-062322	2201732-01	Water	6/23/22 8:00	6/23/22 11:20
CEFF	2201732-02	Groundwater	6/23/22 8:45	6/23/22 11:20
CBT	2201732-03	Groundwater	6/23/22 8:55	6/23/22 11:20
POX	2201732-04	Groundwater	6/23/22 9:05	6/23/22 11:20
INF	2201732-05	Groundwater	6/23/22 9:20	6/23/22 11:20
EW-02	2201732-06	Groundwater	6/23/22 9:50	6/23/22 11:20
MW-29	2201732-07	Groundwater	6/23/22 10:07	6/23/22 11:20



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
L3	Laboratory control sample outside in-house established limits but within method criteria.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: TB-062322

Lab ID: 2201732-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 12:43	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 12:43	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2F1302	06/24/2022	06/24/22 12:43	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2F1302	06/24/2022	06/24/22 12:43	
1,1-Dichloroethane	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 12:43	
1,1-Dichloroethene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
1,1-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2-Dibromoethane	ND	0.50	0.24	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2-Dichloroethane	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 12:43	
1,2-Dichloropropane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 12:43	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 12:43	
1,3-Dichloropropane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 12:43	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2F1302	06/24/2022	06/24/22 12:43	
2,2-Dichloropropane	ND	0.50	0.38	1	B2F1302	06/24/2022	06/24/22 12:43	
2-Chlorotoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 12:43	
4-Chlorotoluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 12:43	
4-Isopropyltoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 12:43	
Benzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
Bromobenzene	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 12:43	
Bromodichloromethane	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 12:43	
Bromoform	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 12:43	
Bromomethane	ND	0.50	0.40	1	B2F1302	06/24/2022	06/24/22 12:43	
Carbon tetrachloride	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 12:43	
Chlorobenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
Chloroethane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 12:43	
Chloroform	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 12:43	
Chloromethane	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 12:43	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 12:43	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
Dibromochloromethane	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 12:43	
Dibromomethane	ND	0.50	0.19	1	B2F1302	06/24/2022	06/24/22 12:43	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 12:43	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: TB-062322

Lab ID: 2201732-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
Hexachlorobutadiene	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 12:43	
Isopropylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 12:43	
m,p-Xylene	ND	1.0	0.19	1	B2F1302	06/24/2022	06/24/22 12:43	
Methylene chloride	ND	1.0	0.71	1	B2F1302	06/24/2022	06/24/22 12:43	
n-Butylbenzene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 12:43	
n-Propylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 12:43	
Naphthalene	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 12:43	
o-Xylene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
sec-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 12:43	
Styrene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
tert-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 12:43	
Tetrachloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 12:43	
Toluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 12:43	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 12:43	
Trichloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 12:43	
Trichlorofluoromethane	ND	0.50	0.23	1	B2F1302	06/24/2022	06/24/22 12:43	
Vinyl chloride	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 12:43	
Surrogate: 1,2-Dichloroethane-d4	111 %	64 - 155			B2F1302	06/24/2022	06/24/22 12:43	
Surrogate: 4-Bromofluorobenzene	97.8 %	73 - 124			B2F1302	06/24/2022	06/24/22 12:43	
Surrogate: Dibromofluoromethane	105 %	78 - 129			B2F1302	06/24/2022	06/24/22 12:43	
Surrogate: Toluene-d8	101 %	84 - 117			B2F1302	06/24/2022	06/24/22 12:43	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: CEFF

Lab ID: 2201732-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:09	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 13:09	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2F1302	06/24/2022	06/24/22 13:09	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2F1302	06/24/2022	06/24/22 13:09	
1,1-Dichloroethane	0.26	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:09	J
1,1-Dichloroethene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
1,1-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2-Dibromoethane	ND	0.50	0.24	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2-Dichloroethane	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 13:09	
1,2-Dichloropropane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 13:09	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 13:09	
1,3-Dichloropropane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 13:09	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2F1302	06/24/2022	06/24/22 13:09	
2,2-Dichloropropane	ND	0.50	0.38	1	B2F1302	06/24/2022	06/24/22 13:09	
2-Chlorotoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:09	
4-Chlorotoluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 13:09	
4-Isopropyltoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:09	
Benzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
Bromobenzene	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 13:09	
Bromodichloromethane	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 13:09	
Bromoform	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 13:09	
Bromomethane	ND	0.50	0.40	1	B2F1302	06/24/2022	06/24/22 13:09	
Carbon tetrachloride	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:09	
Chlorobenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
Chloroethane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 13:09	
Chloroform	0.17	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:09	J
Chloromethane	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 13:09	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 13:09	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
Dibromochloromethane	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 13:09	
Dibromomethane	ND	0.50	0.19	1	B2F1302	06/24/2022	06/24/22 13:09	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 13:09	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: CEFF

Lab ID: 2201732-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
Hexachlorobutadiene	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 13:09	
Isopropylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:09	
m,p-Xylene	ND	1.0	0.19	1	B2F1302	06/24/2022	06/24/22 13:09	
Methylene chloride	ND	1.0	0.71	1	B2F1302	06/24/2022	06/24/22 13:09	
n-Butylbenzene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:09	
n-Propylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:09	
Naphthalene	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 13:09	
o-Xylene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
sec-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:09	
Styrene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
tert-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:09	
Tetrachloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:09	
Toluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 13:09	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:09	
Trichloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:09	
Trichlorofluoromethane	0.30	0.50	0.23	1	B2F1302	06/24/2022	06/24/22 13:09	J
Vinyl chloride	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:09	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>64 - 155</i>			B2F1302	06/24/2022	06/24/22 13:09	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.9 %</i>	<i>73 - 124</i>			B2F1302	06/24/2022	06/24/22 13:09	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>78 - 129</i>			B2F1302	06/24/2022	06/24/22 13:09	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>84 - 117</i>			B2F1302	06/24/2022	06/24/22 13:09	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2F1304	06/24/2022	06/24/22 12:47	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>109 %</i>	<i>13 - 99</i>			B2F1304	06/24/2022	06/24/22 12:47	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>95.2 %</i>	<i>8 - 111</i>			B2F1304	06/24/2022	06/24/22 12:47	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>100 %</i>	<i>12 - 113</i>			B2F1304	06/24/2022	06/24/22 12:47	
<i>Surrogate: Nitrobenzene-d5</i>	<i>125 %</i>	<i>15 - 121</i>			B2F1304	06/24/2022	06/24/22 12:47	S12



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: CBT

Lab ID: 2201732-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:35	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 13:35	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2F1302	06/24/2022	06/24/22 13:35	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2F1302	06/24/2022	06/24/22 13:35	
1,1-Dichloroethane	0.27	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:35	J
1,1-Dichloroethene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
1,1-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2-Dibromoethane	ND	0.50	0.24	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2-Dichloroethane	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 13:35	
1,2-Dichloropropane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 13:35	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 13:35	
1,3-Dichloropropane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 13:35	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2F1302	06/24/2022	06/24/22 13:35	
2,2-Dichloropropane	ND	0.50	0.38	1	B2F1302	06/24/2022	06/24/22 13:35	
2-Chlorotoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:35	
4-Chlorotoluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 13:35	
4-Isopropyltoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:35	
Benzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
Bromobenzene	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 13:35	
Bromodichloromethane	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 13:35	
Bromoform	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 13:35	
Bromomethane	ND	0.50	0.40	1	B2F1302	06/24/2022	06/24/22 13:35	
Carbon tetrachloride	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:35	
Chlorobenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
Chloroethane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 13:35	
Chloroform	0.15	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:35	J
Chloromethane	0.40	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 13:35	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 13:35	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
Dibromochloromethane	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 13:35	
Dibromomethane	ND	0.50	0.19	1	B2F1302	06/24/2022	06/24/22 13:35	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 13:35	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: CBT

Lab ID: 2201732-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
Hexachlorobutadiene	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 13:35	
Isopropylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:35	
m,p-Xylene	ND	1.0	0.19	1	B2F1302	06/24/2022	06/24/22 13:35	
Methylene chloride	ND	1.0	0.71	1	B2F1302	06/24/2022	06/24/22 13:35	
n-Butylbenzene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 13:35	
n-Propylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:35	
Naphthalene	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 13:35	
o-Xylene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
sec-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:35	
Styrene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
tert-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:35	
Tetrachloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:35	
Toluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 13:35	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 13:35	
Trichloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 13:35	
Trichlorofluoromethane	0.29	0.50	0.23	1	B2F1302	06/24/2022	06/24/22 13:35	J
Vinyl chloride	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 13:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>113 %</i>	<i>64 - 155</i>			B2F1302	06/24/2022	06/24/22 13:35	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.9 %</i>	<i>73 - 124</i>			B2F1302	06/24/2022	06/24/22 13:35	
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>	<i>78 - 129</i>			B2F1302	06/24/2022	06/24/22 13:35	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>			B2F1302	06/24/2022	06/24/22 13:35	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2F1304	06/24/2022	06/24/22 13:13	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>111 %</i>	<i>13 - 99</i>			B2F1304	06/24/2022	06/24/22 13:13	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>95.5 %</i>	<i>8 - 111</i>			B2F1304	06/24/2022	06/24/22 13:13	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>101 %</i>	<i>12 - 113</i>			B2F1304	06/24/2022	06/24/22 13:13	
<i>Surrogate: Nitrobenzene-d5</i>	<i>106 %</i>	<i>15 - 121</i>			B2F1304	06/24/2022	06/24/22 13:13	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: POX

Lab ID: 2201732-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:01	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:01	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2F1302	06/24/2022	06/24/22 14:01	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2F1302	06/24/2022	06/24/22 14:01	
1,1-Dichloroethane	0.35	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:01	J
1,1-Dichloroethene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
1,1-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2-Dibromoethane	ND	0.50	0.24	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2-Dichloroethane	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:01	
1,2-Dichloropropane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:01	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:01	
1,3-Dichloropropane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:01	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2F1302	06/24/2022	06/24/22 14:01	
2,2-Dichloropropane	ND	0.50	0.38	1	B2F1302	06/24/2022	06/24/22 14:01	
2-Chlorotoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:01	
4-Chlorotoluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:01	
4-Isopropyltoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:01	
Benzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
Bromobenzene	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:01	
Bromodichloromethane	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:01	
Bromoform	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:01	
Bromomethane	ND	0.50	0.40	1	B2F1302	06/24/2022	06/24/22 14:01	
Carbon tetrachloride	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:01	
Chlorobenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
Chloroethane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:01	
Chloroform	0.14	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:01	J
Chloromethane	0.33	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:01	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:01	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
Dibromochloromethane	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:01	
Dibromomethane	ND	0.50	0.19	1	B2F1302	06/24/2022	06/24/22 14:01	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 14:01	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: POX

Lab ID: 2201732-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
Hexachlorobutadiene	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:01	
Isopropylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:01	
m,p-Xylene	ND	1.0	0.19	1	B2F1302	06/24/2022	06/24/22 14:01	
Methylene chloride	ND	1.0	0.71	1	B2F1302	06/24/2022	06/24/22 14:01	
n-Butylbenzene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:01	
n-Propylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:01	
Naphthalene	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 14:01	
o-Xylene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
sec-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:01	
Styrene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
tert-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:01	
Tetrachloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:01	
Toluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:01	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:01	
Trichloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:01	
Trichlorofluoromethane	0.28	0.50	0.23	1	B2F1302	06/24/2022	06/24/22 14:01	J
Vinyl chloride	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:01	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>114 %</i>	<i>64 - 155</i>			B2F1302	06/24/2022	06/24/22 14:01	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.4 %</i>	<i>73 - 124</i>			B2F1302	06/24/2022	06/24/22 14:01	
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</i>	<i>78 - 129</i>			B2F1302	06/24/2022	06/24/22 14:01	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>84 - 117</i>			B2F1302	06/24/2022	06/24/22 14:01	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2F1304	06/24/2022	06/24/22 13:40	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>112 %</i>	<i>13 - 99</i>			B2F1304	06/24/2022	06/24/22 13:40	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>90.1 %</i>	<i>8 - 111</i>			B2F1304	06/24/2022	06/24/22 13:40	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>103 %</i>	<i>12 - 113</i>			B2F1304	06/24/2022	06/24/22 13:40	
<i>Surrogate: Nitrobenzene-d5</i>	<i>125 %</i>	<i>15 - 121</i>			B2F1304	06/24/2022	06/24/22 13:40	S12



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: INF

Lab ID: 2201732-05

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:27	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:27	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2F1302	06/24/2022	06/24/22 14:27	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2F1302	06/24/2022	06/24/22 14:27	
1,1-Dichloroethane	0.51	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:27	
1,1-Dichloroethene	57	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
1,1-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2-Dibromoethane	ND	0.50	0.24	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2-Dichloroethane	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:27	
1,2-Dichloropropane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:27	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:27	
1,3-Dichloropropane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:27	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2F1302	06/24/2022	06/24/22 14:27	
2,2-Dichloropropane	ND	0.50	0.38	1	B2F1302	06/24/2022	06/24/22 14:27	
2-Chlorotoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:27	
4-Chlorotoluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:27	
4-Isopropyltoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:27	
Benzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
Bromobenzene	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:27	
Bromodichloromethane	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:27	
Bromoform	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:27	
Bromomethane	ND	0.50	0.40	1	B2F1302	06/24/2022	06/24/22 14:27	
Carbon tetrachloride	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:27	
Chlorobenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
Chloroethane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:27	
Chloroform	0.16	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:27	J
Chloromethane	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:27	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:27	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
Dibromochloromethane	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:27	
Dibromomethane	ND	0.50	0.19	1	B2F1302	06/24/2022	06/24/22 14:27	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 14:27	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: INF

Lab ID: 2201732-05

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
Hexachlorobutadiene	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:27	
Isopropylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:27	
m,p-Xylene	ND	1.0	0.19	1	B2F1302	06/24/2022	06/24/22 14:27	
Methylene chloride	ND	1.0	0.71	1	B2F1302	06/24/2022	06/24/22 14:27	
n-Butylbenzene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:27	
n-Propylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:27	
Naphthalene	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 14:27	
o-Xylene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
sec-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:27	
Styrene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
tert-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:27	
Tetrachloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:27	
Toluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:27	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:27	
Trichloroethene	0.58	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:27	
Trichlorofluoromethane	0.27	0.50	0.23	1	B2F1302	06/24/2022	06/24/22 14:27	J
Vinyl chloride	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:27	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>111 %</i>	<i>64 - 155</i>			B2F1302	06/24/2022	06/24/22 14:27	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.9 %</i>	<i>73 - 124</i>			B2F1302	06/24/2022	06/24/22 14:27	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>78 - 129</i>			B2F1302	06/24/2022	06/24/22 14:27	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>			B2F1302	06/24/2022	06/24/22 14:27	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	24	2.0	0.84	1	B2F1301	06/24/2022	06/24/22 13:01	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>96.3 %</i>	<i>17 - 119</i>			B2F1301	06/24/2022	06/24/22 13:01	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>89.7 %</i>	<i>10 - 133</i>			B2F1301	06/24/2022	06/24/22 13:01	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>81.0 %</i>	<i>5 - 139</i>			B2F1301	06/24/2022	06/24/22 13:01	
<i>Surrogate: Nitrobenzene-d5</i>	<i>88.6 %</i>	<i>13 - 150</i>			B2F1301	06/24/2022	06/24/22 13:01	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: EW-02

Lab ID: 2201732-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:53	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:53	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2F1302	06/24/2022	06/24/22 14:53	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2F1302	06/24/2022	06/24/22 14:53	
1,1-Dichloroethane	0.13	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:53	J
1,1-Dichloroethene	16	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
1,1-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2-Dibromoethane	ND	0.50	0.24	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2-Dichloroethane	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:53	
1,2-Dichloropropane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:53	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:53	
1,3-Dichloropropane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:53	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2F1302	06/24/2022	06/24/22 14:53	
2,2-Dichloropropane	ND	0.50	0.38	1	B2F1302	06/24/2022	06/24/22 14:53	
2-Chlorotoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:53	
4-Chlorotoluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:53	
4-Isopropyltoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:53	
Benzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
Bromobenzene	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 14:53	
Bromodichloromethane	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:53	
Bromoform	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 14:53	
Bromomethane	ND	0.50	0.40	1	B2F1302	06/24/2022	06/24/22 14:53	
Carbon tetrachloride	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:53	
Chlorobenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
Chloroethane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:53	
Chloroform	0.13	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:53	J
Chloromethane	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:53	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 14:53	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
Dibromochloromethane	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 14:53	
Dibromomethane	ND	0.50	0.19	1	B2F1302	06/24/2022	06/24/22 14:53	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 14:53	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: EW-02

Lab ID: 2201732-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
Hexachlorobutadiene	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 14:53	
Isopropylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:53	
m,p-Xylene	ND	1.0	0.19	1	B2F1302	06/24/2022	06/24/22 14:53	
Methylene chloride	ND	1.0	0.71	1	B2F1302	06/24/2022	06/24/22 14:53	
n-Butylbenzene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 14:53	
n-Propylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:53	
Naphthalene	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 14:53	
o-Xylene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
sec-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:53	
Styrene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
tert-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:53	
Tetrachloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:53	
Toluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 14:53	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 14:53	
Trichloroethene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 14:53	
Trichlorofluoromethane	ND	0.50	0.23	1	B2F1302	06/24/2022	06/24/22 14:53	
Vinyl chloride	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 14:53	
Surrogate: 1,2-Dichloroethane-d4	113 %	64 - 155			B2F1302	06/24/2022	06/24/22 14:53	
Surrogate: 4-Bromofluorobenzene	97.4 %	73 - 124			B2F1302	06/24/2022	06/24/22 14:53	
Surrogate: Dibromofluoromethane	108 %	78 - 129			B2F1302	06/24/2022	06/24/22 14:53	
Surrogate: Toluene-d8	102 %	84 - 117			B2F1302	06/24/2022	06/24/22 14:53	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	4.3	2.0	0.84	1	B2F1301	06/24/2022	06/24/22 13:28	
Surrogate: 1,2-Dichlorobenzene-d4	95.4 %	17 - 119			B2F1301	06/24/2022	06/24/22 13:28	
Surrogate: 2-Fluorobiphenyl	86.9 %	10 - 133			B2F1301	06/24/2022	06/24/22 13:28	
Surrogate: 4-Terphenyl-d14	84.2 %	5 - 139			B2F1301	06/24/2022	06/24/22 13:28	
Surrogate: Nitrobenzene-d5	86.9 %	13 - 150			B2F1301	06/24/2022	06/24/22 13:28	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: MW-29

Lab ID: 2201732-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 15:19	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 15:19	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2F1302	06/24/2022	06/24/22 15:19	
1,1,2-Trichloroethane	0.46	0.50	0.25	1	B2F1302	06/24/2022	06/24/22 15:19	J
1,1-Dichloroethane	1.6	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 15:19	
1,1-Dichloroethene	190	5.0	1.3	10	B2F1302	06/24/2022	06/24/22 15:45	
1,1-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2-Dibromoethane	ND	0.50	0.24	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2-Dichloroethane	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 15:19	
1,2-Dichloropropane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 15:19	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 15:19	
1,3-Dichloropropane	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 15:19	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2F1302	06/24/2022	06/24/22 15:19	
2,2-Dichloropropane	ND	0.50	0.38	1	B2F1302	06/24/2022	06/24/22 15:19	
2-Chlorotoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 15:19	
4-Chlorotoluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 15:19	
4-Isopropyltoluene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 15:19	
Benzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
Bromobenzene	ND	0.50	0.21	1	B2F1302	06/24/2022	06/24/22 15:19	
Bromodichloromethane	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 15:19	
Bromoform	ND	0.50	0.20	1	B2F1302	06/24/2022	06/24/22 15:19	
Bromomethane	ND	0.50	0.40	1	B2F1302	06/24/2022	06/24/22 15:19	
Carbon tetrachloride	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 15:19	
Chlorobenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
Chloroethane	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 15:19	
Chloroform	0.26	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 15:19	J
Chloromethane	0.45	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 15:19	J
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2F1302	06/24/2022	06/24/22 15:19	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
Dibromochloromethane	ND	0.50	0.16	1	B2F1302	06/24/2022	06/24/22 15:19	
Dibromomethane	ND	0.50	0.19	1	B2F1302	06/24/2022	06/24/22 15:19	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2F1302	06/24/2022	06/24/22 15:19	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Client Sample ID: MW-29

Lab ID: 2201732-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
Hexachlorobutadiene	ND	0.50	0.15	1	B2F1302	06/24/2022	06/24/22 15:19	
Isopropylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 15:19	
m,p-Xylene	ND	1.0	0.19	1	B2F1302	06/24/2022	06/24/22 15:19	
Methylene chloride	ND	1.0	0.71	1	B2F1302	06/24/2022	06/24/22 15:19	
n-Butylbenzene	ND	0.50	0.11	1	B2F1302	06/24/2022	06/24/22 15:19	
n-Propylbenzene	ND	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 15:19	
Naphthalene	ND	0.50	0.41	1	B2F1302	06/24/2022	06/24/22 15:19	
o-Xylene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
sec-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 15:19	
Styrene	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
tert-Butylbenzene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 15:19	
Tetrachloroethene	0.48	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 15:19	J
Toluene	ND	0.50	0.12	1	B2F1302	06/24/2022	06/24/22 15:19	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2F1302	06/24/2022	06/24/22 15:19	
Trichloroethene	1.8	0.50	0.10	1	B2F1302	06/24/2022	06/24/22 15:19	
Trichlorofluoromethane	0.76	0.50	0.23	1	B2F1302	06/24/2022	06/24/22 15:19	
Vinyl chloride	ND	0.50	0.13	1	B2F1302	06/24/2022	06/24/22 15:19	
Surrogate: 1,2-Dichloroethane-d4	111 %	64 - 155			B2F1302	06/24/2022	06/24/22 15:19	
Surrogate: 1,2-Dichloroethane-d4	113 %	64 - 155			B2F1302	06/24/2022	06/24/22 15:45	
Surrogate: 4-Bromofluorobenzene	96.2 %	73 - 124			B2F1302	06/24/2022	06/24/22 15:19	
Surrogate: 4-Bromofluorobenzene	98.9 %	73 - 124			B2F1302	06/24/2022	06/24/22 15:45	
Surrogate: Dibromofluoromethane	105 %	78 - 129			B2F1302	06/24/2022	06/24/22 15:19	
Surrogate: Dibromofluoromethane	109 %	78 - 129			B2F1302	06/24/2022	06/24/22 15:45	
Surrogate: Toluene-d8	102 %	84 - 117			B2F1302	06/24/2022	06/24/22 15:19	
Surrogate: Toluene-d8	102 %	84 - 117			B2F1302	06/24/2022	06/24/22 15:45	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	66	2.0	0.84	1	B2F1301	06/24/2022	06/24/22 13:55	
Surrogate: 1,2-Dichlorobenzene-d4	92.5 %	17 - 119			B2F1301	06/24/2022	06/24/22 13:55	
Surrogate: 2-Fluorobiphenyl	87.9 %	10 - 133			B2F1301	06/24/2022	06/24/22 13:55	
Surrogate: 4-Terphenyl-d14	83.3 %	5 - 139			B2F1301	06/24/2022	06/24/22 13:55	
Surrogate: Nitrobenzene-d5	87.4 %	13 - 150			B2F1301	06/24/2022	06/24/22 13:55	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B2F1302 - MSVOA_LL_W

Blank (B2F1302-BLK1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F1302 - MSVOA_LL_W (continued)

Blank (B2F1302-BLK1) - Continued

Prepared: 6/24/2022 Analyzed: 6/24/2022

Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	ND	0.50	0.11
n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	27.69		25.0000	111	64 - 155
Surrogate: 4-Bromofluorobenzene	25.17		25.0000	101	73 - 124
Surrogate: Dibromofluoromethane	26.63		25.0000	107	78 - 129
Surrogate: Toluene-d8	25.32		25.0000	101	84 - 117

LCS (B2F1302-BS1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,1,1,2-Tetrachloroethane	21.1400	0.50	0.11	20.0000	106	79 - 116
1,1,1-Trichloroethane	22.2700	0.50	0.21	20.0000	111	73 - 130
1,1,2,2-Tetrachloroethane	21.4500	0.50	0.36	20.0000	107	71 - 122
1,1,2-Trichloroethane	20.9800	0.50	0.25	20.0000	105	70 - 124
1,1-Dichloroethane	23.4300	0.50	0.09	20.0000	117	69 - 128
1,1-Dichloroethene	22.9300	0.50	0.13	20.0000	115	65 - 137
1,1-Dichloropropene	21.2700	0.50	0.13	20.0000	106	74 - 129
1,2,3-Trichloropropane	20.0000	0.50	0.39	20.0000	100	74 - 123
1,2,3-Trichlorobenzene	20.5300	0.50	0.18	20.0000	103	59 - 130
1,2,4-Trichlorobenzene	20.9500	0.50	0.16	20.0000	105	65 - 125
1,2,4-Trimethylbenzene	21.1600	0.50	0.14	20.0000	106	88 - 124
1,2-Dibromo-3-chloropropane	17.9000	0.50	0.41	20.0000	89.5	61 - 127
1,2-Dibromoethane	20.0900	0.50	0.24	20.0000	100	72 - 125
1,2-Dichlorobenzene	20.6800	0.50	0.20	20.0000	103	84 - 113
1,2-Dichloroethane	21.4800	0.50	0.20	20.0000	107	68 - 130
1,2-Dichloropropane	22.5400	0.50	0.15	20.0000	113	77 - 121
1,3,5-Trimethylbenzene	21.1600	0.50	0.13	20.0000	106	83 - 124
1,3-Dichlorobenzene	20.8600	0.50	0.16	20.0000	104	83 - 112
1,3-Dichloropropane	21.6200	0.50	0.21	20.0000	108	77 - 119
1,4-Dichlorobenzene	20.5000	0.50	0.17	20.0000	102	79 - 115
2,2-Dichloropropane	21.7800	0.50	0.38	20.0000	109	67 - 149
2-Chlorotoluene	21.3400	0.50	0.11	20.0000	107	81 - 119



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F1302 - MSVOA_LL_W (continued)

LCS (B2F1302-BS1) - Continued

Prepared: 6/24/2022 Analyzed: 6/24/2022

4-Chlorotoluene	21.4600	0.50	0.12	20.0000		107	86 - 117			
4-Isopropyltoluene	21.1200	0.50	0.11	20.0000		106	82 - 131			
Benzene	22.2600	0.50	0.13	20.0000		111	75 - 124			
Bromobenzene	20.7300	0.50	0.21	20.0000		104	82 - 108			
Bromodichloromethane	20.2000	0.50	0.14	20.0000		101	80 - 120			
Bromoform	19.5900	0.50	0.20	20.0000		98.0	70 - 123			
Bromomethane	20.2900	0.50	0.40	20.0000		101	44 - 151			
Carbon tetrachloride	19.8700	0.50	0.09	20.0000		99.4	62 - 140			
Chlorobenzene	20.8000	0.50	0.13	20.0000		104	80 - 112			
Chloroethane	26.4600	0.50	0.15	20.0000		132	42 - 167			
Chloroform	21.5000	0.50	0.11	20.0000		108	77 - 122			
Chloromethane	23.9900	0.50	0.12	20.0000		120	33 - 153			
cis-1,2-Dichloroethene	17.4500	0.50	0.14	20.0000		87.2	75 - 121			
cis-1,3-Dichloropropene	20.5900	0.50	0.13	20.0000		103	73 - 127			
Dibromochloromethane	19.4400	0.50	0.16	20.0000		97.2	77 - 122			
Dibromomethane	20.2100	0.50	0.19	20.0000		101	75 - 121			
Dichlorodifluoromethane	22.7900	0.50	0.18	20.0000		114	0 - 171			
Ethylbenzene	21.9400	0.50	0.13	20.0000		110	82 - 119			
Hexachlorobutadiene	19.8000	0.50	0.15	20.0000		99.0	71 - 131			
Isopropylbenzene	22.1700	0.50	0.10	20.0000		111	75 - 126			
m,p-Xylene	42.6400	1.0	0.19	40.0000		107	86 - 119			
Methylene chloride	25.3300	1.0	0.71	20.0000		127	76 - 125			L3
n-Butylbenzene	21.7000	0.50	0.11	20.0000		108	81 - 125			
n-Propylbenzene	21.6600	0.50	0.10	20.0000		108	78 - 130			
Naphthalene	20.3800	0.50	0.41	20.0000		102	47 - 128			
o-Xylene	21.8700	0.50	0.13	20.0000		109	85 - 119			
sec-Butylbenzene	21.8200	0.50	0.09	20.0000		109	78 - 130			
Styrene	21.0800	0.50	0.13	20.0000		105	62 - 148			
tert-Butylbenzene	20.9000	0.50	0.09	20.0000		104	77 - 125			
Tetrachloroethene	21.2900	0.50	0.10	20.0000		106	73 - 120			
Toluene	21.9000	0.50	0.12	20.0000		110	79 - 119			
trans-1,2-Dichloroethene	30.3200	0.50	0.09	20.0000		152	70 - 129			L5
Trichloroethene	20.8800	0.50	0.10	20.0000		104	73 - 117			
Trichlorofluoromethane	26.0300	0.50	0.23	20.0000		130	59 - 135			
Vinyl chloride	27.6000	0.50	0.13	20.0000		138	58 - 132			L4
Surrogate: 1,2-Dichloroethane-d4	26.83			25.0000		107	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.35			25.0000		101	73 - 124			
Surrogate: Dibromofluoromethane	26.32			25.0000		105	78 - 129			
Surrogate: Toluene-d8	25.47			25.0000		102	84 - 117			

LCS Dup (B2F1302-BS1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,1,1,2-Tetrachloroethane	18.9500	0.50	0.11	20.0000		94.8	79 - 116	10.9	20	
1,1,1-Trichloroethane	19.8200	0.50	0.21	20.0000		99.1	73 - 130	11.6	20	
1,1,2,2-Tetrachloroethane	21.0100	0.50	0.36	20.0000		105	71 - 122	2.07	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F1302 - MSVOA_LL_W (continued)

LCS Dup (B2F1302-BSD1) - Continued

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,1,2-Trichloroethane	19.7100	0.50	0.25	20.0000		98.6	70 - 124	6.24	20	
1,1-Dichloroethane	20.9600	0.50	0.09	20.0000		105	69 - 128	11.1	20	
1,1-Dichloroethene	20.7700	0.50	0.13	20.0000		104	65 - 137	9.89	20	
1,1-Dichloropropene	18.8500	0.50	0.13	20.0000		94.2	74 - 129	12.1	20	
1,2,3-Trichloropropane	20.3600	0.50	0.39	20.0000		102	74 - 123	1.78	20	
1,2,3-Trichlorobenzene	19.1800	0.50	0.18	20.0000		95.9	59 - 130	6.80	20	
1,2,4-Trichlorobenzene	19.9200	0.50	0.16	20.0000		99.6	65 - 125	5.04	20	
1,2,4-Trimethylbenzene	19.8000	0.50	0.14	20.0000		99.0	88 - 124	6.64	20	
1,2-Dibromo-3-chloropropane	18.3800	0.50	0.41	20.0000		91.9	61 - 127	2.65	20	
1,2-Dibromoethane	19.2000	0.50	0.24	20.0000		96.0	72 - 125	4.53	20	
1,2-Dichlorobenzene	19.6100	0.50	0.20	20.0000		98.0	84 - 113	5.31	20	
1,2-Dichloroethane	20.1200	0.50	0.20	20.0000		101	68 - 130	6.54	20	
1,2-Dichloropropane	20.6000	0.50	0.15	20.0000		103	77 - 121	8.99	20	
1,3,5-Trimethylbenzene	19.6000	0.50	0.13	20.0000		98.0	83 - 124	7.65	20	
1,3-Dichlorobenzene	19.4700	0.50	0.16	20.0000		97.4	83 - 112	6.89	20	
1,3-Dichloropropane	20.3900	0.50	0.21	20.0000		102	77 - 119	5.86	20	
1,4-Dichlorobenzene	19.6100	0.50	0.17	20.0000		98.0	79 - 115	4.44	20	
2,2-Dichloropropane	19.2400	0.50	0.38	20.0000		96.2	67 - 149	12.4	20	
2-Chlorotoluene	19.8000	0.50	0.11	20.0000		99.0	81 - 119	7.49	20	
4-Chlorotoluene	20.3800	0.50	0.12	20.0000		102	86 - 117	5.16	20	
4-Isopropyltoluene	19.8300	0.50	0.11	20.0000		99.2	82 - 131	6.30	20	
Benzene	20.3200	0.50	0.13	20.0000		102	75 - 124	9.11	20	
Bromobenzene	19.5300	0.50	0.21	20.0000		97.6	82 - 108	5.96	20	
Bromodichloromethane	18.9600	0.50	0.14	20.0000		94.8	80 - 120	6.33	20	
Bromoform	18.7400	0.50	0.20	20.0000		93.7	70 - 123	4.44	20	
Bromomethane	18.3000	0.50	0.40	20.0000		91.5	44 - 151	10.3	20	
Carbon tetrachloride	18.2500	0.50	0.09	20.0000		91.2	62 - 140	8.50	20	
Chlorobenzene	19.4100	0.50	0.13	20.0000		97.0	80 - 112	6.91	20	
Chloroethane	23.5400	0.50	0.15	20.0000		118	42 - 167	11.7	20	
Chloroform	19.5400	0.50	0.11	20.0000		97.7	77 - 122	9.55	20	
Chloromethane	20.5400	0.50	0.12	20.0000		103	33 - 153	15.5	20	
cis-1,2-Dichloroethene	15.7300	0.50	0.14	20.0000		78.6	75 - 121	10.4	20	
cis-1,3-Dichloropropene	18.9100	0.50	0.13	20.0000		94.6	73 - 127	8.51	20	
Dibromochloromethane	18.0100	0.50	0.16	20.0000		90.0	77 - 122	7.64	20	
Dibromomethane	19.3100	0.50	0.19	20.0000		96.6	75 - 121	4.55	20	
Dichlorodifluoromethane	20.5600	0.50	0.18	20.0000		103	0 - 171	10.3	20	
Ethylbenzene	20.3700	0.50	0.13	20.0000		102	82 - 119	7.42	20	
Hexachlorobutadiene	18.5300	0.50	0.15	20.0000		92.6	71 - 131	6.63	20	
Isopropylbenzene	20.5400	0.50	0.10	20.0000		103	75 - 126	7.63	20	
m,p-Xylene	39.1900	1.0	0.19	40.0000		98.0	86 - 119	8.43	20	
Methylene chloride	22.6800	1.0	0.71	20.0000		113	76 - 125	11.0	20	
n-Butylbenzene	19.9400	0.50	0.11	20.0000		99.7	81 - 125	8.45	20	
n-Propylbenzene	20.1500	0.50	0.10	20.0000		101	78 - 130	7.22	20	
Naphthalene	19.8300	0.50	0.41	20.0000		99.2	47 - 128	2.74	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F1302 - MSVOA_LL_W (continued)

LCS Dup (B2F1302-BSD1) - Continued

Prepared: 6/24/2022 Analyzed: 6/24/2022

o-Xylene	20.2600	0.50	0.13	20.0000		101	85 - 119	7.64	20	
sec-Butylbenzene	20.3100	0.50	0.09	20.0000		102	78 - 130	7.17	20	
Styrene	19.5300	0.50	0.13	20.0000		97.6	62 - 148	7.63	20	
tert-Butylbenzene	19.4000	0.50	0.09	20.0000		97.0	77 - 125	7.44	20	
Tetrachloroethene	19.3400	0.50	0.10	20.0000		96.7	73 - 120	9.60	20	
Toluene	20.3600	0.50	0.12	20.0000		102	79 - 119	7.29	20	
trans-1,2-Dichloroethene	27.1500	0.50	0.09	20.0000		136	70 - 129	11.0	20	L4
Trichloroethene	19.1300	0.50	0.10	20.0000		95.6	73 - 117	8.75	20	
Trichlorofluoromethane	23.5600	0.50	0.23	20.0000		118	59 - 135	9.96	20	
Vinyl chloride	24.7600	0.50	0.13	20.0000		124	58 - 132	10.8	20	
Surrogate: 1,2-Dichloroethane-d4	26.63			25.0000		107	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.98			25.0000		99.9	73 - 124			
Surrogate: Dibromofluoromethane	26.04			25.0000		104	78 - 129			
Surrogate: Toluene-d8	25.15			25.0000		101	84 - 117			



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3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F1301 - MSSEMI_W

Blank (B2F1301-BLK1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,4-Dioxane	ND	2.0	0.84							
Surrogate: 1,2-Dichlorobenzene-d4	94.24			100.000		94.2	17 - 119			
Surrogate: 2-Fluorobiphenyl	88.29			100.000		88.3	10 - 133			
Surrogate: 4-Terphenyl-d14	82.55			100.000		82.6	5 - 139			
Surrogate: Nitrobenzene-d5	90.49			100.000		90.5	13 - 150			

LCS (B2F1301-BS1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,4-Dioxane	101.500	2.0	0.84	100.000		102	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	91.45			100.000		91.4	17 - 119			
Surrogate: 2-Fluorobiphenyl	85.38			100.000		85.4	10 - 133			
Surrogate: 4-Terphenyl-d14	88.31			100.000		88.3	5 - 139			
Surrogate: Nitrobenzene-d5	94.72			100.000		94.7	13 - 150			

LCS Dup (B2F1301-BSD1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,4-Dioxane	101.330	2.0	0.84	100.000		101	75 - 155	0.168	20	
Surrogate: 1,2-Dichlorobenzene-d4	92.75			100.000		92.8	17 - 119			
Surrogate: 2-Fluorobiphenyl	85.19			100.000		85.2	10 - 133			
Surrogate: 4-Terphenyl-d14	87.76			100.000		87.8	5 - 139			
Surrogate: Nitrobenzene-d5	94.31			100.000		94.3	13 - 150			



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Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 06/29/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2F1304 - MSSEMI_W

Blank (B2F1304-BLK1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,4-Dioxane	ND	0.20	0.05							
Surrogate: 1,2-Dichlorobenzene-d4	1.075			1.00000		108	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9659			1.00000		96.6	8 - 111			
Surrogate: 4-Terphenyl-d14	1.009			1.00000		101	12 - 113			
Surrogate: Nitrobenzene-d5	1.155			1.00000		115	15 - 121			

LCS (B2F1304-BS1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,4-Dioxane	1.14777	0.20	0.05	1.00000		115	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	1.089			1.00000		109	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.8955			1.00000		89.6	8 - 111			
Surrogate: 4-Terphenyl-d14	1.036			1.00000		104	12 - 113			
Surrogate: Nitrobenzene-d5	1.075			1.00000		108	15 - 121			

LCS Dup (B2F1304-BSD1)

Prepared: 6/24/2022 Analyzed: 6/24/2022

1,4-Dioxane	1.11561	0.20	0.05	1.00000		112	75 - 155	2.84	20	
Surrogate: 1,2-Dichlorobenzene-d4	1.101			1.00000		110	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9236			1.00000		92.4	8 - 111			
Surrogate: 4-Terphenyl-d14	1.043			1.00000		104	12 - 113			
Surrogate: Nitrobenzene-d5	1.041			1.00000		104	15 - 121			



July 21, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 2201827

Client Reference : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Enclosed are the results for sample(s) received on June 30, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Victoria Michel', with a small flourish below it.

Victoria Michel, Project Assistant
Victoria.Michel@atlglobal.com

Authorized to Release on 07/21/22 14:06 on Behalf of

A handwritten signature in black ink, appearing to read 'Amy Leung'.

Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92108

Project Number : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Report To : Steve Netto

Reported : 07/21/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEFF	2201827-01	Groundwater	6/30/22 7:50	6/30/22 15:40
POX	2201827-02	Water	6/30/22 7:55	6/30/22 15:40
INF	2201827-03	Groundwater	6/30/22 8:00	6/30/22 15:40
EW-02	2201827-04	Groundwater	6/30/22 8:20	6/30/22 15:40
MW-29	2201827-05	Groundwater	6/30/22 8:35	6/30/22 15:40
TB-063022	2201827-06	Groundwater	6/30/22 8:00	6/30/22 15:40



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Report To : Steve Netto

Reported : 07/21/2022

Notes and Definitions

MO	Manufacturer omitted analyte within the stock standard.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Report To : Steve Netto

Reported : 07/21/2022

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyte: Residue, Dissolved

Analyst: LN

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2201827-01	CEFF	650	mg/L	10	1	B2G0815	07/07/2022	07/07/22 17:53	
2201827-02	POX	680	mg/L	10	1	B2G0815	07/07/2022	07/07/22 17:53	
2201827-03	INF	630	mg/L	10	1	B2G0815	07/07/2022	07/07/22 17:53	
2201827-04	EW-02	1300	mg/L	10	1	B2G0815	07/07/2022	07/07/22 17:53	
2201827-05	MW-29	800	mg/L	10	1	B2G0815	07/07/2022	07/07/22 17:53	

Total Metals by ICP-AES EPA 6010B

Analyte: Selenium

Analyst: en

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2201827-03	INF	ND	mg/L	0.010	1	B2G0826	07/11/2022	07/11/22 16:55	
2201827-04	EW-02	ND	mg/L	0.010	1	B2G0826	07/11/2022	07/11/22 17:05	
2201827-05	MW-29	ND	mg/L	0.010	1	B2G0826	07/11/2022	07/11/22 17:07	

Client Sample ID: INF

Lab ID: 2201827-03

Dissolved Metals by ICP-AES EPA 6010B

Analyst: en

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	95	0.50	1	B2G0840	07/11/2022	07/11/22 16:16	
Iron	ND	0.50	1	B2G0840	07/11/2022	07/11/22 16:16	
Magnesium	29	0.10	1	B2G0840	07/11/2022	07/11/22 16:16	
Manganese	ND	0.50	1	B2G0840	07/11/2022	07/11/22 16:16	
Selenium	ND	0.010	1	B2G0840	07/11/2022	07/11/22 16:16	
Sodium	74	1.0	1	B2G0840	07/11/2022	07/11/22 16:16	



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3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Report To : Steve Netto

Reported : 07/21/2022

Client Sample ID: EW-02

Lab ID: 2201827-04

Dissolved Metals by ICP-AES EPA 6010B

Analyst: en

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	88	0.50	1	B2G0840	07/11/2022	07/11/22 16:22	
Iron	ND	0.50	1	B2G0840	07/11/2022	07/11/22 16:22	
Magnesium	27	0.10	1	B2G0840	07/11/2022	07/11/22 16:22	
Manganese	ND	0.50	1	B2G0840	07/11/2022	07/11/22 16:22	
Selenium	ND	0.010	1	B2G0840	07/11/2022	07/11/22 16:22	
Sodium	66	1.0	1	B2G0840	07/11/2022	07/11/22 16:22	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Report To : Steve Netto

Reported : 07/21/2022

Client Sample ID: TB-063022

Lab ID: 2201827-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,1,1-Trichloroethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,1,2-Trichloroethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,1-Dichloroethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,1-Dichloroethene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,1-Dichloropropene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2,3-Trichloropropane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2-Dibromoethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2-Dichlorobenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2-Dichloroethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,2-Dichloropropane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,3-Dichlorobenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,3-Dichloropropane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
1,4-Dichlorobenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
2,2-Dichloropropane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
2-Chlorotoluene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
4-Chlorotoluene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
4-Isopropyltoluene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Benzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Bromobenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Bromochloromethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Bromodichloromethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Bromoform	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Bromomethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Carbon disulfide	ND	1.0	1	B2G0719	07/01/2022	07/01/22 13:22	
Carbon tetrachloride	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Chlorobenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Chloroethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Chloroform	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Chloromethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Dibromochloromethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Report To : Steve Netto

Reported : 07/21/2022

Client Sample ID: TB-063022

Lab ID: 2201827-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Dichlorodifluoromethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Ethyl Acetate	ND	10	1	B2G0719	07/01/2022	07/01/22 13:22	
Ethyl Ether	ND	10	1	B2G0719	07/01/2022	07/01/22 13:22	
Ethylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Freon-113	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Hexachlorobutadiene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Isopropylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
m,p-Xylene	ND	1.0	1	B2G0719	07/01/2022	07/01/22 13:22	
Methylene chloride	ND	1.0	1	B2G0719	07/01/2022	07/01/22 13:22	
n-Butylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
n-Propylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Naphthalene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
o-Xylene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
sec-Butylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Styrene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
tert-Butylbenzene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Tetrachloroethene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Toluene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
trans-1,3-Dichloropropene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Trichloroethene	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Trichlorofluoromethane	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Vinyl acetate	ND	10	1	B2G0719	07/01/2022	07/01/22 13:22	
Vinyl chloride	ND	0.50	1	B2G0719	07/01/2022	07/01/22 13:22	
Surrogate: 1,2-Dichloroethane-d4	112 %	64 - 155		B2G0719	07/01/2022	07/01/22 13:22	
Surrogate: 4-Bromofluorobenzene	98.4 %	73 - 124		B2G0719	07/01/2022	07/01/22 13:22	
Surrogate: Dibromofluoromethane	108 %	78 - 129		B2G0719	07/01/2022	07/01/22 13:22	
Surrogate: Toluene-d8	104 %	84 - 117		B2G0719	07/01/2022	07/01/22 13:22	



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3131 Camino De Rio North Suite 355

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QUALITY CONTROL SECTION

Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B2G0815 - No_Prep_WC1_W

Blank (B2G0815-BLK1)

Prepared: 7/7/2022 Analyzed: 7/7/2022

Residue, Dissolved ND 10 10

LCS (B2G0815-BS1)

Prepared: 7/7/2022 Analyzed: 7/7/2022

Residue, Dissolved 965.000 10 10 1000.00 96.5 80 - 120

Duplicate (B2G0815-DUP1)

Source: 2201827-01

Prepared: 7/7/2022 Analyzed: 7/7/2022

Residue, Dissolved 657.000 10 10 651.000 0.917 10



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Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0826 - EPA 3010A_W

Blank (B2G0826-BLK1)

Prepared: 7/11/2022 Analyzed: 7/11/2022

Selenium ND 0.010 0.0093

LCS (B2G0826-BS1)

Prepared: 7/11/2022 Analyzed: 7/11/2022

Selenium 0.467064 0.010 0.0093 0.500000 93.4 80 - 120

Matrix Spike (B2G0826-MS1)

Source: 2201890-01

Prepared: 7/11/2022 Analyzed: 7/11/2022

Selenium 0.496215 0.010 0.0093 0.500000 ND 99.2 57 - 146

Matrix Spike Dup (B2G0826-MSD1)

Source: 2201890-01

Prepared: 7/11/2022 Analyzed: 7/11/2022

Selenium 0.476373 0.010 0.0093 0.500000 ND 95.3 57 - 146 4.08 20



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Report To : Steve Netto

Reported : 07/21/2022

Dissolved Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0840 - EPA 3010A_W

Blank (B2G0840-BLK1)

Prepared: 7/11/2022 Analyzed: 7/12/2022

Calcium	ND	0.50	0.12							
Iron	ND	0.50	0.011							
Magnesium	ND	0.10	0.021							
Manganese	ND	0.50	0.0046							
Selenium	ND	0.010	0.0093							
Sodium	ND	1.0	0.12							

LCS (B2G0840-BS1)

Prepared: 7/11/2022 Analyzed: 7/12/2022

Calcium	5.61298	0.50	0.12	5.00000		112	80 - 120			
Iron	5.13855	0.50	0.011	5.00000		103	80 - 120			
Magnesium	5.12987	0.10	0.021	5.00000		103	80 - 120			
Manganese	0.544422	0.50	0.0046	0.500000		109	80 - 120			
Selenium	0.556838	0.010	0.0093	0.500000		111	80 - 120			
Sodium	4.89727	1.0	0.12	5.00000		97.9	80 - 120			

Matrix Spike (B2G0840-MS1)

Source: 2201827-03

Prepared: 7/11/2022 Analyzed: 7/12/2022

Calcium	89.9890	0.50	0.12	5.00000	94.9628	-99.5	0 - 218			M2
Iron	0.117217	0.50	0.011	5.00000	0.076094	0.822	46 - 158			M2
Magnesium	26.6476	0.10	0.021	5.00000	28.8533	-44.1	22 - 181			M2
Manganese	0.519490	0.50	0.0046	0.500000	ND	104	51 - 152			
Selenium	0.511576	0.010	0.0093	0.500000	ND	102	57 - 146			
Sodium	89.9914	1.0	0.12	5.00000	73.7190	325	0 - 194			M2

Matrix Spike Dup (B2G0840-MSD1)

Source: 2201827-03

Prepared: 7/11/2022 Analyzed: 7/12/2022

Calcium	91.9618	0.50	0.12	5.00000	94.9628	-60.0	0 - 218	2.17	20	M2
Iron	0.084548	0.50	0.011	5.00000	0.076094	0.169	46 - 158	32.4	20	M2
Magnesium	27.0507	0.10	0.021	5.00000	28.8533	-36.1	22 - 181	1.50	20	M2
Manganese	0.524653	0.50	0.0046	0.500000	ND	105	51 - 152	0.989	20	
Selenium	0.492592	0.010	0.0093	0.500000	ND	98.5	57 - 146	3.78	20	
Sodium	92.2798	1.0	0.12	5.00000	73.7190	371	0 - 194	2.51	20	M2



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0719 - MSVOA_LL_W

Blank (B2G0719-BLK1)

Prepared: 7/1/2022 Analyzed: 7/1/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromochloromethane	ND	0.50	0.16
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon disulfide	ND	1.0	0.07
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethyl Acetate	ND	10	8.7
Ethyl Ether	ND	10	2.0
Ethylbenzene	ND	0.50	0.13



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Report To : Steve Netto

Reported : 07/21/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0719 - MSVOA_LL_W (continued)

Blank (B2G0719-BLK1) - Continued

Prepared: 7/1/2022 Analyzed: 7/1/2022

Freon-113	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	ND	0.50	0.11
n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
trans-1,3-Dichloropropene	ND	0.50	0.23
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl acetate	ND	10	1.7
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	28.04		25.0000	112	64 - 155
Surrogate: 4-Bromofluorobenzene	24.95		25.0000	99.8	73 - 124
Surrogate: Dibromofluoromethane	25.96		25.0000	104	78 - 129
Surrogate: Toluene-d8	25.80		25.0000	103	84 - 117

LCS (B2G0719-BS1)

Prepared: 7/1/2022 Analyzed: 7/1/2022

1,1,1,2-Tetrachloroethane	19.6900	0.50	0.11	20.0000	98.4	79 - 116
1,1,1-Trichloroethane	22.1900	0.50	0.21	20.0000	111	73 - 130
1,1,2,2-Tetrachloroethane	19.2000	0.50	0.36	20.0000	96.0	71 - 122
1,1,2-Trichloroethane	20.2600	0.50	0.25	20.0000	101	70 - 124
1,1-Dichloroethane	23.3600	0.50	0.09	20.0000	117	69 - 128
1,1-Dichloroethene	23.2400	0.50	0.13	20.0000	116	65 - 137
1,1-Dichloropropene	20.4900	0.50	0.13	20.0000	102	74 - 129
1,2,3-Trichloropropene	19.6700	0.50	0.39	20.0000	98.4	74 - 123
1,2,3-Trichlorobenzene	19.6100	0.50	0.18	20.0000	98.0	59 - 130
1,2,4-Trichlorobenzene	19.9500	0.50	0.16	20.0000	99.8	65 - 125
1,2,4-Trimethylbenzene	20.5900	0.50	0.14	20.0000	103	88 - 124
1,2-Dibromo-3-chloropropane	18.4300	0.50	0.41	20.0000	92.2	61 - 127
1,2-Dibromoethane	19.7500	0.50	0.24	20.0000	98.8	72 - 125
1,2-Dichlorobenzene	19.9900	0.50	0.20	20.0000	100	84 - 113
1,2-Dichloroethane	20.7600	0.50	0.20	20.0000	104	68 - 130
1,2-Dichloropropane	21.7200	0.50	0.15	20.0000	109	77 - 121
1,3,5-Trimethylbenzene	20.4900	0.50	0.13	20.0000	102	83 - 124
1,3-Dichlorobenzene	20.1200	0.50	0.16	20.0000	101	83 - 112



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Report To : Steve Netto

Reported : 07/21/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0719 - MSVOA_LL_W (continued)

LCS (B2G0719-BS1) - Continued

Prepared: 7/1/2022 Analyzed: 7/1/2022

1,3-Dichloropropane	21.4100	0.50	0.21	20.0000	107	77 - 119			
1,4-Dichlorobenzene	19.9500	0.50	0.17	20.0000	99.8	79 - 115			
2,2-Dichloropropane	21.0900	0.50	0.38	20.0000	105	67 - 149			
2-Chlorotoluene	20.6000	0.50	0.11	20.0000	103	81 - 119			
4-Chlorotoluene	20.7200	0.50	0.12	20.0000	104	86 - 117			
4-Isopropyltoluene	20.5800	0.50	0.11	20.0000	103	82 - 131			
Benzene	21.6600	0.50	0.13	20.0000	108	75 - 124			
Bromobenzene	19.8900	0.50	0.21	20.0000	99.4	82 - 108			
Bromochloromethane	21.2900	0.50	0.16	20.0000	106	73 - 125			
Bromodichloromethane	19.8800	0.50	0.14	20.0000	99.4	80 - 120			
Bromoform	19.1400	0.50	0.20	20.0000	95.7	70 - 123			
Bromomethane	28.5300	0.50	0.40	20.0000	143	44 - 151			
Carbon disulfide	25.0300	1.0	0.07	20.0000	125	63 - 150			
Carbon tetrachloride	19.8100	0.50	0.09	20.0000	99.0	62 - 140			
Chlorobenzene	20.1200	0.50	0.13	20.0000	101	80 - 112			
Chloroethane	26.4700	0.50	0.15	20.0000	132	42 - 167			
Chloroform	21.7200	0.50	0.11	20.0000	109	77 - 122			
Chloromethane	23.7300	0.50	0.12	20.0000	119	33 - 153			
cis-1,2-Dichloroethene	17.2600	0.50	0.14	20.0000	86.3	75 - 121			
cis-1,3-Dichloropropene	18.6900	0.50	0.13	20.0000	93.4	73 - 127			
Dibromochloromethane	18.9800	0.50	0.16	20.0000	94.9	77 - 122			
Dibromomethane	19.6800	0.50	0.19	20.0000	98.4	75 - 121			
Dichlorodifluoromethane	22.5200	0.50	0.18	20.0000	113	0 - 171			
Ethyl Acetate	ND	10	8.7	200.000	NR	54 - 153			MO
Ethyl Ether	279.410	10	2.0	200.000	140	65 - 139			L4
Ethylbenzene	21.6100	0.50	0.13	20.0000	108	82 - 119			
Freon-113	28.7500	0.50	0.13	20.0000	144	49 - 156			
Hexachlorobutadiene	20.3500	0.50	0.15	20.0000	102	71 - 131			
Isopropylbenzene	21.5700	0.50	0.10	20.0000	108	75 - 126			
m,p-Xylene	41.5900	1.0	0.19	40.0000	104	86 - 119			
Methylene chloride	24.5900	1.0	0.71	20.0000	123	76 - 125			
n-Butylbenzene	21.1700	0.50	0.11	20.0000	106	81 - 125			
n-Propylbenzene	21.0800	0.50	0.10	20.0000	105	78 - 130			
Naphthalene	19.6700	0.50	0.41	20.0000	98.4	47 - 128			
o-Xylene	21.2700	0.50	0.13	20.0000	106	85 - 119			
sec-Butylbenzene	21.4600	0.50	0.09	20.0000	107	78 - 130			
Styrene	20.6200	0.50	0.13	20.0000	103	62 - 148			
tert-Butylbenzene	20.2300	0.50	0.09	20.0000	101	77 - 125			
Tetrachloroethene	20.4200	0.50	0.10	20.0000	102	73 - 120			
Toluene	21.4600	0.50	0.12	20.0000	107	79 - 119			
trans-1,2-Dichloroethene	29.4100	0.50	0.09	20.0000	147	70 - 129			L5
trans-1,3-Dichloropropene	18.5700	0.50	0.23	20.0000	92.8	67 - 137			
Trichloroethene	20.7300	0.50	0.10	20.0000	104	73 - 117			
Trichlorofluoromethane	26.9600	0.50	0.23	20.0000	135	59 - 135			



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Report To : Steve Netto

Reported : 07/21/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0719 - MSVOA_LL_W (continued)

LCS (B2G0719-BS1) - Continued

Prepared: 7/1/2022 Analyzed: 7/1/2022

Vinyl acetate	17.7200	10	1.7	200.000	8.86	67 - 155		MO
Vinyl chloride	27.9400	0.50	0.13	20.0000	140	58 - 132		L4
Surrogate: 1,2-Dichloroethane-d4	28.14			25.0000	113	64 - 155		
Surrogate: 4-Bromofluorobenzene	25.74			25.0000	103	73 - 124		
Surrogate: Dibromofluoromethane	26.80			25.0000	107	78 - 129		
Surrogate: Toluene-d8	25.42			25.0000	102	84 - 117		

LCS Dup (B2G0719-BSD1)

Prepared: 7/1/2022 Analyzed: 7/1/2022

1,1,1,2-Tetrachloroethane	19.0200	0.50	0.11	20.0000	95.1	79 - 116	3.46	20
1,1,1-Trichloroethane	21.2300	0.50	0.21	20.0000	106	73 - 130	4.42	20
1,1,2,2-Tetrachloroethane	19.3100	0.50	0.36	20.0000	96.6	71 - 122	0.571	20
1,1,2-Trichloroethane	20.7800	0.50	0.25	20.0000	104	70 - 124	2.53	20
1,1-Dichloroethane	22.5100	0.50	0.09	20.0000	113	69 - 128	3.71	20
1,1-Dichloroethene	22.0300	0.50	0.13	20.0000	110	65 - 137	5.35	20
1,1-Dichloropropene	19.5200	0.50	0.13	20.0000	97.6	74 - 129	4.85	20
1,2,3-Trichloropropane	19.8400	0.50	0.39	20.0000	99.2	74 - 123	0.861	20
1,2,3-Trichlorobenzene	18.4800	0.50	0.18	20.0000	92.4	59 - 130	5.93	20
1,2,4-Trichlorobenzene	20.0000	0.50	0.16	20.0000	100	65 - 125	0.250	20
1,2,4-Trimethylbenzene	19.9300	0.50	0.14	20.0000	99.6	88 - 124	3.26	20
1,2-Dibromo-3-chloropropane	17.8600	0.50	0.41	20.0000	89.3	61 - 127	3.14	20
1,2-Dibromoethane	19.1600	0.50	0.24	20.0000	95.8	72 - 125	3.03	20
1,2-Dichlorobenzene	19.3300	0.50	0.20	20.0000	96.6	84 - 113	3.36	20
1,2-Dichloroethane	20.8200	0.50	0.20	20.0000	104	68 - 130	0.289	20
1,2-Dichloropropane	21.3000	0.50	0.15	20.0000	106	77 - 121	1.95	20
1,3,5-Trimethylbenzene	19.5700	0.50	0.13	20.0000	97.8	83 - 124	4.59	20
1,3-Dichlorobenzene	19.4700	0.50	0.16	20.0000	97.4	83 - 112	3.28	20
1,3-Dichloropropane	20.5700	0.50	0.21	20.0000	103	77 - 119	4.00	20
1,4-Dichlorobenzene	19.2200	0.50	0.17	20.0000	96.1	79 - 115	3.73	20
2,2-Dichloropropane	20.3200	0.50	0.38	20.0000	102	67 - 149	3.72	20
2-Chlorotoluene	19.7800	0.50	0.11	20.0000	98.9	81 - 119	4.06	20
4-Chlorotoluene	19.9600	0.50	0.12	20.0000	99.8	86 - 117	3.74	20
4-Isopropyltoluene	19.6500	0.50	0.11	20.0000	98.2	82 - 131	4.62	20
Benzene	20.9600	0.50	0.13	20.0000	105	75 - 124	3.28	20
Bromobenzene	19.5300	0.50	0.21	20.0000	97.6	82 - 108	1.83	20
Bromochloromethane	20.7200	0.50	0.16	20.0000	104	73 - 125	2.71	20
Bromodichloromethane	19.3400	0.50	0.14	20.0000	96.7	80 - 120	2.75	20
Bromoform	18.7900	0.50	0.20	20.0000	94.0	70 - 123	1.85	20
Bromomethane	27.7200	0.50	0.40	20.0000	139	44 - 151	2.88	20
Carbon disulfide	23.7300	1.0	0.07	20.0000	119	63 - 150	5.33	20
Carbon tetrachloride	19.0500	0.50	0.09	20.0000	95.2	62 - 140	3.91	20
Chlorobenzene	19.3700	0.50	0.13	20.0000	96.8	80 - 112	3.80	20
Chloroethane	23.9800	0.50	0.15	20.0000	120	42 - 167	9.87	20
Chloroform	20.8800	0.50	0.11	20.0000	104	77 - 122	3.94	20
Chloromethane	21.6700	0.50	0.12	20.0000	108	33 - 153	9.07	20



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Quarterly Sample Task NO. 532.15

Report To : Steve Netto

Reported : 07/21/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

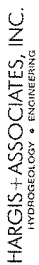
Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0719 - MSVOA_LL_W (continued)

LCS Dup (B2G0719-BSD1) - Continued

Prepared: 7/1/2022 Analyzed: 7/1/2022

cis-1,2-Dichloroethene	16.7000	0.50	0.14	20.0000		83.5	75 - 121	3.30	20	
cis-1,3-Dichloropropene	18.5500	0.50	0.13	20.0000		92.8	73 - 127	0.752	20	
Dibromochloromethane	18.3400	0.50	0.16	20.0000		91.7	77 - 122	3.43	20	
Dibromomethane	19.1500	0.50	0.19	20.0000		95.8	75 - 121	2.73	20	
Dichlorodifluoromethane	21.3200	0.50	0.18	20.0000		107	0 - 171	5.47	20	
Ethyl Acetate	ND	10	8.7	200.000		NR	54 - 153	NR	20	MO
Ethyl Ether	273.600	10	2.0	200.000		137	65 - 139	2.10	20	
Ethylbenzene	20.4600	0.50	0.13	20.0000		102	82 - 119	5.47	20	
Freon-113	27.4600	0.50	0.13	20.0000		137	49 - 156	4.59	20	
Hexachlorobutadiene	18.8600	0.50	0.15	20.0000		94.3	71 - 131	7.60	20	
Isopropylbenzene	20.6600	0.50	0.10	20.0000		103	75 - 126	4.31	20	
m,p-Xylene	39.2000	1.0	0.19	40.0000		98.0	86 - 119	5.92	20	
Methylene chloride	23.7300	1.0	0.71	20.0000		119	76 - 125	3.56	20	
n-Butylbenzene	20.5200	0.50	0.11	20.0000		103	81 - 125	3.12	20	
n-Propylbenzene	20.1100	0.50	0.10	20.0000		101	78 - 130	4.71	20	
Naphthalene	19.7700	0.50	0.41	20.0000		98.8	47 - 128	0.507	20	
o-Xylene	20.0600	0.50	0.13	20.0000		100	85 - 119	5.86	20	
sec-Butylbenzene	20.3400	0.50	0.09	20.0000		102	78 - 130	5.36	20	
Styrene	19.2100	0.50	0.13	20.0000		96.0	62 - 148	7.08	20	
tert-Butylbenzene	19.4800	0.50	0.09	20.0000		97.4	77 - 125	3.78	20	
Tetrachloroethene	19.3800	0.50	0.10	20.0000		96.9	73 - 120	5.23	20	
Toluene	20.7800	0.50	0.12	20.0000		104	79 - 119	3.22	20	
trans-1,2-Dichloroethene	28.7800	0.50	0.09	20.0000		144	70 - 129	2.17	20	L5
trans-1,3-Dichloropropene	18.3200	0.50	0.23	20.0000		91.6	67 - 137	1.36	20	
Trichloroethene	20.6100	0.50	0.10	20.0000		103	73 - 117	0.581	20	
Trichlorofluoromethane	25.4700	0.50	0.23	20.0000		127	59 - 135	5.68	20	
Vinyl acetate	18.3100	10	1.7	200.000		9.16	67 - 155	3.28	20	MO
Vinyl chloride	26.0300	0.50	0.13	20.0000		130	58 - 132	7.08	20	
Surrogate: 1,2-Dichloroethane-d4	27.97			25.0000		112	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.40			25.0000		102	73 - 124			
Surrogate: Dibromofluoromethane	26.96			25.0000		108	78 - 129			
Surrogate: Toluene-d8	25.70			25.0000		103	84 - 117			



Fax 858.455.6533

230

Received in good condition
Custody seals secure
Conforms to COC document

Temperature on receipt

Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical request space; indicate choice with $\sqrt{\text{or}}$ x
Note applicable preservatives, special instructions, and deviations from typical environmental sampling protocol
Consult project QA documents for specific instructions.



JK BioScience Environmental Laboratories

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- Consulting and Research
- Analytical Laboratories

CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201827-02 /POX
MATRIX: Water

REPORTING DATE: 07/19/2022

SAMPLE RECEIVED: 07/01/2022

LABORATORY NO.: 22-1792

DATE SAMPLED : 06/30/2022

CA STATE ELAP NO.: 2968

LACSD LAB I.D. NO.: 9249178

INVESTIGATION: SEE BELOW

PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.27	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrate (as N)	4.80	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrite (as N)	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Fluoride	0.38	mg/L	0.10	1	EPA 300.0	07/02/22
Orthophosphate as P	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Chloride	110	mg/L	5.00	5	EPA 300.0	07/02/22
Sulfate	150	mg/L	5.00	5	EPA 300.0	07/02/22
Chemical Oxygen Demand	27.0	mg/L	5.00	1	SM 5220 D	07/05/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____

CA State Environmental Laboratory Accreditation Program Certified Laboratories

1926 E. GLADWICK STREET RANCHO DOMINGUEZ, CA 90220 P. 213.292.6474 F. 213.292.6475 info@jkbioscience.com www.jkbioscience.com



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- Analytical Laboratories

CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201827-03 /INF
MATRIX: Groundwater

REPORTING DATE: 07/19/2022

SAMPLE RECEIVED: 07/01/2022

LABORATORY NO.: 22-1793

DATE SAMPLED : 06/30/2022

CA STATE ELAP NO.: 2968

LACSD LAB I.D. NO.: 9249178

INVESTIGATION: SEE BELOW

PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.27	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrate (as N)	4.90	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrite (as N)	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Fluoride	0.38	mg/L	0.10	1	EPA 300.0	07/02/22
Orthophosphate as P	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Chloride	110	mg/L	5.00	5	EPA 300.0	07/02/22
Sulfate	150	mg/L	5.00	5	EPA 300.0	07/02/22
Chemical Oxygen Demand	23.0	mg/L	5.00	1	SM 5220 D	07/05/22
Alkalinity, Total (as CaCO ₃)	212	mg/L	5.00	1	SM 2320 B	07/13/22
Bicarbonate (as CaCO ₃)	212	mg/L	5.00	1	SM 2320 B	07/13/22
Carbonate (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/13/22
Hydroxide (As CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/13/22
Total Organic Carbon	ND	mg/L	0.50	1	SM 5310 D	07/15/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201827-04 /EW-02
MATRIX: Groundwater

REPORTING DATE: 07/19/2022

SAMPLE RECEIVED: 07/01/2022

LABORATORY NO.: 22-1794

DATE SAMPLED : 06/30/2022

CA STATE ELAP NO.: 2968

LACSD LAB I.D. NO.: 9249178

INVESTIGATION: SEE BELOW

PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.22	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrate (as N)	4.00	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrite (as N)	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Fluoride	0.41	mg/L	0.10	1	EPA 300.0	07/02/22
Orthophosphate as P	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Chloride	87.0	mg/L	5.00	5	EPA 300.0	07/02/22
Sulfate	150	mg/L	5.00	5	EPA 300.0	07/02/22
Chemical Oxygen Demand	7.00	mg/L	5.00	1	SM 5220 D	07/05/22
Alkalinity, Total (as CaCO ₃)	202	mg/L	5.00	1	SM 2320 B	07/13/22
Bicarbonate (as CaCO ₃)	202	mg/L	5.00	1	SM 2320 B	07/13/22
Carbonate (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/13/22
Hydroxide (As CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/13/22
Total Organic Carbon	ND	mg/L	0.50	1	SM 5310 D	07/15/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



JK BioScience Environmental Laboratories

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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201827-05 /MW-29
MATRIX: Groundwater

REPORTING DATE: 07/19/2022

SAMPLE RECEIVED: 07/01/2022

LABORATORY NO.: 22-1795

DATE SAMPLED : 06/30/2022

CA STATE ELAP NO.: 2968

LACSD LAB I.D. NO.: 9249178

INVESTIGATION: SEE BELOW

PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.41	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrate (as N)	7.40	mg/L	0.10	1	EPA 300.0	07/02/22
Nitrite (as N)	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Fluoride	0.33	mg/L	0.10	1	EPA 300.0	07/02/22
Orthophosphate as P	ND	mg/L	0.10	1	EPA 300.0	07/02/22
Chloride	160	mg/L	5.00	5	EPA 300.0	07/02/22
Sulfate	140	mg/L	5.00	5	EPA 300.0	07/02/22
Chemical Oxygen Demand	37.0	mg/L	5.00	1	SM 5220 D	07/05/22
Alkalinity, Total (as CaCO ₃)	239	mg/L	5.00	1	SM 2320 B	07/13/22
Bicarbonate (as CaCO ₃)	239	mg/L	5.00	1	SM 2320 B	07/13/22
Carbonate (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/13/22
Hydroxide (As CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/13/22
Total Organic Carbon	ND	mg/L	0.50	1	SM 5310 D	07/15/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2201827

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Jerald Ancheta
(Jerald.Ancheta@atlglobal.com)
Sampler: Ruben Sanchez

RECEIVING LABORATORY:

JK Bioscience, Inc.
1926 E. Gladwick Street
Rancho Dominguez, CA 90220
Phone: (213) 292-6474
Fax:
PO#: SC16207

IMPORTANT : Please 'J-Flag' results to MDL. Please include Work Order # and PO # in your invoice.

QC Requirements:

☒ Routine ☐ MS/MSD
☐ Caltrans ☐ Level IV*
☐ DUP ☐ Other: _____

TAT Requirements:

☒ Standard
☐ Rush _____ Days
☐ Fastest Possible

EDD Requirements:

☐ Standard Excel
☐ Geotracker EDF
☐ EQuis
☐ Other: _____

* All Level IV sample containers (including empty ones) must be returned to ATL 30 days after receipt.

Analysis	Expires	Sampled	Comments
ATL Lab#: 2201827-02 / POX 22-1792 300_Anion_Scan [Anions by Ion Chromatography]	Water 07/02/22 07:55	06/30/22 07:55 Poly Unpres - 250mL	
COD_SUB [Chemical Oxygen Demand]	07/28/22 07:55	Amber H2SO4 - 125mL	

* For Anions - ~~Acetate~~, Bromide, chloride, Fluoride, Nitrate, Nitrite,
ortho-Phosphate, sulfate, ~~nitrate~~ *ju*

Prepared by: *C. H. Z.* 7/1/22
Sample Control Technician Date

Inspected by: *[Signature]* 7/1/22
PM Lead / SC Lead Date

Approved by: *Victoria Michip* 06/30/2022
Dedicated ATL Project Manager Date
[Signature] 7/1/22 8:41

Released By ATL Sample Control Date Time

Released By Courier Date Time

Released By Date Time

Received By Courier Date Time

[Signature] 7/1/22 8:41 AM
Received By Subcontract Laboratory Date Time

Received By Date Time

ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 2201827

Analysis	Expires	Sampled	Comments
ATL Lab#: 2201827-03 / INF 300_Anion_Scan [Anions by Ion Chromatography] 310.1_2320B_Speciated [Alkalinity, Speciated] COD_SUB [Chemical Oxygen Demand] TOC_SUB [Total Organic Carbon]	22-1793 Groundwater 07/02/22 08:00 07/14/22 08:00 07/28/22 08:00 07/28/22 08:00	06/30/22 08:00 Poly Unpres - 250mL Poly Unpres - 1000mL Amber Unpres -125mL Voa Vial - H2S04	
ATL Lab#: 2201827-04 / EW-02 300_Anion_Scan [Anions by Ion Chromatography] 310.1_2320B_Speciated [Alkalinity, Speciated] COD_SUB [Chemical Oxygen Demand] TOC_SUB [Total Organic Carbon]	22-1794 Groundwater 07/02/22 08:20 07/14/22 08:20 07/28/22 08:20 07/28/22 08:20	06/30/22 08:20 Poly Unpres - 250mL Amber Unpres -125mL Amber Unpres -125mL Voa Vial - H2S04	

Prepared by: *CMZ* 7/1/22
 Sample Control Technician Date

Inspected by: *[Signature]* 7/1/22
 PM Lead / SC Lead Date

Approved by: *Victor M. Lopez* 06/30/2022
 Dedicated ATL Project Manager Date

[Signature] 7/1/22 8:41

Released By ATL Sample Control Date Time

Received By Courier Date Time

Released By Courier Date Time

[Signature] 7/1/22 8:41 AM
 Received By Subcontract Laboratory Date Time

Released By Date Time

Received By Date Time

ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 2201827

Analysis	Expires	Sampled	Comments
ATL Lab#: 2201827-05 / MW-29	22-1795	Groundwater	06/30/22 08:35
300_Anion_Scan	07/02/22 08:35	Poly Unpres - 250mL	
[Anions by Ion Chromatography]			
310.1_2320B_Speciated	07/14/22 08:35	Poly Unpres - 1000mL	
[Alkalinity, Speciated]			
COD_SUB	07/28/22 08:35	Amber Unpres - 125mL	
[Chemical Oxygen Demand]			
TOC_SUB	07/28/22 08:35	Voa Vial - H2S04	
[Total Organic Carbon]			

Prepared by: [Signature] 7/1/22
 Sample Control Technician Date

Inspected by: [Signature] 7/1/22
 PM Lead / SC Lead Date

Approved by: [Signature] 06/30/2022
 Dedicated ATL Project Manager Date
[Signature] 7/1/22 8:41

Released By ATL Sample Control Date Time
 Released By Courier Date Time
 Released By Date Time

Received By Courier Date Time
[Signature] 7/1/22 8:41 PM
 Received By Subcontract Laboratory Date Time
 Received By Date Time

September 09, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 2201891

Client Reference : Raytheon Main Gets Monthly Sample / 532.15

Enclosed are the results for sample(s) received on July 07, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,



Edward Bae, Project Assistant
Edward.Bae@atlglobal.com

Authorized to Release on 09/09/22 13:44 on Behalf of



Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-070722	2201891-01	Water	7/07/22 8:00	7/07/22 15:22
CEFF	2201891-02	Groundwater	7/07/22 8:50	7/07/22 15:22
CBT	2201891-03	Groundwater	7/07/22 8:55	7/07/22 15:22
POX	2201891-04	Groundwater	7/07/22 9:00	7/07/22 15:22
PF	2201891-05	Groundwater	7/07/22 9:10	7/07/22 15:22
INF	2201891-06	Groundwater	7/07/22 9:15	7/07/22 15:22
EW-02	2201891-07	Groundwater	7/07/22 9:30	7/07/22 15:22
MW-29	2201891-08	Groundwater	7/07/22 9:45	7/07/22 15:22



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
B6	Associated method blank above PQL, analyte non-detected. Therefore, reanalysis is not necessary.
B	Analyte detected in the associated method blank above the PQL.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyte: Residue, Suspended

Analyst: LN

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2201891-05	PF	ND	mg/L	10	1	B2G0816	07/07/2022	07/07/22 15:28	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: TB-070722

Lab ID: 2201891-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,1,1-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,1,2-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,1-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,1-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,1-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2,3-Trichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2-Dibromoethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,3-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,3-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
1,4-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
2,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
2-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
4-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
4-Isopropyltoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Benzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Bromobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Bromodichloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Bromoform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Bromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Carbon tetrachloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Chlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Chloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Chloroform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Chloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Dibromochloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Dibromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Dichlorodifluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Ethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: TB-070722

Lab ID: 2201891-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Isopropylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
m,p-Xylene	ND	1.0	1	B2G0831	07/08/2022	07/08/22 16:49	
Methylene chloride	ND	1.0	1	B2G0831	07/08/2022	07/08/22 16:49	
n-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
n-Propylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Naphthalene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
o-Xylene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
sec-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Styrene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
tert-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Tetrachloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Toluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Trichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Trichlorofluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Vinyl chloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 16:49	
Surrogate: 1,2-Dichloroethane-d4	113 %	64 - 155		B2G0831	07/08/2022	07/08/22 16:49	
Surrogate: 4-Bromofluorobenzene	97.2 %	73 - 124		B2G0831	07/08/2022	07/08/22 16:49	
Surrogate: Dibromofluoromethane	111 %	78 - 129		B2G0831	07/08/2022	07/08/22 16:49	
Surrogate: Toluene-d8	104 %	84 - 117		B2G0831	07/08/2022	07/08/22 16:49	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: CEFF

Lab ID: 2201891-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,1,1-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,1,2-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,1-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,1-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,1-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2,3-Trichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2-Dibromoethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,3-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,3-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
1,4-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
2,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
2-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
4-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
4-Isopropyltoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Benzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Bromobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Bromodichloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Bromoform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Bromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Carbon tetrachloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Chlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Chloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Chloroform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Chloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Dibromochloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Dibromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Dichlorodifluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Ethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: CEFF

Lab ID: 2201891-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Isopropylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
m,p-Xylene	ND	1.0	1	B2G0831	07/08/2022	07/08/22 17:15	
Methylene chloride	ND	1.0	1	B2G0831	07/08/2022	07/08/22 17:15	
n-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
n-Propylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Naphthalene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
o-Xylene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
sec-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Styrene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
tert-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Tetrachloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Toluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Trichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Trichlorofluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Vinyl chloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:15	
Surrogate: 1,2-Dichloroethane-d4	116 %	64 - 155		B2G0831	07/08/2022	07/08/22 17:15	
Surrogate: 4-Bromofluorobenzene	96.4 %	73 - 124		B2G0831	07/08/2022	07/08/22 17:15	
Surrogate: Dibromofluoromethane	113 %	78 - 129		B2G0831	07/08/2022	07/08/22 17:15	
Surrogate: Toluene-d8	105 %	84 - 117		B2G0831	07/08/2022	07/08/22 17:15	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2G0834	07/08/2022	07/08/22 13:12	
Surrogate: 1,2-Dichlorobenzene-d4	108 %	13 - 99		B2G0834	07/08/2022	07/08/22 13:12	S12
Surrogate: 2-Fluorobiphenyl	94.6 %	8 - 111		B2G0834	07/08/2022	07/08/22 13:12	
Surrogate: 4-Terphenyl-d14	108 %	12 - 113		B2G0834	07/08/2022	07/08/22 13:12	
Surrogate: Nitrobenzene-d5	105 %	15 - 121		B2G0834	07/08/2022	07/08/22 13:12	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: CBT

Lab ID: 2201891-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,1,1-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,1,2-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,1-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,1-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,1-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2,3-Trichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2-Dibromoethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,3-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,3-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
1,4-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
2,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
2-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
4-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
4-Isopropyltoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Benzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Bromobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Bromodichloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Bromoform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Bromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Carbon tetrachloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Chlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Chloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Chloroform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Chloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Dibromochloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Dibromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Dichlorodifluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Ethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: CBT

Lab ID: 2201891-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Isopropylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
m,p-Xylene	ND	1.0	1	B2G0831	07/08/2022	07/08/22 17:41	
Methylene chloride	ND	1.0	1	B2G0831	07/08/2022	07/08/22 17:41	
n-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
n-Propylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Naphthalene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
o-Xylene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
sec-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Styrene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
tert-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Tetrachloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Toluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Trichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Trichlorofluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Vinyl chloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 17:41	
Surrogate: 1,2-Dichloroethane-d4	119 %	64 - 155		B2G0831	07/08/2022	07/08/22 17:41	
Surrogate: 4-Bromofluorobenzene	95.6 %	73 - 124		B2G0831	07/08/2022	07/08/22 17:41	
Surrogate: Dibromofluoromethane	113 %	78 - 129		B2G0831	07/08/2022	07/08/22 17:41	
Surrogate: Toluene-d8	103 %	84 - 117		B2G0831	07/08/2022	07/08/22 17:41	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2G0834	07/08/2022	07/08/22 13:38	
Surrogate: 1,2-Dichlorobenzene-d4	107 %	13 - 99		B2G0834	07/08/2022	07/08/22 13:38	S12
Surrogate: 2-Fluorobiphenyl	93.2 %	8 - 111		B2G0834	07/08/2022	07/08/22 13:38	
Surrogate: 4-Terphenyl-d14	110 %	12 - 113		B2G0834	07/08/2022	07/08/22 13:38	
Surrogate: Nitrobenzene-d5	108 %	15 - 121		B2G0834	07/08/2022	07/08/22 13:38	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: POX

Lab ID: 2201891-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,1,1-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,1,2-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,1-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,1-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,1-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2,3-Trichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2-Dibromoethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,3-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,3-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
1,4-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
2,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
2-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
4-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
4-Isopropyltoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Benzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Bromobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Bromodichloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Bromoform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Bromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Carbon tetrachloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Chlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Chloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Chloroform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Chloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Dibromochloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Dibromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Dichlorodifluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Ethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: POX

Lab ID: 2201891-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Isopropylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
m,p-Xylene	ND	1.0	1	B2G0831	07/08/2022	07/08/22 18:07	
Methylene chloride	ND	1.0	1	B2G0831	07/08/2022	07/08/22 18:07	
n-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
n-Propylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Naphthalene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
o-Xylene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
sec-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Styrene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
tert-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Tetrachloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Toluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Trichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Trichlorofluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Vinyl chloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:07	
Surrogate: 1,2-Dichloroethane-d4	117 %	64 - 155		B2G0831	07/08/2022	07/08/22 18:07	
Surrogate: 4-Bromofluorobenzene	94.7 %	73 - 124		B2G0831	07/08/2022	07/08/22 18:07	
Surrogate: Dibromofluoromethane	113 %	78 - 129		B2G0831	07/08/2022	07/08/22 18:07	
Surrogate: Toluene-d8	105 %	84 - 117		B2G0831	07/08/2022	07/08/22 18:07	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2G0834	07/08/2022	07/08/22 14:04	
Surrogate: 1,2-Dichlorobenzene-d4	101 %	13 - 99		B2G0834	07/08/2022	07/08/22 14:04	S12
Surrogate: 2-Fluorobiphenyl	94.0 %	8 - 111		B2G0834	07/08/2022	07/08/22 14:04	
Surrogate: 4-Terphenyl-d14	110 %	12 - 113		B2G0834	07/08/2022	07/08/22 14:04	
Surrogate: Nitrobenzene-d5	101 %	15 - 121		B2G0834	07/08/2022	07/08/22 14:04	



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Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: INF

Lab ID: 2201891-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,1,1-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,1,2-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,1-Dichloroethane	0.58	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,1-Dichloroethene	73	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,1-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2,3-Trichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2-Dibromoethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,3-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,3-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
1,4-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
2,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
2-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
4-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
4-Isopropyltoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Benzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Bromobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Bromodichloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Bromoform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Bromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Carbon tetrachloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Chlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Chloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Chloroform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Chloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Dibromochloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Dibromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Dichlorodifluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Ethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: INF

Lab ID: 2201891-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Isopropylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
m,p-Xylene	ND	1.0	1	B2G0831	07/08/2022	07/08/22 18:33	
Methylene chloride	ND	1.0	1	B2G0831	07/08/2022	07/08/22 18:33	
n-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
n-Propylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Naphthalene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
o-Xylene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
sec-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Styrene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
tert-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Tetrachloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Toluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Trichloroethene	0.54	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Trichlorofluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
Vinyl chloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:33	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>117 %</i>	<i>64 - 155</i>		B2G0831	07/08/2022	07/08/22 18:33	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.4 %</i>	<i>73 - 124</i>		B2G0831	07/08/2022	07/08/22 18:33	
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>	<i>78 - 129</i>		B2G0831	07/08/2022	07/08/22 18:33	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>84 - 117</i>		B2G0831	07/08/2022	07/08/22 18:33	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	23	2.0	1	B2G0833	07/08/2022	07/08/22 16:28	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>94.5 %</i>	<i>17 - 119</i>		B2G0833	07/08/2022	07/08/22 16:28	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>88.9 %</i>	<i>10 - 133</i>		B2G0833	07/08/2022	07/08/22 16:28	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>86.0 %</i>	<i>5 - 139</i>		B2G0833	07/08/2022	07/08/22 16:28	
<i>Surrogate: Nitrobenzene-d5</i>	<i>88.5 %</i>	<i>13 - 150</i>		B2G0833	07/08/2022	07/08/22 16:28	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: EW-02

Lab ID: 2201891-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,1,1-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,1,2-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,1-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,1-Dichloroethene	20	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,1-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2,3-Trichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2-Dibromoethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,3-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,3-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
1,4-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
2,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
2-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
4-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
4-Isopropyltoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Benzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Bromobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Bromodichloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Bromoform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Bromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Carbon tetrachloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Chlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Chloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Chloroform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Chloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Dibromochloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Dibromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Dichlorodifluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Ethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: EW-02

Lab ID: 2201891-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Isopropylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
m,p-Xylene	ND	1.0	1	B2G0831	07/08/2022	07/08/22 18:59	
Methylene chloride	ND	1.0	1	B2G0831	07/08/2022	07/08/22 18:59	
n-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
n-Propylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Naphthalene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
o-Xylene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
sec-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Styrene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
tert-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Tetrachloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Toluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Trichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Trichlorofluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Vinyl chloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 18:59	
Surrogate: 1,2-Dichloroethane-d4	121 %	64 - 155		B2G0831	07/08/2022	07/08/22 18:59	
Surrogate: 4-Bromofluorobenzene	97.0 %	73 - 124		B2G0831	07/08/2022	07/08/22 18:59	
Surrogate: Dibromofluoromethane	116 %	78 - 129		B2G0831	07/08/2022	07/08/22 18:59	
Surrogate: Toluene-d8	103 %	84 - 117		B2G0831	07/08/2022	07/08/22 18:59	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	3.9	2.0	1	B2G0833	07/08/2022	07/08/22 16:55	
Surrogate: 1,2-Dichlorobenzene-d4	96.0 %	17 - 119		B2G0833	07/08/2022	07/08/22 16:55	
Surrogate: 2-Fluorobiphenyl	90.9 %	10 - 133		B2G0833	07/08/2022	07/08/22 16:55	
Surrogate: 4-Terphenyl-d14	84.0 %	5 - 139		B2G0833	07/08/2022	07/08/22 16:55	
Surrogate: Nitrobenzene-d5	87.0 %	13 - 150		B2G0833	07/08/2022	07/08/22 16:55	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: MW-29

Lab ID: 2201891-08

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,1,1-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,1,2-Trichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,1-Dichloroethane	1.8	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,1-Dichloroethene	230	5.0	10	B2G0831	07/08/2022	07/08/22 19:51	
1,1-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2,3-Trichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2,3-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2,4-Trichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2,4-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2-Dibromoethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2-Dichloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,3,5-Trimethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,3-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,3-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
1,4-Dichlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
2,2-Dichloropropane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
2-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
4-Chlorotoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
4-Isopropyltoluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Benzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Bromobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Bromodichloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Bromoform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Bromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Carbon tetrachloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Chlorobenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Chloroethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Chloroform	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Chloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
cis-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
cis-1,3-Dichloropropene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Dibromochloromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Dibromomethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Dichlorodifluoromethane	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Ethylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	



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Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Client Sample ID: MW-29

Lab ID: 2201891-08

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Isopropylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
m,p-Xylene	ND	1.0	1	B2G0831	07/08/2022	07/08/22 19:25	
Methylene chloride	ND	1.0	1	B2G0831	07/08/2022	07/08/22 19:25	
n-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
n-Propylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Naphthalene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
o-Xylene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
sec-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Styrene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
tert-Butylbenzene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Tetrachloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Toluene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
trans-1,2-Dichloroethene	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Trichloroethene	1.9	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Trichlorofluoromethane	0.99	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
Vinyl chloride	ND	0.50	1	B2G0831	07/08/2022	07/08/22 19:25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>119 %</i>	<i>64 - 155</i>		B2G0831	07/08/2022	07/08/22 19:25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>119 %</i>	<i>64 - 155</i>		B2G0831	07/08/2022	07/08/22 19:51	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.6 %</i>	<i>73 - 124</i>		B2G0831	07/08/2022	07/08/22 19:25	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.3 %</i>	<i>73 - 124</i>		B2G0831	07/08/2022	07/08/22 19:51	
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>	<i>78 - 129</i>		B2G0831	07/08/2022	07/08/22 19:25	
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>	<i>78 - 129</i>		B2G0831	07/08/2022	07/08/22 19:51	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>84 - 117</i>		B2G0831	07/08/2022	07/08/22 19:25	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>84 - 117</i>		B2G0831	07/08/2022	07/08/22 19:51	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	80	2.0	1	B2G0833	07/08/2022	07/08/22 17:22	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>99.8 %</i>	<i>17 - 119</i>		B2G0833	07/08/2022	07/08/22 17:22	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>90.4 %</i>	<i>10 - 133</i>		B2G0833	07/08/2022	07/08/22 17:22	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>83.2 %</i>	<i>5 - 139</i>		B2G0833	07/08/2022	07/08/22 17:22	
<i>Surrogate: Nitrobenzene-d5</i>	<i>87.1 %</i>	<i>13 - 150</i>		B2G0833	07/08/2022	07/08/22 17:22	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

QUALITY CONTROL SECTION

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0816 - No_Prep_WC1_W

Blank (B2G0816-BLK1)

Prepared: 7/7/2022 Analyzed: 7/7/2022

Residue, Suspended ND 10 10

LCS (B2G0816-BS1)

Prepared: 7/7/2022 Analyzed: 7/7/2022

Residue, Suspended 109.000 10 10 100.000 109 80 - 120

Duplicate (B2G0816-DUP1)

Source: 2201826-01

Prepared: 7/7/2022 Analyzed: 7/7/2022

Residue, Suspended 95.0000 10 10 99.0000 4.12 10



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0831 - MSVOA_LL_W

Blank (B2G0831-BLK1)

Prepared: 7/8/2022 Analyzed: 7/8/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	1.13000	1.0	0.71
n-Butylbenzene	ND	0.50	0.11

B6



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Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0831 - MSVOA_LL_W (continued)

Blank (B2G0831-BLK1) - Continued

Prepared: 7/8/2022 Analyzed: 7/8/2022

n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	30.00		25.0000	120	64 - 155
Surrogate: 4-Bromofluorobenzene	24.55		25.0000	98.2	73 - 124
Surrogate: Dibromofluoromethane	28.27		25.0000	113	78 - 129
Surrogate: Toluene-d8	25.91		25.0000	104	84 - 117

LCS (B2G0831-BS1)

Prepared: 7/8/2022 Analyzed: 7/8/2022

1,1,1,2-Tetrachloroethane	20.7500	0.50	0.11	20.0000	104	79 - 116
1,1,1-Trichloroethane	22.4300	0.50	0.21	20.0000	112	73 - 130
1,1,2,2-Tetrachloroethane	20.3100	0.50	0.36	20.0000	102	71 - 122
1,1,2-Trichloroethane	21.9000	0.50	0.25	20.0000	110	70 - 124
1,1-Dichloroethane	23.8100	0.50	0.09	20.0000	119	69 - 128
1,1-Dichloroethene	23.8000	0.50	0.13	20.0000	119	65 - 137
1,1-Dichloropropene	21.4500	0.50	0.13	20.0000	107	74 - 129
1,2,3-Trichloropropane	20.9400	0.50	0.39	20.0000	105	74 - 123
1,2,3-Trichlorobenzene	20.1200	0.50	0.18	20.0000	101	59 - 130
1,2,4-Trichlorobenzene	20.6100	0.50	0.16	20.0000	103	65 - 125
1,2,4-Trimethylbenzene	21.4200	0.50	0.14	20.0000	107	88 - 124
1,2-Dibromo-3-chloropropane	18.5500	0.50	0.41	20.0000	92.8	61 - 127
1,2-Dibromoethane	20.1400	0.50	0.24	20.0000	101	72 - 125
1,2-Dichlorobenzene	21.0000	0.50	0.20	20.0000	105	84 - 113
1,2-Dichloroethane	21.9300	0.50	0.20	20.0000	110	68 - 130
1,2-Dichloropropane	22.6600	0.50	0.15	20.0000	113	77 - 121
1,3,5-Trimethylbenzene	21.3400	0.50	0.13	20.0000	107	83 - 124
1,3-Dichlorobenzene	21.3200	0.50	0.16	20.0000	107	83 - 112
1,3-Dichloropropane	22.1700	0.50	0.21	20.0000	111	77 - 119
1,4-Dichlorobenzene	21.0600	0.50	0.17	20.0000	105	79 - 115
2,2-Dichloropropane	20.5600	0.50	0.38	20.0000	103	67 - 149
2-Chlorotoluene	21.6000	0.50	0.11	20.0000	108	81 - 119
4-Chlorotoluene	21.9500	0.50	0.12	20.0000	110	86 - 117
4-Isopropyltoluene	21.2900	0.50	0.11	20.0000	106	82 - 131
Benzene	22.6100	0.50	0.13	20.0000	113	75 - 124
Bromobenzene	21.0000	0.50	0.21	20.0000	105	82 - 108
Bromodichloromethane	20.7800	0.50	0.14	20.0000	104	80 - 120



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0831 - MSVOA_LL_W (continued)

LCS (B2G0831-BS1) - Continued

Prepared: 7/8/2022 Analyzed: 7/8/2022

Bromoform	20.1000	0.50	0.20	20.0000		100	70 - 123			
Bromomethane	30.7500	0.50	0.40	20.0000		154	44 - 151			L4
Carbon tetrachloride	20.1000	0.50	0.09	20.0000		100	62 - 140			
Chlorobenzene	20.9700	0.50	0.13	20.0000		105	80 - 112			
Chloroethane	26.4000	0.50	0.15	20.0000		132	42 - 167			
Chloroform	22.0700	0.50	0.11	20.0000		110	77 - 122			
Chloromethane	21.8900	0.50	0.12	20.0000		109	33 - 153			
cis-1,2-Dichloroethene	18.0900	0.50	0.14	20.0000		90.4	75 - 121			
cis-1,3-Dichloropropene	19.5100	0.50	0.13	20.0000		97.6	73 - 127			
Dibromochloromethane	19.7400	0.50	0.16	20.0000		98.7	77 - 122			
Dibromomethane	20.9300	0.50	0.19	20.0000		105	75 - 121			
Dichlorodifluoromethane	20.4300	0.50	0.18	20.0000		102	0 - 171			
Ethylbenzene	22.1100	0.50	0.13	20.0000		111	82 - 119			
Hexachlorobutadiene	20.3800	0.50	0.15	20.0000		102	71 - 131			
Isopropylbenzene	22.5500	0.50	0.10	20.0000		113	75 - 126			
m,p-Xylene	42.7200	1.0	0.19	40.0000		107	86 - 119			
Methylene chloride	24.2400	1.0	0.71	20.0000		121	76 - 125			B
n-Butylbenzene	22.1400	0.50	0.11	20.0000		111	81 - 125			
n-Propylbenzene	21.9200	0.50	0.10	20.0000		110	78 - 130			
Naphthalene	20.4800	0.50	0.41	20.0000		102	47 - 128			
o-Xylene	21.9000	0.50	0.13	20.0000		110	85 - 119			
sec-Butylbenzene	22.0300	0.50	0.09	20.0000		110	78 - 130			
Styrene	20.9500	0.50	0.13	20.0000		105	62 - 148			
tert-Butylbenzene	21.1300	0.50	0.09	20.0000		106	77 - 125			
Tetrachloroethene	20.8500	0.50	0.10	20.0000		104	73 - 120			
Toluene	22.3200	0.50	0.12	20.0000		112	79 - 119			
trans-1,2-Dichloroethene	31.1400	0.50	0.09	20.0000		156	70 - 129			L5
Trichloroethene	21.9700	0.50	0.10	20.0000		110	73 - 117			
Trichlorofluoromethane	27.8500	0.50	0.23	20.0000		139	59 - 135			L4
Vinyl chloride	27.1600	0.50	0.13	20.0000		136	58 - 132			L4
Surrogate: 1,2-Dichloroethane-d4	27.40			25.0000		110	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.25			25.0000		101	73 - 124			
Surrogate: Dibromofluoromethane	26.71			25.0000		107	78 - 129			
Surrogate: Toluene-d8	25.60			25.0000		102	84 - 117			

LCS Dup (B2G0831-BSD1)

Prepared: 7/8/2022 Analyzed: 7/8/2022

1,1,1,2-Tetrachloroethane	17.8900	0.50	0.11	20.0000		89.4	79 - 116	14.8	20	
1,1,1-Trichloroethane	18.4000	0.50	0.21	20.0000		92.0	73 - 130	19.7	20	
1,1,2,2-Tetrachloroethane	16.6700	0.50	0.36	20.0000		83.4	71 - 122	19.7	20	
1,1,2-Trichloroethane	19.0300	0.50	0.25	20.0000		95.2	70 - 124	14.0	20	
1,1-Dichloroethane	21.1300	0.50	0.09	20.0000		106	69 - 128	11.9	20	
1,1-Dichloroethene	19.0500	0.50	0.13	20.0000		95.2	65 - 137	22.2	20	R
1,1-Dichloropropene	16.6600	0.50	0.13	20.0000		83.3	74 - 129	25.1	20	R
1,2,3-Trichloropropane	17.7800	0.50	0.39	20.0000		88.9	74 - 123	16.3	20	
1,2,3-Trichlorobenzene	15.5700	0.50	0.18	20.0000		77.8	59 - 130	25.5	20	R



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3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	Limit	Notes

Batch B2G0831 - MSVOA_LL_W (continued)

LCS Dup (B2G0831-BSD1) - Continued

Prepared: 7/8/2022 Analyzed: 7/8/2022

1,2,4-Trichlorobenzene	16.9200	0.50	0.16	20.0000		84.6	65 - 125	19.7	20	
1,2,4-Trimethylbenzene	17.7300	0.50	0.14	20.0000		88.6	88 - 124	18.9	20	
1,2-Dibromo-3-chloropropane	15.1300	0.50	0.41	20.0000		75.6	61 - 127	20.3	20	R
1,2-Dibromoethane	17.3100	0.50	0.24	20.0000		86.6	72 - 125	15.1	20	
1,2-Dichlorobenzene	17.9300	0.50	0.20	20.0000		89.6	84 - 113	15.8	20	
1,2-Dichloroethane	19.7000	0.50	0.20	20.0000		98.5	68 - 130	10.7	20	
1,2-Dichloropropane	19.7200	0.50	0.15	20.0000		98.6	77 - 121	13.9	20	
1,3,5-Trimethylbenzene	17.2700	0.50	0.13	20.0000		86.4	83 - 124	21.1	20	R
1,3-Dichlorobenzene	17.5100	0.50	0.16	20.0000		87.6	83 - 112	19.6	20	
1,3-Dichloropropane	19.0600	0.50	0.21	20.0000		95.3	77 - 119	15.1	20	
1,4-Dichlorobenzene	17.5200	0.50	0.17	20.0000		87.6	79 - 115	18.4	20	
2,2-Dichloropropane	15.6400	0.50	0.38	20.0000		78.2	67 - 149	27.2	20	R
2-Chlorotoluene	18.1100	0.50	0.11	20.0000		90.6	81 - 119	17.6	20	
4-Chlorotoluene	17.8800	0.50	0.12	20.0000		89.4	86 - 117	20.4	20	R
4-Isopropyltoluene	17.1100	0.50	0.11	20.0000		85.6	82 - 131	21.8	20	R
Benzene	19.1200	0.50	0.13	20.0000		95.6	75 - 124	16.7	20	
Bromobenzene	17.9100	0.50	0.21	20.0000		89.6	82 - 108	15.9	20	
Bromodichloromethane	18.3300	0.50	0.14	20.0000		91.6	80 - 120	12.5	20	
Bromoform	16.4700	0.50	0.20	20.0000		82.4	70 - 123	19.9	20	
Bromomethane	28.6400	0.50	0.40	20.0000		143	44 - 151	7.11	20	
Carbon tetrachloride	15.4000	0.50	0.09	20.0000		77.0	62 - 140	26.5	20	R
Chlorobenzene	18.0200	0.50	0.13	20.0000		90.1	80 - 112	15.1	20	
Chloroethane	21.9400	0.50	0.15	20.0000		110	42 - 167	18.5	20	
Chloroform	19.9200	0.50	0.11	20.0000		99.6	77 - 122	10.2	20	
Chloromethane	19.1000	0.50	0.12	20.0000		95.5	33 - 153	13.6	20	
cis-1,2-Dichloroethene	16.2400	0.50	0.14	20.0000		81.2	75 - 121	10.8	20	
cis-1,3-Dichloropropene	16.6000	0.50	0.13	20.0000		83.0	73 - 127	16.1	20	
Dibromochloromethane	17.0400	0.50	0.16	20.0000		85.2	77 - 122	14.7	20	
Dibromomethane	17.8600	0.50	0.19	20.0000		89.3	75 - 121	15.8	20	
Dichlorodifluoromethane	14.9000	0.50	0.18	20.0000		74.5	0 - 171	31.3	20	R
Ethylbenzene	18.0200	0.50	0.13	20.0000		90.1	82 - 119	20.4	20	R
Hexachlorobutadiene	15.6200	0.50	0.15	20.0000		78.1	71 - 131	26.4	20	R
Isopropylbenzene	17.8800	0.50	0.10	20.0000		89.4	75 - 126	23.1	20	R
m,p-Xylene	35.2100	1.0	0.19	40.0000		88.0	86 - 119	19.3	20	
Methylene chloride	22.6600	1.0	0.71	20.0000		113	76 - 125	6.74	20	B
n-Butylbenzene	17.3200	0.50	0.11	20.0000		86.6	81 - 125	24.4	20	R
n-Propylbenzene	17.4300	0.50	0.10	20.0000		87.2	78 - 130	22.8	20	R
Naphthalene	15.6900	0.50	0.41	20.0000		78.4	47 - 128	26.5	20	R
o-Xylene	18.2300	0.50	0.13	20.0000		91.2	85 - 119	18.3	20	
sec-Butylbenzene	17.5300	0.50	0.09	20.0000		87.6	78 - 130	22.8	20	R
Styrene	17.9600	0.50	0.13	20.0000		89.8	62 - 148	15.4	20	
tert-Butylbenzene	16.7000	0.50	0.09	20.0000		83.5	77 - 125	23.4	20	R
Tetrachloroethene	16.3600	0.50	0.10	20.0000		81.8	73 - 120	24.1	20	R
Toluene	18.5500	0.50	0.12	20.0000		92.8	79 - 119	18.4	20	
trans-1,2-Dichloroethene	26.2000	0.50	0.09	20.0000		131	70 - 129	17.2	20	L5



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Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G0831 - MSVOA_LL_W (continued)

LCS Dup (B2G0831-BSD1) - Continued

Prepared: 7/8/2022 Analyzed: 7/8/2022

Trichloroethene	18.0200	0.50	0.10	20.0000		90.1	73 - 117	19.8	20	
Trichlorofluoromethane	20.9200	0.50	0.23	20.0000		105	59 - 135	28.4	20	R
Vinyl chloride	21.5400	0.50	0.13	20.0000		108	58 - 132	23.1	20	R
Surrogate: 1,2-Dichloroethane-d4	27.97			25.0000		112	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.77			25.0000		99.1	73 - 124			
Surrogate: Dibromofluoromethane	27.61			25.0000		110	78 - 129			
Surrogate: Toluene-d8	25.76			25.0000		103	84 - 117			



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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes
Batch B2G0833 - MSSEMI_W									
Blank (B2G0833-BLK1)					Prepared: 7/8/2022 Analyzed: 7/8/2022				
1,4-Dioxane	ND	2.0	0.84						
Surrogate: 1,2-Dichlorobenzene-d4	94.76			100.000	94.8	17 - 119			
Surrogate: 2-Fluorobiphenyl	89.88			100.000	89.9	10 - 133			
Surrogate: 4-Terphenyl-d14	83.61			100.000	83.6	5 - 139			
Surrogate: Nitrobenzene-d5	89.30			100.000	89.3	13 - 150			
LCS (B2G0833-BS1)					Prepared: 7/8/2022 Analyzed: 7/8/2022				
1,4-Dioxane	92.3100	2.0	0.84	100.000	92.3	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	97.44			100.000	97.4	17 - 119			
Surrogate: 2-Fluorobiphenyl	88.32			100.000	88.3	10 - 133			
Surrogate: 4-Terphenyl-d14	87.91			100.000	87.9	5 - 139			
Surrogate: Nitrobenzene-d5	95.78			100.000	95.8	13 - 150			
LCS Dup (B2G0833-BSD1)					Prepared: 7/8/2022 Analyzed: 7/8/2022				
1,4-Dioxane	93.4800	2.0	0.84	100.000	93.5	75 - 155	1.26	20	
Surrogate: 1,2-Dichlorobenzene-d4	94.48			100.000	94.5	17 - 119			
Surrogate: 2-Fluorobiphenyl	88.83			100.000	88.8	10 - 133			
Surrogate: 4-Terphenyl-d14	86.09			100.000	86.1	5 - 139			
Surrogate: Nitrobenzene-d5	97.68			100.000	97.7	13 - 150			



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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 09/09/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes
Batch B2G0834 - MSSEMI_W									
Blank (B2G0834-BLK1)					Prepared: 7/8/2022 Analyzed: 7/8/2022				
1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d4	1.071			1.00000	107	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9174			1.00000	91.7	8 - 111			
Surrogate: 4-Terphenyl-d14	1.104			1.00000	110	12 - 113			
Surrogate: Nitrobenzene-d5	1.035			1.00000	103	15 - 121			
LCS (B2G0834-BS1)					Prepared: 7/8/2022 Analyzed: 7/8/2022				
1,4-Dioxane	1.07028	0.20	0.05	1.00000	107	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	1.072			1.00000	107	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	1.053			1.00000	105	8 - 111			
Surrogate: 4-Terphenyl-d14	1.108			1.00000	111	12 - 113			
Surrogate: Nitrobenzene-d5	1.088			1.00000	109	15 - 121			
LCS Dup (B2G0834-BSD1)					Prepared: 7/8/2022 Analyzed: 7/8/2022				
1,4-Dioxane	0.824290	0.20	0.05	1.00000	82.4	75 - 155	26.0	20	R
Surrogate: 1,2-Dichlorobenzene-d4	1.112			1.00000	111	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9468			1.00000	94.7	8 - 111			
Surrogate: 4-Terphenyl-d14	1.154			1.00000	115	12 - 113			S12
Surrogate: Nitrobenzene-d5	0.9887			1.00000	98.9	15 - 121			



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201891-04 / POX
MATRIX: Groundwater

REPORTING DATE: 07/29/2022
SAMPLE RECEIVED: 07/11/2022
LABORATORY NO.: 22-1890
DATE SAMPLED : 07/07/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Alkalinity, Total (as CaCO ₃)	212	mg/L	5.00	1	SM 2320 B	07/21/22
Bicarbonate (as CaCO ₃)	212	mg/L	5.00	1	SM 2320 B	07/21/22
Carbonate (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/21/22
Hydroxide (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/21/22
Total Organic Carbon	ND	mg/L	0.50	1	SM 5310 D	07/15/22
Bromate	ND	ug/L	25.0	5	EPA 300.1	07/13/22
<u>Surrogate Recovery</u>	<u>Rec (%)</u>				<u>Control Limits</u>	
Dichloroacetate (Surr)	99				90-115	

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201891-05 / PF
MATRIX: Groundwater

REPORTING DATE: 07/29/2022
SAMPLE RECEIVED: 07/11/2022
LABORATORY NO.: 22-1891
DATE SAMPLED : 07/07/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Alkalinity, Total (as CaCO ₃)	210	mg/L	5.00	1	SM 2320 B	07/21/22
Bicarbonate (as CaCO ₃)	210	mg/L	5.00	1	SM 2320 B	07/21/22
Carbonate (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/21/22
Hydroxide (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	07/21/22
Total Organic Carbon	ND	mg/L	0.50	1	SM 5310 D	07/15/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201891-06 / INF
MATRIX: Groundwater

REPORTING DATE: 07/29/2022
SAMPLE RECEIVED: 07/11/2022
LABORATORY NO.: 22-1892
DATE SAMPLED : 07/07/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.28	mg/L	0.10	1	EPA 300.0	07/13/22
Bromate	ND	ug/L	25.0	5	EPA 300.1	07/13/22
<u>Surrogate Recovery</u>	<u>Rec (%)</u>				<u>Control Limits</u>	
Dichloroacetate (Surr)	95				90-115	

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
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Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201891-07 / EW-02
MATRIX: Groundwater

REPORTING DATE: 07/29/2022
SAMPLE RECEIVED: 07/11/2022
LABORATORY NO.: 22-1893
DATE SAMPLED : 07/07/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.24	mg/L	0.10	1	EPA 300.0	07/13/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: 



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2201891-08 / MW-29
MATRIX: Groundwater

REPORTING DATE: 07/29/2022
SAMPLE RECEIVED: 07/11/2022
LABORATORY NO.: 22-1894
DATE SAMPLED : 07/07/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.41	mg/L	0.10	1	EPA 300.0	07/13/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: 

**ADVANCED TECHNOLOGY
LABORATORIES**

SUBCONTRACT ORDER

Work Order: 2201891

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Jerald Ancheta
(Jerald.Ancheta@atlglobal.com)
Sampler: Ruben Sanchez

RECEIVING LABORATORY:

JK Bioscience, Inc.
1926 E. Gladwick Street
Rancho Dominguez, CA 90220
Phone: (213) 292-6474
Fax:
PO#: SC16211

**IMPORTANT : Please 'J-Flag' results to MDL. Please
include Work Order # and PO # in your invoice.**

QC Requirements:

☒ Routine ☐ MS/MSD
☐ Caltrans ☐ Level IV*
☐ DUP ☐ Other: _____

TAT Requirements:

☒ Standard
☐ Rush _____ Days
☐ Fastest Possible

EDD Requirements:

☐ Standard Excel
☐ Geotracker EDF
☐ EQuis
☐ Other: _____

* All Level IV sample containers (including empty ones) must be returned to ATL 30 days after receipt.

Analysis	Expires	Sampled	Comments
ATL Lab#: 2201891-04 / POX 22-1890			
Bromate_ICMS/MS_SUB	08/04/22 09:00	07/07/22 09:00	Poly Unpres - 125mL
[Bromate by IC-MS/MS]			
Speciated Alkalinity_2320B_SUB	07/21/22 09:00	Amber Unpres - 250mL	
[Alkalinity, Speciated]			
TOC_SUB	08/04/22 09:00	Voa Vial - HCl	
[Total Organic Carbon]			

Prepared by:

Sample Control Technician

Date

Inspected by:

PM Lead / SC Lead

Date

Approved by:

Dedicated ATL Project Manager

Date

Released By ATL Sample Control

Date

Time

Released By Courier

Date

Time

Received By Courier

Date

Time

Received By Subcontract
Laboratory

Date

Time

Released By

Date

Time

Received By

Date

Time

**ADVANCED TECHNOLOGY
LABORATORIES**

SUBCONTRACT ORDER

Work Order: 2201891

Analysis	Expires	Sampled	Comments
ATL Lab#: 2201891-05 / PF Speciated Alkalinity_2320B_SUB [Alkalinity, Speciated]	Groundwater 07/21/22 09:10	07/07/22 09:10 Amber Unpres - 250mL	22-1891
TOC_SUB [Total Organic Carbon]	08/04/22 09:10	Voa Vial - HCl	
ATL Lab#: 2201891-06 / INF 300_Bromide_SUB [Bromide by Ion Chromatography]	Groundwater 08/04/22 09:15	07/07/22 09:15 Poly Unpres - 125mL	22-1892
Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS]	08/04/22 09:15	Poly EDA - 60mL	
ATL Lab#: 2201891-07 / EW-02 300_Bromide_SUB [Bromide by Ion Chromatography]	Groundwater 08/04/22 09:30	07/07/22 09:30 Poly Unpres - 125mL	22-1893
ATL Lab#: 2201891-08 / MW-29 300_Bromide_SUB [Bromide by Ion Chromatography]	Groundwater 08/04/22 09:45	07/07/22 09:45 Poly Unpres - 125mL	22-1894

Prepared by: [Signature] 7/11/22
Sample Control Technician Date

Inspected by: [Signature] 7/11/22
PM Lead / SC Lead Date

Approved by: [Signature] 07/08/2022
Dedicated ATL Project Manager Date

[Signature] 7/11/22 9:52
Released By ATL Sample Control Date Time

[Signature] 7/11/22 10:50
Released By Courier Date Time

[Signature] 7/11/22 9:52
Received By Courier Date Time

[Signature] 7/11/22 10:52
Received By Subcontract Laboratory Date Time

Released By Date Time

Received By Date Time

July 28, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

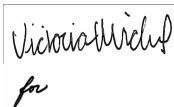
Re: ATL Work Order Number : 2201978

Client Reference : Raytheon Main GETS Mid Month Sample: 532.15

Enclosed are the results for sample(s) received on July 21, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,



Victoria Michel, Project Assistant
Victoria.Michel@atlglobal.com

Authorized to Release on 07/28/22 10:45 on Behalf of



Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-072122	2201978-01	Water	7/21/22 8:00	7/21/22 15:23
CEFF	2201978-02	Groundwater	7/21/22 10:45	7/21/22 15:23
CBT	2201978-03	Groundwater	7/21/22 10:50	7/21/22 15:23
POX	2201978-04	Groundwater	7/21/22 10:55	7/21/22 15:23
INF	2201978-05	Groundwater	7/21/22 11:00	7/21/22 15:23
EW-02	2201978-06	Groundwater	7/21/22 11:15	7/21/22 15:23
MW-29	2201978-07	Groundwater	7/21/22 11:25	7/21/22 15:23



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
L3	Laboratory control sample outside in-house established limits but within method criteria.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: TB-072122

Lab ID: 2201978-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 19:00	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 19:00	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2G1092	07/25/2022	07/25/22 19:00	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2G1092	07/25/2022	07/25/22 19:00	
1,1-Dichloroethane	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 19:00	
1,1-Dichloroethene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
1,1-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2-Dibromoethane	ND	0.50	0.24	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2-Dichloroethane	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 19:00	
1,2-Dichloropropane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 19:00	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 19:00	
1,3-Dichloropropane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 19:00	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2G1092	07/25/2022	07/25/22 19:00	
2,2-Dichloropropane	ND	0.50	0.38	1	B2G1092	07/25/2022	07/25/22 19:00	
2-Chlorotoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 19:00	
4-Chlorotoluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 19:00	
4-Isopropyltoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 19:00	
Benzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
Bromobenzene	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 19:00	
Bromodichloromethane	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 19:00	
Bromoform	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 19:00	
Bromomethane	ND	0.50	0.40	1	B2G1092	07/25/2022	07/25/22 19:00	
Carbon tetrachloride	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 19:00	
Chlorobenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
Chloroethane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 19:00	
Chloroform	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 19:00	
Chloromethane	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 19:00	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 19:00	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
Dibromochloromethane	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 19:00	
Dibromomethane	ND	0.50	0.19	1	B2G1092	07/25/2022	07/25/22 19:00	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 19:00	
Ethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: TB-072122

Lab ID: 2201978-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 19:00	
Isopropylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 19:00	
m,p-Xylene	ND	1.0	0.19	1	B2G1092	07/25/2022	07/25/22 19:00	
Methylene chloride	ND	1.0	0.71	1	B2G1092	07/25/2022	07/25/22 19:00	
n-Butylbenzene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 19:00	
n-Propylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 19:00	
Naphthalene	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 19:00	
o-Xylene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
sec-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 19:00	
Styrene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
tert-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 19:00	
Tetrachloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 19:00	
Toluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 19:00	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 19:00	
Trichloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 19:00	
Trichlorofluoromethane	ND	0.50	0.23	1	B2G1092	07/25/2022	07/25/22 19:00	
Vinyl chloride	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 19:00	
Surrogate: 1,2-Dichloroethane-d4	119 %	64 - 155			B2G1092	07/25/2022	07/25/22 19:00	
Surrogate: 4-Bromofluorobenzene	95.4 %	73 - 124			B2G1092	07/25/2022	07/25/22 19:00	
Surrogate: Dibromofluoromethane	117 %	78 - 129			B2G1092	07/25/2022	07/25/22 19:00	
Surrogate: Toluene-d8	103 %	84 - 117			B2G1092	07/25/2022	07/25/22 19:00	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: CEFF

Lab ID: 2201978-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 21:36	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 21:36	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2G1092	07/25/2022	07/25/22 21:36	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2G1092	07/25/2022	07/25/22 21:36	
1,1-Dichloroethane	0.27	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 21:36	J
1,1-Dichloroethene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
1,1-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2-Dibromoethane	ND	0.50	0.24	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2-Dichloroethane	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 21:36	
1,2-Dichloropropane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 21:36	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 21:36	
1,3-Dichloropropane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 21:36	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2G1092	07/25/2022	07/25/22 21:36	
2,2-Dichloropropane	ND	0.50	0.38	1	B2G1092	07/25/2022	07/25/22 21:36	
2-Chlorotoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 21:36	
4-Chlorotoluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 21:36	
4-Isopropyltoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 21:36	
Benzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
Bromobenzene	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 21:36	
Bromodichloromethane	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 21:36	
Bromoform	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 21:36	
Bromomethane	ND	0.50	0.40	1	B2G1092	07/25/2022	07/25/22 21:36	
Carbon tetrachloride	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 21:36	
Chlorobenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
Chloroethane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 21:36	
Chloroform	0.19	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 21:36	J
Chloromethane	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 21:36	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 21:36	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
Dibromochloromethane	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 21:36	
Dibromomethane	ND	0.50	0.19	1	B2G1092	07/25/2022	07/25/22 21:36	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 21:36	
Ethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: CEFF

Lab ID: 2201978-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 21:36	
Isopropylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 21:36	
m,p-Xylene	ND	1.0	0.19	1	B2G1092	07/25/2022	07/25/22 21:36	
Methylene chloride	ND	1.0	0.71	1	B2G1092	07/25/2022	07/25/22 21:36	
n-Butylbenzene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 21:36	
n-Propylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 21:36	
Naphthalene	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 21:36	
o-Xylene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
sec-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 21:36	
Styrene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
tert-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 21:36	
Tetrachloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 21:36	
Toluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 21:36	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 21:36	
Trichloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 21:36	
Trichlorofluoromethane	0.34	0.50	0.23	1	B2G1092	07/25/2022	07/25/22 21:36	J
Vinyl chloride	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 21:36	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>122 %</i>	<i>64 - 155</i>			B2G1092	07/25/2022	07/25/22 21:36	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.0 %</i>	<i>73 - 124</i>			B2G1092	07/25/2022	07/25/22 21:36	
<i>Surrogate: Dibromofluoromethane</i>	<i>115 %</i>	<i>78 - 129</i>			B2G1092	07/25/2022	07/25/22 21:36	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>84 - 117</i>			B2G1092	07/25/2022	07/25/22 21:36	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2G1078	07/22/2022	07/22/22 12:56	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>107 %</i>	<i>13 - 99</i>			B2G1078	07/22/2022	07/22/22 12:56	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>94.6 %</i>	<i>8 - 111</i>			B2G1078	07/22/2022	07/22/22 12:56	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>105 %</i>	<i>12 - 113</i>			B2G1078	07/22/2022	07/22/22 12:56	
<i>Surrogate: Nitrobenzene-d5</i>	<i>111 %</i>	<i>15 - 121</i>			B2G1078	07/22/2022	07/22/22 12:56	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: CBT

Lab ID: 2201978-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:02	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:02	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2G1092	07/25/2022	07/25/22 22:02	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2G1092	07/25/2022	07/25/22 22:02	
1,1-Dichloroethane	0.36	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:02	J
1,1-Dichloroethene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
1,1-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2-Dibromoethane	ND	0.50	0.24	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2-Dichloroethane	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:02	
1,2-Dichloropropane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:02	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:02	
1,3-Dichloropropane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:02	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2G1092	07/25/2022	07/25/22 22:02	
2,2-Dichloropropane	ND	0.50	0.38	1	B2G1092	07/25/2022	07/25/22 22:02	
2-Chlorotoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:02	
4-Chlorotoluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:02	
4-Isopropyltoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:02	
Benzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
Bromobenzene	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:02	
Bromodichloromethane	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:02	
Bromoform	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:02	
Bromomethane	ND	0.50	0.40	1	B2G1092	07/25/2022	07/25/22 22:02	
Carbon tetrachloride	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:02	
Chlorobenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
Chloroethane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:02	
Chloroform	0.17	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:02	J
Chloromethane	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:02	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:02	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
Dibromochloromethane	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:02	
Dibromomethane	ND	0.50	0.19	1	B2G1092	07/25/2022	07/25/22 22:02	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 22:02	
Ethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: CBT

Lab ID: 2201978-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:02	
Isopropylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:02	
m,p-Xylene	ND	1.0	0.19	1	B2G1092	07/25/2022	07/25/22 22:02	
Methylene chloride	ND	1.0	0.71	1	B2G1092	07/25/2022	07/25/22 22:02	
n-Butylbenzene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:02	
n-Propylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:02	
Naphthalene	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 22:02	
o-Xylene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
sec-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:02	
Styrene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
tert-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:02	
Tetrachloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:02	
Toluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:02	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:02	
Trichloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:02	
Trichlorofluoromethane	0.37	0.50	0.23	1	B2G1092	07/25/2022	07/25/22 22:02	J
Vinyl chloride	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:02	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>124 %</i>	<i>64 - 155</i>			B2G1092	07/25/2022	07/25/22 22:02	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.5 %</i>	<i>73 - 124</i>			B2G1092	07/25/2022	07/25/22 22:02	
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>	<i>78 - 129</i>			B2G1092	07/25/2022	07/25/22 22:02	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>84 - 117</i>			B2G1092	07/25/2022	07/25/22 22:02	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2G1078	07/22/2022	07/22/22 13:24	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>105 %</i>	<i>13 - 99</i>			B2G1078	07/22/2022	07/22/22 13:24	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>97.9 %</i>	<i>8 - 111</i>			B2G1078	07/22/2022	07/22/22 13:24	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>103 %</i>	<i>12 - 113</i>			B2G1078	07/22/2022	07/22/22 13:24	
<i>Surrogate: Nitrobenzene-d5</i>	<i>109 %</i>	<i>15 - 121</i>			B2G1078	07/22/2022	07/22/22 13:24	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: POX

Lab ID: 2201978-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:28	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:28	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2G1092	07/25/2022	07/25/22 22:28	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2G1092	07/25/2022	07/25/22 22:28	
1,1-Dichloroethane	0.40	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:28	J
1,1-Dichloroethene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
1,1-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2-Dibromoethane	ND	0.50	0.24	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2-Dichloroethane	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:28	
1,2-Dichloropropane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:28	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:28	
1,3-Dichloropropane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:28	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2G1092	07/25/2022	07/25/22 22:28	
2,2-Dichloropropane	ND	0.50	0.38	1	B2G1092	07/25/2022	07/25/22 22:28	
2-Chlorotoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:28	
4-Chlorotoluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:28	
4-Isopropyltoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:28	
Benzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
Bromobenzene	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:28	
Bromodichloromethane	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:28	
Bromoform	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:28	
Bromomethane	ND	0.50	0.40	1	B2G1092	07/25/2022	07/25/22 22:28	
Carbon tetrachloride	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:28	
Chlorobenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
Chloroethane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:28	
Chloroform	0.15	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:28	J
Chloromethane	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:28	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:28	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
Dibromochloromethane	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:28	
Dibromomethane	ND	0.50	0.19	1	B2G1092	07/25/2022	07/25/22 22:28	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 22:28	
Ethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: POX

Lab ID: 2201978-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:28	
Isopropylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:28	
m,p-Xylene	ND	1.0	0.19	1	B2G1092	07/25/2022	07/25/22 22:28	
Methylene chloride	ND	1.0	0.71	1	B2G1092	07/25/2022	07/25/22 22:28	
n-Butylbenzene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:28	
n-Propylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:28	
Naphthalene	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 22:28	
o-Xylene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
sec-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:28	
Styrene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
tert-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:28	
Tetrachloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:28	
Toluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:28	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:28	
Trichloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:28	
Trichlorofluoromethane	0.36	0.50	0.23	1	B2G1092	07/25/2022	07/25/22 22:28	J
Vinyl chloride	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:28	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>124 %</i>	<i>64 - 155</i>			B2G1092	07/25/2022	07/25/22 22:28	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.9 %</i>	<i>73 - 124</i>			B2G1092	07/25/2022	07/25/22 22:28	
<i>Surrogate: Dibromofluoromethane</i>	<i>121 %</i>	<i>78 - 129</i>			B2G1092	07/25/2022	07/25/22 22:28	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>84 - 117</i>			B2G1092	07/25/2022	07/25/22 22:28	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	0.05	1	B2G1078	07/22/2022	07/22/22 13:51	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>108 %</i>	<i>13 - 99</i>			B2G1078	07/22/2022	07/22/22 13:51	S12
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>97.2 %</i>	<i>8 - 111</i>			B2G1078	07/22/2022	07/22/22 13:51	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>99.7 %</i>	<i>12 - 113</i>			B2G1078	07/22/2022	07/22/22 13:51	
<i>Surrogate: Nitrobenzene-d5</i>	<i>113 %</i>	<i>15 - 121</i>			B2G1078	07/22/2022	07/22/22 13:51	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: INF

Lab ID: 2201978-05

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:53	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:53	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2G1092	07/25/2022	07/25/22 22:53	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2G1092	07/25/2022	07/25/22 22:53	
1,1-Dichloroethane	0.63	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:53	
1,1-Dichloroethene	77	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
1,1-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2-Dibromoethane	ND	0.50	0.24	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2-Dichloroethane	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:53	
1,2-Dichloropropane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:53	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:53	
1,3-Dichloropropane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:53	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2G1092	07/25/2022	07/25/22 22:53	
2,2-Dichloropropane	ND	0.50	0.38	1	B2G1092	07/25/2022	07/25/22 22:53	
2-Chlorotoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:53	
4-Chlorotoluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:53	
4-Isopropyltoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:53	
Benzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
Bromobenzene	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 22:53	
Bromodichloromethane	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:53	
Bromoform	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 22:53	
Bromomethane	ND	0.50	0.40	1	B2G1092	07/25/2022	07/25/22 22:53	
Carbon tetrachloride	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:53	
Chlorobenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
Chloroethane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:53	
Chloroform	0.16	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:53	J
Chloromethane	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:53	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 22:53	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
Dibromochloromethane	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 22:53	
Dibromomethane	ND	0.50	0.19	1	B2G1092	07/25/2022	07/25/22 22:53	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 22:53	
Ethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: INF

Lab ID: 2201978-05

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 22:53	
Isopropylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:53	
m,p-Xylene	ND	1.0	0.19	1	B2G1092	07/25/2022	07/25/22 22:53	
Methylene chloride	ND	1.0	0.71	1	B2G1092	07/25/2022	07/25/22 22:53	
n-Butylbenzene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 22:53	
n-Propylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:53	
Naphthalene	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 22:53	
o-Xylene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
sec-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:53	
Styrene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
tert-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:53	
Tetrachloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:53	
Toluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 22:53	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 22:53	
Trichloroethene	0.59	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 22:53	
Trichlorofluoromethane	0.37	0.50	0.23	1	B2G1092	07/25/2022	07/25/22 22:53	J
Vinyl chloride	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 22:53	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>121 %</i>		<i>64 - 155</i>		B2G1092	07/25/2022	07/25/22 22:53	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.1 %</i>		<i>73 - 124</i>		B2G1092	07/25/2022	07/25/22 22:53	
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>		<i>78 - 129</i>		B2G1092	07/25/2022	07/25/22 22:53	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>84 - 117</i>		B2G1092	07/25/2022	07/25/22 22:53	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	25	2.0	0.84	1	B2G1075	07/21/2022	07/25/22 11:38	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>92.7 %</i>		<i>17 - 119</i>		B2G1075	07/21/2022	07/25/22 11:38	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>86.1 %</i>		<i>10 - 133</i>		B2G1075	07/21/2022	07/25/22 11:38	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>81.8 %</i>		<i>5 - 139</i>		B2G1075	07/21/2022	07/25/22 11:38	
<i>Surrogate: Nitrobenzene-d5</i>	<i>87.4 %</i>		<i>13 - 150</i>		B2G1075	07/21/2022	07/25/22 11:38	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: EW-02

Lab ID: 2201978-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:19	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 23:19	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2G1092	07/25/2022	07/25/22 23:19	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B2G1092	07/25/2022	07/25/22 23:19	
1,1-Dichloroethane	0.17	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:19	J
1,1-Dichloroethene	21	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
1,1-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2-Dibromoethane	ND	0.50	0.24	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2-Dichloroethane	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 23:19	
1,2-Dichloropropane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 23:19	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 23:19	
1,3-Dichloropropane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 23:19	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2G1092	07/25/2022	07/25/22 23:19	
2,2-Dichloropropane	ND	0.50	0.38	1	B2G1092	07/25/2022	07/25/22 23:19	
2-Chlorotoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:19	
4-Chlorotoluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 23:19	
4-Isopropyltoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:19	
Benzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
Bromobenzene	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 23:19	
Bromodichloromethane	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 23:19	
Bromoform	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 23:19	
Bromomethane	ND	0.50	0.40	1	B2G1092	07/25/2022	07/25/22 23:19	
Carbon tetrachloride	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:19	
Chlorobenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
Chloroethane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 23:19	
Chloroform	0.13	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:19	J
Chloromethane	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 23:19	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 23:19	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
Dibromochloromethane	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 23:19	
Dibromomethane	ND	0.50	0.19	1	B2G1092	07/25/2022	07/25/22 23:19	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 23:19	
Ethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: EW-02

Lab ID: 2201978-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 23:19	
Isopropylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:19	
m,p-Xylene	ND	1.0	0.19	1	B2G1092	07/25/2022	07/25/22 23:19	
Methylene chloride	ND	1.0	0.71	1	B2G1092	07/25/2022	07/25/22 23:19	
n-Butylbenzene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:19	
n-Propylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:19	
Naphthalene	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 23:19	
o-Xylene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
sec-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:19	
Styrene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
tert-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:19	
Tetrachloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:19	
Toluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 23:19	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:19	
Trichloroethene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:19	
Trichlorofluoromethane	ND	0.50	0.23	1	B2G1092	07/25/2022	07/25/22 23:19	
Vinyl chloride	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:19	
Surrogate: 1,2-Dichloroethane-d4	122 %	64 - 155			B2G1092	07/25/2022	07/25/22 23:19	
Surrogate: 4-Bromofluorobenzene	95.4 %	73 - 124			B2G1092	07/25/2022	07/25/22 23:19	
Surrogate: Dibromofluoromethane	120 %	78 - 129			B2G1092	07/25/2022	07/25/22 23:19	
Surrogate: Toluene-d8	102 %	84 - 117			B2G1092	07/25/2022	07/25/22 23:19	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	5.5	2.0	0.84	1	B2G1075	07/21/2022	07/25/22 12:06	
Surrogate: 1,2-Dichlorobenzene-d4	96.1 %	17 - 119			B2G1075	07/21/2022	07/25/22 12:06	
Surrogate: 2-Fluorobiphenyl	90.4 %	10 - 133			B2G1075	07/21/2022	07/25/22 12:06	
Surrogate: 4-Terphenyl-d14	86.4 %	5 - 139			B2G1075	07/21/2022	07/25/22 12:06	
Surrogate: Nitrobenzene-d5	93.2 %	13 - 150			B2G1075	07/21/2022	07/25/22 12:06	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: MW-29

Lab ID: 2201978-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:45	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 23:45	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B2G1092	07/25/2022	07/25/22 23:45	
1,1,2-Trichloroethane	0.53	0.50	0.25	1	B2G1092	07/25/2022	07/25/22 23:45	
1,1-Dichloroethane	1.9	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:45	
1,1-Dichloroethene	270	5.0	1.3	10	B2G1092	07/26/2022	07/26/22 00:11	
1,1-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2-Dibromoethane	ND	0.50	0.24	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2-Dichloroethane	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 23:45	
1,2-Dichloropropane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 23:45	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 23:45	
1,3-Dichloropropane	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 23:45	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B2G1092	07/25/2022	07/25/22 23:45	
2,2-Dichloropropane	ND	0.50	0.38	1	B2G1092	07/25/2022	07/25/22 23:45	
2-Chlorotoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:45	
4-Chlorotoluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 23:45	
4-Isopropyltoluene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:45	
Benzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
Bromobenzene	ND	0.50	0.21	1	B2G1092	07/25/2022	07/25/22 23:45	
Bromodichloromethane	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 23:45	
Bromoform	ND	0.50	0.20	1	B2G1092	07/25/2022	07/25/22 23:45	
Bromomethane	ND	0.50	0.40	1	B2G1092	07/25/2022	07/25/22 23:45	
Carbon tetrachloride	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:45	
Chlorobenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
Chloroethane	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 23:45	
Chloroform	0.32	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:45	J
Chloromethane	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 23:45	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B2G1092	07/25/2022	07/25/22 23:45	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
Dibromochloromethane	ND	0.50	0.16	1	B2G1092	07/25/2022	07/25/22 23:45	
Dibromomethane	ND	0.50	0.19	1	B2G1092	07/25/2022	07/25/22 23:45	
Dichlorodifluoromethane	ND	0.50	0.18	1	B2G1092	07/25/2022	07/25/22 23:45	
Ethylbenzene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Client Sample ID: MW-29

Lab ID: 2201978-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	0.15	1	B2G1092	07/25/2022	07/25/22 23:45	
Isopropylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:45	
m,p-Xylene	ND	1.0	0.19	1	B2G1092	07/25/2022	07/25/22 23:45	
Methylene chloride	ND	1.0	0.71	1	B2G1092	07/25/2022	07/25/22 23:45	
n-Butylbenzene	ND	0.50	0.11	1	B2G1092	07/25/2022	07/25/22 23:45	
n-Propylbenzene	ND	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:45	
Naphthalene	ND	0.50	0.41	1	B2G1092	07/25/2022	07/25/22 23:45	
o-Xylene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
sec-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:45	
Styrene	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
tert-Butylbenzene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:45	
Tetrachloroethene	0.33	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:45	J
Toluene	ND	0.50	0.12	1	B2G1092	07/25/2022	07/25/22 23:45	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B2G1092	07/25/2022	07/25/22 23:45	
Trichloroethene	2.0	0.50	0.10	1	B2G1092	07/25/2022	07/25/22 23:45	
Trichlorofluoromethane	0.98	0.50	0.23	1	B2G1092	07/25/2022	07/25/22 23:45	
Vinyl chloride	ND	0.50	0.13	1	B2G1092	07/25/2022	07/25/22 23:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>120 %</i>		<i>64 - 155</i>		B2G1092	07/25/2022	07/25/22 23:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>121 %</i>		<i>64 - 155</i>		B2G1092	07/26/2022	07/26/22 00:11	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.5 %</i>		<i>73 - 124</i>		B2G1092	07/25/2022	07/25/22 23:45	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.4 %</i>		<i>73 - 124</i>		B2G1092	07/26/2022	07/26/22 00:11	
<i>Surrogate: Dibromofluoromethane</i>	<i>115 %</i>		<i>78 - 129</i>		B2G1092	07/25/2022	07/25/22 23:45	
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>		<i>78 - 129</i>		B2G1092	07/26/2022	07/26/22 00:11	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>84 - 117</i>		B2G1092	07/25/2022	07/25/22 23:45	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>84 - 117</i>		B2G1092	07/26/2022	07/26/22 00:11	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	80	2.0	0.84	1	B2G1075	07/21/2022	07/25/22 12:35	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>90.7 %</i>		<i>17 - 119</i>		B2G1075	07/21/2022	07/25/22 12:35	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>86.4 %</i>		<i>10 - 133</i>		B2G1075	07/21/2022	07/25/22 12:35	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>82.7 %</i>		<i>5 - 139</i>		B2G1075	07/21/2022	07/25/22 12:35	
<i>Surrogate: Nitrobenzene-d5</i>	<i>87.6 %</i>		<i>13 - 150</i>		B2G1075	07/21/2022	07/25/22 12:35	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G1092 - MSVOA_LL_W

Blank (B2G1092-BLK1)

Prepared: 7/25/2022 Analyzed: 7/25/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2G1092 - MSVOA_LL_W (continued)

Blank (B2G1092-BLK1) - Continued

Prepared: 7/25/2022 Analyzed: 7/25/2022

m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	ND	0.50	0.11
n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	29.16		25.0000	117	64 - 155
Surrogate: 4-Bromofluorobenzene	24.02		25.0000	96.1	73 - 124
Surrogate: Dibromofluoromethane	28.16		25.0000	113	78 - 129
Surrogate: Toluene-d8	25.81		25.0000	103	84 - 117

LCS (B2G1092-BS1)

Prepared: 7/25/2022 Analyzed: 7/25/2022

1,1,1,2-Tetrachloroethane	17.4100	0.50	0.11	20.0000	87.0	79 - 116	
1,1,1-Trichloroethane	17.6400	0.50	0.21	20.0000	88.2	73 - 130	
1,1,2,2-Tetrachloroethane	17.3900	0.50	0.36	20.0000	87.0	71 - 122	
1,1,2-Trichloroethane	19.5800	0.50	0.25	20.0000	97.9	70 - 124	
1,1-Dichloroethane	20.7400	0.50	0.09	20.0000	104	69 - 128	
1,1-Dichloroethene	18.6100	0.50	0.13	20.0000	93.0	65 - 137	
1,1-Dichloropropene	15.4200	0.50	0.13	20.0000	77.1	74 - 129	
1,2,3-Trichloropropane	17.8600	0.50	0.39	20.0000	89.3	74 - 123	
1,2,3-Trichlorobenzene	15.8600	0.50	0.18	20.0000	79.3	59 - 130	
1,2,4-Trichlorobenzene	16.0300	0.50	0.16	20.0000	80.2	65 - 125	
1,2,4-Trimethylbenzene	16.5400	0.50	0.14	20.0000	82.7	88 - 124	L3
1,2-Dibromo-3-chloropropane	15.7900	0.50	0.41	20.0000	79.0	61 - 127	
1,2-Dibromoethane	18.1300	0.50	0.24	20.0000	90.6	72 - 125	
1,2-Dichlorobenzene	17.3300	0.50	0.20	20.0000	86.6	84 - 113	
1,2-Dichloroethane	19.2900	0.50	0.20	20.0000	96.4	68 - 130	
1,2-Dichloropropane	19.8300	0.50	0.15	20.0000	99.2	77 - 121	
1,3,5-Trimethylbenzene	16.1600	0.50	0.13	20.0000	80.8	83 - 124	L3
1,3-Dichlorobenzene	16.7500	0.50	0.16	20.0000	83.8	83 - 112	
1,3-Dichloropropane	18.9500	0.50	0.21	20.0000	94.8	77 - 119	
1,4-Dichlorobenzene	16.7300	0.50	0.17	20.0000	83.6	79 - 115	
2,2-Dichloropropane	13.9600	0.50	0.38	20.0000	69.8	67 - 149	
2-Chlorotoluene	16.9400	0.50	0.11	20.0000	84.7	81 - 119	
4-Chlorotoluene	17.2600	0.50	0.12	20.0000	86.3	86 - 117	
4-Isopropyltoluene	15.4800	0.50	0.11	20.0000	77.4	82 - 131	L3



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2G1092 - MSVOA_LL_W (continued)

LCS (B2G1092-BS1) - Continued

Prepared: 7/25/2022 Analyzed: 7/25/2022

Benzene	18.9600	0.50	0.13	20.0000	94.8	75 - 124			
Bromobenzene	17.7100	0.50	0.21	20.0000	88.6	82 - 108			
Bromodichloromethane	18.3600	0.50	0.14	20.0000	91.8	80 - 120			
Bromoform	17.2300	0.50	0.20	20.0000	86.2	70 - 123			
Bromomethane	28.8500	0.50	0.40	20.0000	144	44 - 151			
Carbon tetrachloride	14.2600	0.50	0.09	20.0000	71.3	62 - 140			
Chlorobenzene	17.3100	0.50	0.13	20.0000	86.6	80 - 112			
Chloroethane	21.0200	0.50	0.15	20.0000	105	42 - 167			
Chloroform	20.1300	0.50	0.11	20.0000	101	77 - 122			
Chloromethane	17.0600	0.50	0.12	20.0000	85.3	33 - 153			
cis-1,2-Dichloroethene	16.3800	0.50	0.14	20.0000	81.9	75 - 121			
cis-1,3-Dichloropropene	15.8600	0.50	0.13	20.0000	79.3	73 - 127			
Dibromochloromethane	16.9400	0.50	0.16	20.0000	84.7	77 - 122			
Dibromomethane	18.6900	0.50	0.19	20.0000	93.4	75 - 121			
Dichlorodifluoromethane	9.57000	0.50	0.18	20.0000	47.8	0 - 171			
Ethylbenzene	17.1100	0.50	0.13	20.0000	85.6	82 - 119			
Hexachlorobutadiene	13.3900	0.50	0.15	20.0000	67.0	71 - 131			L4
Isopropylbenzene	16.6700	0.50	0.10	20.0000	83.4	75 - 126			
m,p-Xylene	33.1300	1.0	0.19	40.0000	82.8	86 - 119			L3
Methylene chloride	22.8800	1.0	0.71	20.0000	114	76 - 125			
n-Butylbenzene	15.1300	0.50	0.11	20.0000	75.6	81 - 125			L3
n-Propylbenzene	16.0300	0.50	0.10	20.0000	80.2	78 - 130			
Naphthalene	16.4800	0.50	0.41	20.0000	82.4	47 - 128			
o-Xylene	17.7000	0.50	0.13	20.0000	88.5	85 - 119			
sec-Butylbenzene	15.6800	0.50	0.09	20.0000	78.4	78 - 130			
Styrene	17.3700	0.50	0.13	20.0000	86.8	62 - 148			
tert-Butylbenzene	15.4100	0.50	0.09	20.0000	77.0	77 - 125			
Tetrachloroethene	14.9400	0.50	0.10	20.0000	74.7	73 - 120			
Toluene	18.4800	0.50	0.12	20.0000	92.4	79 - 119			
trans-1,2-Dichloroethene	26.3200	0.50	0.09	20.0000	132	70 - 129			L4
Trichloroethene	17.4300	0.50	0.10	20.0000	87.2	73 - 117			
Trichlorofluoromethane	18.8300	0.50	0.23	20.0000	94.2	59 - 135			
Vinyl chloride	18.8100	0.50	0.13	20.0000	94.0	58 - 132			

Surrogate: 1,2-Dichloroethane-d4

28.26

25.0000

113

64 - 155

Surrogate: 4-Bromofluorobenzene

25.02

25.0000

100

73 - 124

Surrogate: Dibromofluoromethane

28.37

25.0000

113

78 - 129

Surrogate: Toluene-d8

25.89

25.0000

104

84 - 117

LCS Dup (B2G1092-BSD1)

Prepared: 7/26/2022 Analyzed: 7/26/2022

1,1,1,2-Tetrachloroethane	18.0600	0.50	0.11	20.0000	90.3	79 - 116	3.67	20	
1,1,1-Trichloroethane	20.0200	0.50	0.21	20.0000	100	73 - 130	12.6	20	
1,1,2,2-Tetrachloroethane	17.5800	0.50	0.36	20.0000	87.9	71 - 122	1.09	20	
1,1,2-Trichloroethane	20.0900	0.50	0.25	20.0000	100	70 - 124	2.57	20	
1,1-Dichloroethane	23.5000	0.50	0.09	20.0000	118	69 - 128	12.5	20	
1,1-Dichloroethene	23.6500	0.50	0.13	20.0000	118	65 - 137	23.9	20	R



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	Limit	Notes

Batch B2G1092 - MSVOA_LL_W (continued)

LCS Dup (B2G1092-BSD1) - Continued

Prepared: 7/26/2022 Analyzed: 7/26/2022

1,1-Dichloropropene	18.0000	0.50	0.13	20.0000		90.0	74 - 129	15.4	20	
1,2,3-Trichloropropane	19.0400	0.50	0.39	20.0000		95.2	74 - 123	6.40	20	
1,2,3-Trichlorobenzene	15.6700	0.50	0.18	20.0000		78.4	59 - 130	1.21	20	
1,2,4-Trichlorobenzene	16.9400	0.50	0.16	20.0000		84.7	65 - 125	5.52	20	
1,2,4-Trimethylbenzene	18.2500	0.50	0.14	20.0000		91.2	88 - 124	9.83	20	
1,2-Dibromo-3-chloropropane	16.5200	0.50	0.41	20.0000		82.6	61 - 127	4.52	20	
1,2-Dibromoethane	19.3400	0.50	0.24	20.0000		96.7	72 - 125	6.46	20	
1,2-Dichlorobenzene	18.3300	0.50	0.20	20.0000		91.6	84 - 113	5.61	20	
1,2-Dichloroethane	20.7000	0.50	0.20	20.0000		104	68 - 130	7.05	20	
1,2-Dichloropropane	20.5500	0.50	0.15	20.0000		103	77 - 121	3.57	20	
1,3,5-Trimethylbenzene	18.1100	0.50	0.13	20.0000		90.6	83 - 124	11.4	20	
1,3-Dichlorobenzene	18.1300	0.50	0.16	20.0000		90.6	83 - 112	7.91	20	
1,3-Dichloropropane	19.7500	0.50	0.21	20.0000		98.8	77 - 119	4.13	20	
1,4-Dichlorobenzene	18.0900	0.50	0.17	20.0000		90.4	79 - 115	7.81	20	
2,2-Dichloropropane	12.8500	0.50	0.38	20.0000		64.2	67 - 149	8.28	20	L4
2-Chlorotoluene	18.4400	0.50	0.11	20.0000		92.2	81 - 119	8.48	20	
4-Chlorotoluene	18.8900	0.50	0.12	20.0000		94.4	86 - 117	9.02	20	
4-Isopropyltoluene	17.4500	0.50	0.11	20.0000		87.2	82 - 131	12.0	20	
Benzene	20.3400	0.50	0.13	20.0000		102	75 - 124	7.02	20	
Bromobenzene	18.0900	0.50	0.21	20.0000		90.4	82 - 108	2.12	20	
Bromodichloromethane	19.2600	0.50	0.14	20.0000		96.3	80 - 120	4.78	20	
Bromoform	17.4000	0.50	0.20	20.0000		87.0	70 - 123	0.982	20	
Bromomethane	32.2300	0.50	0.40	20.0000		161	44 - 151	11.1	20	L5
Carbon tetrachloride	16.6700	0.50	0.09	20.0000		83.4	62 - 140	15.6	20	
Chlorobenzene	18.3800	0.50	0.13	20.0000		91.9	80 - 112	6.00	20	
Chloroethane	27.3200	0.50	0.15	20.0000		137	42 - 167	26.1	20	R
Chloroform	21.5800	0.50	0.11	20.0000		108	77 - 122	6.95	20	
Chloromethane	20.7200	0.50	0.12	20.0000		104	33 - 153	19.4	20	
cis-1,2-Dichloroethene	17.4100	0.50	0.14	20.0000		87.0	75 - 121	6.10	20	
cis-1,3-Dichloropropene	16.0500	0.50	0.13	20.0000		80.2	73 - 127	1.19	20	
Dibromochloromethane	17.1000	0.50	0.16	20.0000		85.5	77 - 122	0.940	20	
Dibromomethane	19.3600	0.50	0.19	20.0000		96.8	75 - 121	3.52	20	
Dichlorodifluoromethane	14.4000	0.50	0.18	20.0000		72.0	0 - 171	40.3	20	R
Ethylbenzene	19.2500	0.50	0.13	20.0000		96.2	82 - 119	11.8	20	
Hexachlorobutadiene	14.8300	0.50	0.15	20.0000		74.2	71 - 131	10.2	20	
Isopropylbenzene	18.8600	0.50	0.10	20.0000		94.3	75 - 126	12.3	20	
m,p-Xylene	36.9100	1.0	0.19	40.0000		92.3	86 - 119	10.8	20	
Methylene chloride	24.2700	1.0	0.71	20.0000		121	76 - 125	5.90	20	
n-Butylbenzene	17.5000	0.50	0.11	20.0000		87.5	81 - 125	14.5	20	
n-Propylbenzene	18.3900	0.50	0.10	20.0000		92.0	78 - 130	13.7	20	
Naphthalene	16.6300	0.50	0.41	20.0000		83.2	47 - 128	0.906	20	
o-Xylene	19.1900	0.50	0.13	20.0000		96.0	85 - 119	8.08	20	
sec-Butylbenzene	18.1300	0.50	0.09	20.0000		90.6	78 - 130	14.5	20	
Styrene	18.5600	0.50	0.13	20.0000		92.8	62 - 148	6.62	20	
tert-Butylbenzene	17.6900	0.50	0.09	20.0000		88.4	77 - 125	13.8	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2G1092 - MSVOA_LL_W (continued)

LCS Dup (B2G1092-BSD1) - Continued

Prepared: 7/26/2022 Analyzed: 7/26/2022

Tetrachloroethene	16.6600	0.50	0.10	20.0000		83.3	73 - 120	10.9	20	
Toluene	20.1200	0.50	0.12	20.0000		101	79 - 119	8.50	20	
trans-1,2-Dichloroethene	29.7500	0.50	0.09	20.0000		149	70 - 129	12.2	20	L5
Trichloroethene	19.1500	0.50	0.10	20.0000		95.8	73 - 117	9.40	20	
Trichlorofluoromethane	24.8500	0.50	0.23	20.0000		124	59 - 135	27.6	20	R
Vinyl chloride	25.4000	0.50	0.13	20.0000		127	58 - 132	29.8	20	R
Surrogate: 1,2-Dichloroethane-d4	30.13			25.0000		121	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.54			25.0000		102	73 - 124			
Surrogate: Dibromofluoromethane	28.82			25.0000		115	78 - 129			
Surrogate: Toluene-d8	26.13			25.0000		105	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2G1075 - MSSEMI_W

Blank (B2G1075-BLK1)

Prepared: 7/21/2022 Analyzed: 7/25/2022

1,4-Dioxane ND 2.0 0.84

Surrogate: 1,2-Dichlorobenzene-d4	92.68		100.000	92.7	17 - 119
Surrogate: 2-Fluorobiphenyl	87.49		100.000	87.5	10 - 133
Surrogate: 4-Terphenyl-d14	84.52		100.000	84.5	5 - 139
Surrogate: Nitrobenzene-d5	90.89		100.000	90.9	13 - 150

LCS (B2G1075-BS1)

Prepared: 7/21/2022 Analyzed: 7/25/2022

1,4-Dioxane 100.760 2.0 0.84 100.000 101 75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	91.49		100.000	91.5	17 - 119
Surrogate: 2-Fluorobiphenyl	87.75		100.000	87.8	10 - 133
Surrogate: 4-Terphenyl-d14	86.78		100.000	86.8	5 - 139
Surrogate: Nitrobenzene-d5	97.25		100.000	97.2	13 - 150

LCS Dup (B2G1075-BSD1)

Prepared: 7/21/2022 Analyzed: 7/25/2022

1,4-Dioxane 103.600 2.0 0.84 100.000 104 75 - 155 2.78 20

Surrogate: 1,2-Dichlorobenzene-d4	90.47		100.000	90.5	17 - 119
Surrogate: 2-Fluorobiphenyl	87.60		100.000	87.6	10 - 133
Surrogate: 4-Terphenyl-d14	86.92		100.000	86.9	5 - 139
Surrogate: Nitrobenzene-d5	93.71		100.000	93.7	13 - 150



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main GETS Mid Month Sample: 532.15

Report To : Steve Netto

Reported : 07/28/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2G1078 - MSSEMI_W

Blank (B2G1078-BLK1)

Prepared: 7/22/2022 Analyzed: 7/22/2022

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d4	1.061			1.00000	106	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	1.060			1.00000	106	8 - 111			
Surrogate: 4-Terphenyl-d14	0.9908			1.00000	99.1	12 - 113			
Surrogate: Nitrobenzene-d5	1.022			1.00000	102	15 - 121			

LCS (B2G1078-BS1)

Prepared: 7/22/2022 Analyzed: 7/22/2022

1,4-Dioxane	1.20619	0.20	0.05	1.00000	121	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	1.055			1.00000	106	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	1.061			1.00000	106	8 - 111			
Surrogate: 4-Terphenyl-d14	1.021			1.00000	102	12 - 113			
Surrogate: Nitrobenzene-d5	1.072			1.00000	107	15 - 121			

LCS Dup (B2G1078-BSD1)

Prepared: 7/22/2022 Analyzed: 7/22/2022

1,4-Dioxane	1.14127	0.20	0.05	1.00000	114	75 - 155	5.53	20	
Surrogate: 1,2-Dichlorobenzene-d4	1.106			1.00000	111	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9750			1.00000	97.5	8 - 111			
Surrogate: 4-Terphenyl-d14	1.029			1.00000	103	12 - 113			
Surrogate: Nitrobenzene-d5	1.124			1.00000	112	15 - 121			

PROJECT: Raytheon Main GETS Mid Month Sample

TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Ruben Sanchez

Phone 858.455.6500

Fax 858.455.6533

Sampled By:

LAB ID	SAMPLE ID	SAMPLE COLLECTION	
		Date	Time
1	TB-072122	7/21/2022	8:00
2	CEFF	7/21/2022	10:45
3	CBT	7/21/2022	10:50
4	POX	7/21/2022	10:55
5	INF	7/21/2022	11:00
6	EW-02	7/21/2022	11:15
7	MW-29	7/21/2022	11:25

Total number of containers per analysis:

Relinquished By: / Company:	Date / Time	Received By: / Company:	Date / Time
Donelle Collier / H+A	7-21-22 11:43	Steve Netto / H+A	7-21-22 11:43
Relinquished By: / Company:	Date / Time	Received By: / Company:	Date / Time
Donelle Collier / H+A	7-21-22 11:43	Steve Netto / H+A	7-21-22 11:43

Instructions

1. Fill out form completely and sign only after verified for completeness
2. Complete in ballpoint pen. Draw one line through error, initial and date correction
3. Indicate the number of sample containers in analytical request space; indicate choice with ✓ or x
4. Note applicable preservatives, special instructions, and deviations from typical environmental samples.
5. Consult project QA documents for specific instructions.

Date: 7/21/2022
Page 1 of 1

MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED	Expected Concentration Range (ppb) for VOAs	SPECIAL HANDLING	REMARKS
Groundwater	Hydrochloric Acid (HCl)	40-ml VOA	1,4-Dioxane by EPA 8270C MOD	0 - 10	24 hr TAT	Advanced Technology Laboratories Attn: Justin Nunez 3275 Walnut Ave Signal Hill, CA 90755 (562) 989-4045
Lab prepared water	Nitric Acid (HNO ₃)	250 mL Poly	UV Absorption EPA 415.3 @ 254 nm	10 - 100	48 Hour TAT	
	Sulfuric Acid (H ₂ SO ₄)	250 mL Glass	Total Organic Carbon by SM5310B	>1,000	5 Day TAT	
		1 L Amber	Alkalinity by SM2320B			
			Bromide by EPA 300			
			Bromate by EPA 317			
			VOCs by EPA 8260B			
			1,4-Dioxane by EPA 8270C MOD			
			1,4-Dioxane by EPA 8270C SIM			
			Total Suspended Solids by SM2540D			
			Total Organic Carbon by SM5310B			
			Alkalinity by SM2320B			
			UV Absorption EPA 415.3 @ 254 nm			
			1,4-Dioxane by EPA 8270C MOD			
			1,4-Dioxane by EPA 8270C SIM			

Total No. of Containers: 26

No. of containers correct
Received in good condition
Custody seals secure
Conforms to COC document

Send Results to:
Steve Netto & Ruben Sanchez
3131 Camino Del Rio North
Suite 355
San Diego, CA 92108
Ph: 858.455.6500
snetto@hargis.com
rsanchez@hargis.com

Temperature on receipt



August 26, 2022

Steve Netto
Hargis & Associates, Inc.
3131 Camino De Rio North Suite 355
San Diego, CA 92108
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 2202120

Client Reference : Raytheon Main Gets Monthly Sample / 532.15

Enclosed are the results for sample(s) received on August 11, 2022 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or Project.Management@atlglobal.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Edward Bae'.

Edward Bae, Project Assistant
Edward.Bae@atlglobal.com

Authorized to Release on 08/26/22 15:17 on Behalf of

A handwritten signature in black ink, appearing to read 'Amy Leung'.

Amy Leung
Laboratory Director

The test results in this report relate exclusively to the samples as received by the laboratory, and meet the requirements of the methodology under which they were reported; any exceptions are noted within the report and/ or case narrative.

The cover letter/ signature page and the case narrative are integral parts of this analytical report; the absence of any portion of the report renders the report invalid. This report shall not be reproduced except in full, and shall have the express written approval of the laboratory, and the original client firm to do so

The electronic signature on this report is signed by an authorized signatory of Advanced Technology Laboratories, and is intended to be legally binding as the equivalent of a handwritten signature.



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-081122	2202120-01	Water	8/11/22 8:00	8/11/22 11:48
CEFF	2202120-02	Groundwater	8/11/22 9:30	8/11/22 11:48
CBT	2202120-03	Groundwater	8/11/22 9:35	8/11/22 11:48
POX	2202120-04	Groundwater	8/11/22 9:45	8/11/22 11:48
PF	2202120-05	Groundwater	8/11/22 9:50	8/11/22 11:48
INF	2202120-06	Groundwater	8/11/22 10:00	8/11/22 11:48
EW-02	2202120-07	Groundwater	8/11/22 10:20	8/11/22 11:48
MW-29	2202120-08	Groundwater	8/11/22 10:35	8/11/22 11:48



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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Notes and Definitions

S15	Surrogate recovery outside laboratory acceptance limit. However, the surrogate is not associated with the target analyte.
S12	Surrogate recovery outside in-house established limit but within method default criteria.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
L2	Laboratory Control Sample and/ or Laboratory Control Sample Duplicate outside of acceptance limits. Reextraction and/or reanalysis is not possible due to limited amount of sample.
H2	Holding time for preparation or analysis exceeded.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Certificate of Analysis

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San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyte: Residue, Suspended

Analyst: LN

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2202120-05	PF	ND	mg/L	1.0	1	B2H0937	08/16/2022	08/16/22 16:00	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: TB-081122

Lab ID: 2202120-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,1,1-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,1,2-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,1-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,1-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,1-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2,3-Trichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2-Dibromoethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,3-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,3-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
1,4-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
2,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
2-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
4-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
4-Isopropyltoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Benzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Bromobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Bromodichloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Bromoform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Bromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Carbon tetrachloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Chlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Chloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Chloroform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Chloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
cis-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
cis-1,3-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Dibromochloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Dibromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Dichlorodifluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Ethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: TB-081122

Lab ID: 2202120-01

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Isopropylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
m,p-Xylene	ND	1.0	1	B2H0896	08/11/2022	08/11/22 15:55	
Methylene chloride	ND	1.0	1	B2H0896	08/11/2022	08/11/22 15:55	
n-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
n-Propylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Naphthalene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
o-Xylene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
sec-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Styrene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
tert-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Tetrachloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Toluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
trans-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Trichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Trichlorofluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Vinyl chloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 15:55	
Surrogate: 1,2-Dichloroethane-d4	105 %	64 - 155		B2H0896	08/11/2022	08/11/22 15:55	
Surrogate: 4-Bromofluorobenzene	98.5 %	73 - 124		B2H0896	08/11/2022	08/11/22 15:55	
Surrogate: Dibromofluoromethane	103 %	78 - 129		B2H0896	08/11/2022	08/11/22 15:55	
Surrogate: Toluene-d8	102 %	84 - 117		B2H0896	08/11/2022	08/11/22 15:55	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: CEFF

Lab ID: 2202120-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,1,1-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,1,2-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,1-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,1-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,1-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2,3-Trichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2-Dibromoethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,3-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,3-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
1,4-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
2,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
2-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
4-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
4-Isopropyltoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Benzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Bromobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Bromodichloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Bromoform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Bromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Carbon tetrachloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Chlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Chloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Chloroform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Chloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
cis-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
cis-1,3-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Dibromochloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Dibromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Dichlorodifluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Ethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: CEFF

Lab ID: 2202120-02

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Isopropylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
m,p-Xylene	ND	1.0	1	B2H0896	08/11/2022	08/11/22 17:26	
Methylene chloride	ND	1.0	1	B2H0896	08/11/2022	08/11/22 17:26	
n-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
n-Propylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Naphthalene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
o-Xylene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
sec-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Styrene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
tert-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Tetrachloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Toluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
trans-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Trichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Trichlorofluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Vinyl chloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:26	
Surrogate: 1,2-Dichloroethane-d4	106 %	64 - 155		B2H0896	08/11/2022	08/11/22 17:26	
Surrogate: 4-Bromofluorobenzene	97.5 %	73 - 124		B2H0896	08/11/2022	08/11/22 17:26	
Surrogate: Dibromofluoromethane	102 %	78 - 129		B2H0896	08/11/2022	08/11/22 17:26	
Surrogate: Toluene-d8	101 %	84 - 117		B2H0896	08/11/2022	08/11/22 17:26	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2H0966	08/17/2022	08/17/22 12:19	
Surrogate: 1,2-Dichlorobenzene-d4	111 %	13 - 99		B2H0966	08/17/2022	08/17/22 12:19	S12
Surrogate: 2-Fluorobiphenyl	98.7 %	8 - 111		B2H0966	08/17/2022	08/17/22 12:19	
Surrogate: 4-Terphenyl-d14	132 %	12 - 113		B2H0966	08/17/2022	08/17/22 12:19	S15
Surrogate: Nitrobenzene-d5	100 %	15 - 121		B2H0966	08/17/2022	08/17/22 12:19	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: CBT

Lab ID: 2202120-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,1,1-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,1,2-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,1-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,1-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,1-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2,3-Trichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2,3-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2,4-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2,4-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2-Dibromoethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,3,5-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,3-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,3-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
1,4-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
2,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
2-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
4-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
4-Isopropyltoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Benzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Bromobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Bromodichloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Bromoform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Bromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Carbon tetrachloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Chlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Chloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Chloroform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Chloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
cis-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
cis-1,3-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Dibromochloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Dibromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Dichlorodifluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Ethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: CBT

Lab ID: 2202120-03

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Isopropylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
m,p-Xylene	ND	1.0	1	B2H0896	08/11/2022	08/11/22 17:52	
Methylene chloride	ND	1.0	1	B2H0896	08/11/2022	08/11/22 17:52	
n-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
n-Propylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Naphthalene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
o-Xylene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
sec-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Styrene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
tert-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Tetrachloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Toluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
trans-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Trichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Trichlorofluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Vinyl chloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 17:52	
Surrogate: 1,2-Dichloroethane-d4	108 %	64 - 155		B2H0896	08/11/2022	08/11/22 17:52	
Surrogate: 4-Bromofluorobenzene	98.8 %	73 - 124		B2H0896	08/11/2022	08/11/22 17:52	
Surrogate: Dibromofluoromethane	104 %	78 - 129		B2H0896	08/11/2022	08/11/22 17:52	
Surrogate: Toluene-d8	102 %	84 - 117		B2H0896	08/11/2022	08/11/22 17:52	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2H0966	08/17/2022	08/17/22 12:49	
Surrogate: 1,2-Dichlorobenzene-d4	110 %	13 - 99		B2H0966	08/17/2022	08/17/22 12:49	S12
Surrogate: 2-Fluorobiphenyl	98.0 %	8 - 111		B2H0966	08/17/2022	08/17/22 12:49	
Surrogate: 4-Terphenyl-d14	138 %	12 - 113		B2H0966	08/17/2022	08/17/22 12:49	S15
Surrogate: Nitrobenzene-d5	94.2 %	15 - 121		B2H0966	08/17/2022	08/17/22 12:49	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: POX

Lab ID: 2202120-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,1,1-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,1,2-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,1-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,1-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,1-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2,3-Trichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2,3-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2,4-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2,4-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2-Dibromoethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,3,5-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,3-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,3-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
1,4-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
2,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
2-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
4-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
4-Isopropyltoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Benzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Bromobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Bromodichloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Bromoform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Bromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Carbon tetrachloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Chlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Chloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Chloroform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Chloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
cis-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
cis-1,3-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Dibromochloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Dibromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Dichlorodifluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Ethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: POX

Lab ID: 2202120-04

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Isopropylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
m,p-Xylene	ND	1.0	1	B2H0896	08/11/2022	08/11/22 18:18	
Methylene chloride	ND	1.0	1	B2H0896	08/11/2022	08/11/22 18:18	
n-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
n-Propylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Naphthalene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
o-Xylene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
sec-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Styrene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
tert-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Tetrachloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Toluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
trans-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Trichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Trichlorofluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Vinyl chloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:18	
Surrogate: 1,2-Dichloroethane-d4	107 %	64 - 155		B2H0896	08/11/2022	08/11/22 18:18	
Surrogate: 4-Bromofluorobenzene	97.1 %	73 - 124		B2H0896	08/11/2022	08/11/22 18:18	
Surrogate: Dibromofluoromethane	101 %	78 - 129		B2H0896	08/11/2022	08/11/22 18:18	
Surrogate: Toluene-d8	103 %	84 - 117		B2H0896	08/11/2022	08/11/22 18:18	

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B2H0966	08/17/2022	08/17/22 13:20	
Surrogate: 1,2-Dichlorobenzene-d4	108 %	13 - 99		B2H0966	08/17/2022	08/17/22 13:20	S12
Surrogate: 2-Fluorobiphenyl	97.9 %	8 - 111		B2H0966	08/17/2022	08/17/22 13:20	
Surrogate: 4-Terphenyl-d14	133 %	12 - 113		B2H0966	08/17/2022	08/17/22 13:20	S15
Surrogate: Nitrobenzene-d5	97.8 %	15 - 121		B2H0966	08/17/2022	08/17/22 13:20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: INF

Lab ID: 2202120-06

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,1,1-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,1,2-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,1-Dichloroethane	0.64	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,1-Dichloroethene	69	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,1-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2,3-Trichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2,3-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2,4-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2,4-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2-Dibromoethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,3,5-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,3-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,3-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
1,4-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
2,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
2-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
4-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
4-Isopropyltoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Benzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Bromobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Bromodichloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Bromoform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Bromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Carbon tetrachloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Chlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Chloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Chloroform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Chloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
cis-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
cis-1,3-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Dibromochloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Dibromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Dichlorodifluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Ethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: INF

Lab ID: 2202120-06

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Isopropylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
m,p-Xylene	ND	1.0	1	B2H0896	08/11/2022	08/11/22 18:43	
Methylene chloride	ND	1.0	1	B2H0896	08/11/2022	08/11/22 18:43	
n-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
n-Propylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Naphthalene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
o-Xylene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
sec-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Styrene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
tert-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Tetrachloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Toluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
trans-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Trichloroethene	0.69	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Trichlorofluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
Vinyl chloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 18:43	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>64 - 155</i>		B2H0896	08/11/2022	<i>08/11/22 18:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.1 %</i>	<i>73 - 124</i>		B2H0896	08/11/2022	<i>08/11/22 18:43</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.4 %</i>	<i>78 - 129</i>		B2H0896	08/11/2022	<i>08/11/22 18:43</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>84 - 117</i>		B2H0896	08/11/2022	<i>08/11/22 18:43</i>	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	35	2.0	1	B2H1075	08/24/2022	08/24/22 12:54	H2
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>87.7 %</i>	<i>17 - 119</i>		B2H1075	08/24/2022	<i>08/24/22 12:54</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>89.2 %</i>	<i>10 - 133</i>		B2H1075	08/24/2022	<i>08/24/22 12:54</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.6 %</i>	<i>5 - 139</i>		B2H1075	08/24/2022	<i>08/24/22 12:54</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>89.4 %</i>	<i>13 - 150</i>		B2H1075	08/24/2022	<i>08/24/22 12:54</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: EW-02

Lab ID: 2202120-07

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,1,1-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,1,2-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,1-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,1-Dichloroethene	16	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,1-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2,3-Trichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2,3-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2,4-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2,4-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2-Dibromoethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,3,5-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,3-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,3-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
1,4-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
2,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
2-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
4-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
4-Isopropyltoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Benzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Bromobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Bromodichloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Bromoform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Bromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Carbon tetrachloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Chlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Chloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Chloroform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Chloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
cis-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
cis-1,3-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Dibromochloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Dibromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Dichlorodifluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Ethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: EW-02

Lab ID: 2202120-07

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Isopropylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
m,p-Xylene	ND	1.0	1	B2H0896	08/11/2022	08/11/22 19:09	
Methylene chloride	ND	1.0	1	B2H0896	08/11/2022	08/11/22 19:09	
n-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
n-Propylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Naphthalene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
o-Xylene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
sec-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Styrene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
tert-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Tetrachloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Toluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
trans-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Trichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Trichlorofluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Vinyl chloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:09	
Surrogate: 1,2-Dichloroethane-d4	110 %	64 - 155		B2H0896	08/11/2022	08/11/22 19:09	
Surrogate: 4-Bromofluorobenzene	98.2 %	73 - 124		B2H0896	08/11/2022	08/11/22 19:09	
Surrogate: Dibromofluoromethane	103 %	78 - 129		B2H0896	08/11/2022	08/11/22 19:09	
Surrogate: Toluene-d8	102 %	84 - 117		B2H0896	08/11/2022	08/11/22 19:09	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	4.3	2.0	1	B2H1075	08/24/2022	08/24/22 13:20	H2
Surrogate: 1,2-Dichlorobenzene-d4	95.9 %	17 - 119		B2H1075	08/24/2022	08/24/22 13:20	
Surrogate: 2-Fluorobiphenyl	93.3 %	10 - 133		B2H1075	08/24/2022	08/24/22 13:20	
Surrogate: 4-Terphenyl-d14	89.9 %	5 - 139		B2H1075	08/24/2022	08/24/22 13:20	
Surrogate: Nitrobenzene-d5	90.0 %	13 - 150		B2H1075	08/24/2022	08/24/22 13:20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: MW-29

Lab ID: 2202120-08

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,1,1-Trichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,1,2-Trichloroethane	0.62	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,1-Dichloroethane	1.8	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,1-Dichloroethene	220	5.0	10	B2H0896	08/11/2022	08/11/22 20:01	
1,1-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2,3-Trichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2-Dibromoethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2-Dichloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,3-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,3-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
1,4-Dichlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
2,2-Dichloropropane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
2-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
4-Chlorotoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
4-Isopropyltoluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Benzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Bromobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Bromodichloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Bromoform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Bromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Carbon tetrachloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Chlorobenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Chloroethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Chloroform	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Chloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
cis-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
cis-1,3-Dichloropropene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Dibromochloromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Dibromomethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Dichlorodifluoromethane	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Ethylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Client Sample ID: MW-29

Lab ID: 2202120-08

Volatile Organic Compounds by EPA 8260B

Analyst: HH

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Hexachlorobutadiene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Isopropylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
m,p-Xylene	ND	1.0	1	B2H0896	08/11/2022	08/11/22 19:35	
Methylene chloride	ND	1.0	1	B2H0896	08/11/2022	08/11/22 19:35	
n-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
n-Propylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Naphthalene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
o-Xylene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
sec-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Styrene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
tert-Butylbenzene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Tetrachloroethene	0.64	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Toluene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
trans-1,2-Dichloroethene	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Trichloroethene	2.0	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Trichlorofluoromethane	0.71	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
Vinyl chloride	ND	0.50	1	B2H0896	08/11/2022	08/11/22 19:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>107 %</i>	<i>64 - 155</i>		B2H0896	08/11/2022	<i>08/11/22 19:35</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>	<i>64 - 155</i>		B2H0896	08/11/2022	<i>08/11/22 20:01</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.6 %</i>	<i>73 - 124</i>		B2H0896	08/11/2022	<i>08/11/22 19:35</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.1 %</i>	<i>73 - 124</i>		B2H0896	08/11/2022	<i>08/11/22 20:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.9 %</i>	<i>78 - 129</i>		B2H0896	08/11/2022	<i>08/11/22 19:35</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>78 - 129</i>		B2H0896	08/11/2022	<i>08/11/22 20:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>84 - 117</i>		B2H0896	08/11/2022	<i>08/11/22 19:35</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>84 - 117</i>		B2H0896	08/11/2022	<i>08/11/22 20:01</i>	

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: EB

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	95	2.0	1	B2H1075	08/24/2022	08/24/22 13:47	H2
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>93.4 %</i>	<i>17 - 119</i>		B2H1075	08/24/2022	<i>08/24/22 13:47</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>93.4 %</i>	<i>10 - 133</i>		B2H1075	08/24/2022	<i>08/24/22 13:47</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>88.8 %</i>	<i>5 - 139</i>		B2H1075	08/24/2022	<i>08/24/22 13:47</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>91.5 %</i>	<i>13 - 150</i>		B2H1075	08/24/2022	<i>08/24/22 13:47</i>	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

QUALITY CONTROL SECTION

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0937 - No_Prep_WC1_W

Blank (B2H0937-BLK1)

Prepared: 8/16/2022 Analyzed: 8/16/2022

Residue, Suspended ND 1.0 1.0

LCS (B2H0937-BS1)

Prepared: 8/16/2022 Analyzed: 8/16/2022

Residue, Suspended 99.0000 10 10 100.000 99.0 80 - 120

Duplicate (B2H0937-DUP1)

Source: 2202114-01

Prepared: 8/16/2022 Analyzed: 8/16/2022

Residue, Suspended 120.000 20 20 116.000 3.39 10



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0896 - MSVOA_LL_W

Blank (B2H0896-BLK1)

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,2,2-Tetrachloroethane	ND	0.50	0.36
1,1,2-Trichloroethane	ND	0.50	0.25
1,1-Dichloroethane	ND	0.50	0.09
1,1-Dichloroethene	ND	0.50	0.13
1,1-Dichloropropene	ND	0.50	0.13
1,2,3-Trichloropropane	ND	0.50	0.39
1,2,3-Trichlorobenzene	ND	0.50	0.18
1,2,4-Trichlorobenzene	ND	0.50	0.16
1,2,4-Trimethylbenzene	ND	0.50	0.14
1,2-Dibromo-3-chloropropane	ND	0.50	0.41
1,2-Dibromoethane	ND	0.50	0.24
1,2-Dichlorobenzene	ND	0.50	0.20
1,2-Dichloroethane	ND	0.50	0.20
1,2-Dichloropropane	ND	0.50	0.15
1,3,5-Trimethylbenzene	ND	0.50	0.13
1,3-Dichlorobenzene	ND	0.50	0.16
1,3-Dichloropropane	ND	0.50	0.21
1,4-Dichlorobenzene	ND	0.50	0.17
2,2-Dichloropropane	ND	0.50	0.38
2-Chlorotoluene	ND	0.50	0.11
4-Chlorotoluene	ND	0.50	0.12
4-Isopropyltoluene	ND	0.50	0.11
Benzene	ND	0.50	0.13
Bromobenzene	ND	0.50	0.21
Bromodichloromethane	ND	0.50	0.14
Bromoform	ND	0.50	0.20
Bromomethane	ND	0.50	0.40
Carbon tetrachloride	ND	0.50	0.09
Chlorobenzene	ND	0.50	0.13
Chloroethane	ND	0.50	0.15
Chloroform	ND	0.50	0.11
Chloromethane	ND	0.50	0.12
cis-1,2-Dichloroethene	ND	0.50	0.14
cis-1,3-Dichloropropene	ND	0.50	0.13
Dibromochloromethane	ND	0.50	0.16
Dibromomethane	ND	0.50	0.19
Dichlorodifluoromethane	ND	0.50	0.18
Ethylbenzene	ND	0.50	0.13
Hexachlorobutadiene	ND	0.50	0.15
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.19
Methylene chloride	ND	1.0	0.71
n-Butylbenzene	ND	0.50	0.11



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3131 Camino De Rio North Suite 355

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Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

Blank (B2H0896-BLK1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

n-Propylbenzene	ND	0.50	0.10
Naphthalene	ND	0.50	0.41
o-Xylene	ND	0.50	0.13
sec-Butylbenzene	ND	0.50	0.09
Styrene	ND	0.50	0.13
tert-Butylbenzene	ND	0.50	0.09
Tetrachloroethene	ND	0.50	0.10
Toluene	ND	0.50	0.12
trans-1,2-Dichloroethene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.10
Trichlorofluoromethane	ND	0.50	0.23
Vinyl chloride	ND	0.50	0.13

Surrogate: 1,2-Dichloroethane-d4	26.76		25.0000	107	64 - 155
Surrogate: 4-Bromofluorobenzene	24.89		25.0000	99.6	73 - 124
Surrogate: Dibromofluoromethane	25.54		25.0000	102	78 - 129
Surrogate: Toluene-d8	25.89		25.0000	104	84 - 117

LCS (B2H0896-BS1)

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,1,1,2-Tetrachloroethane	21.0100	0.50	0.11	20.0000	105	79 - 116
1,1,1-Trichloroethane	22.3200	0.50	0.21	20.0000	112	73 - 130
1,1,2,2-Tetrachloroethane	21.0200	0.50	0.36	20.0000	105	71 - 122
1,1,2-Trichloroethane	21.8100	0.50	0.25	20.0000	109	70 - 124
1,1-Dichloroethane	22.3500	0.50	0.09	20.0000	112	69 - 128
1,1-Dichloroethene	23.1900	0.50	0.13	20.0000	116	65 - 137
1,1-Dichloropropene	22.6100	0.50	0.13	20.0000	113	74 - 129
1,2,3-Trichloropropane	20.7200	0.50	0.39	20.0000	104	74 - 123
1,2,3-Trichlorobenzene	22.9800	0.50	0.18	20.0000	115	59 - 130
1,2,4-Trichlorobenzene	21.6600	0.50	0.16	20.0000	108	65 - 125
1,2,4-Trimethylbenzene	21.5300	0.50	0.14	20.0000	108	88 - 124
1,2-Dibromo-3-chloropropane	21.2800	0.50	0.41	20.0000	106	61 - 127
1,2-Dibromoethane	21.5200	0.50	0.24	20.0000	108	72 - 125
1,2-Dichlorobenzene	20.8300	0.50	0.20	20.0000	104	84 - 113
1,2-Dichloroethane	21.5900	0.50	0.20	20.0000	108	68 - 130
1,2-Dichloropropane	21.9500	0.50	0.15	20.0000	110	77 - 121
1,3,5-Trimethylbenzene	21.8200	0.50	0.13	20.0000	109	83 - 124
1,3-Dichlorobenzene	21.2800	0.50	0.16	20.0000	106	83 - 112
1,3-Dichloropropane	21.3600	0.50	0.21	20.0000	107	77 - 119
1,4-Dichlorobenzene	21.0500	0.50	0.17	20.0000	105	79 - 115
2,2-Dichloropropane	23.0100	0.50	0.38	20.0000	115	67 - 149
2-Chlorotoluene	21.5600	0.50	0.11	20.0000	108	81 - 119
4-Chlorotoluene	21.2700	0.50	0.12	20.0000	106	86 - 117
4-Isopropyltoluene	22.2300	0.50	0.11	20.0000	111	82 - 131
Benzene	22.5400	0.50	0.13	20.0000	113	75 - 124
Bromobenzene	20.3000	0.50	0.21	20.0000	102	82 - 108
Bromodichloromethane	22.5100	0.50	0.14	20.0000	113	80 - 120



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

LCS (B2H0896-BS1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

Bromoform	20.5700	0.50	0.20	20.0000		103	70 - 123			
Bromomethane	26.3500	0.50	0.40	20.0000		132	44 - 151			
Carbon tetrachloride	22.7400	0.50	0.09	20.0000		114	62 - 140			
Chlorobenzene	21.2100	0.50	0.13	20.0000		106	80 - 112			
Chloroethane	25.0800	0.50	0.15	20.0000		125	42 - 167			
Chloroform	22.8900	0.50	0.11	20.0000		114	77 - 122			
Chloromethane	22.8100	0.50	0.12	20.0000		114	33 - 153			
cis-1,2-Dichloroethene	21.9700	0.50	0.14	20.0000		110	75 - 121			
cis-1,3-Dichloropropene	22.3500	0.50	0.13	20.0000		112	73 - 127			
Dibromochloromethane	19.5400	0.50	0.16	20.0000		97.7	77 - 122			
Dibromomethane	21.5400	0.50	0.19	20.0000		108	75 - 121			
Dichlorodifluoromethane	24.3200	0.50	0.18	20.0000		122	0 - 171			
Ethylbenzene	22.0800	0.50	0.13	20.0000		110	82 - 119			
Hexachlorobutadiene	21.3800	0.50	0.15	20.0000		107	71 - 131			
Isopropylbenzene	21.7300	0.50	0.10	20.0000		109	75 - 126			
m,p-Xylene	43.8600	1.0	0.19	40.0000		110	86 - 119			
Methylene chloride	22.1000	1.0	0.71	20.0000		110	76 - 125			
n-Butylbenzene	22.6900	0.50	0.11	20.0000		113	81 - 125			
n-Propylbenzene	22.0400	0.50	0.10	20.0000		110	78 - 130			
Naphthalene	23.0600	0.50	0.41	20.0000		115	47 - 128			
o-Xylene	20.9500	0.50	0.13	20.0000		105	85 - 119			
sec-Butylbenzene	22.2500	0.50	0.09	20.0000		111	78 - 130			
Styrene	21.9700	0.50	0.13	20.0000		110	62 - 148			
tert-Butylbenzene	21.6900	0.50	0.09	20.0000		108	77 - 125			
Tetrachloroethene	21.6100	0.50	0.10	20.0000		108	73 - 120			
Toluene	21.6700	0.50	0.12	20.0000		108	79 - 119			
trans-1,2-Dichloroethene	22.0000	0.50	0.09	20.0000		110	70 - 129			
Trichloroethene	21.9800	0.50	0.10	20.0000		110	73 - 117			
Trichlorofluoromethane	23.1900	0.50	0.23	20.0000		116	59 - 135			
Vinyl chloride	24.4400	0.50	0.13	20.0000		122	58 - 132			
Surrogate: 1,2-Dichloroethane-d4	25.75			25.0000		103	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.95			25.0000		99.8	73 - 124			
Surrogate: Dibromofluoromethane	25.46			25.0000		102	78 - 129			
Surrogate: Toluene-d8	25.48			25.0000		102	84 - 117			

LCS Dup (B2H0896-BSD1)

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,1,1,2-Tetrachloroethane	20.5100	0.50	0.11	20.0000		103	79 - 116	2.41	20	
1,1,1-Trichloroethane	21.6600	0.50	0.21	20.0000		108	73 - 130	3.00	20	
1,1,2,2-Tetrachloroethane	21.1500	0.50	0.36	20.0000		106	71 - 122	0.617	20	
1,1,2-Trichloroethane	22.0400	0.50	0.25	20.0000		110	70 - 124	1.05	20	
1,1-Dichloroethane	21.7400	0.50	0.09	20.0000		109	69 - 128	2.77	20	
1,1-Dichloroethene	22.5300	0.50	0.13	20.0000		113	65 - 137	2.89	20	
1,1-Dichloropropene	21.8000	0.50	0.13	20.0000		109	74 - 129	3.65	20	
1,2,3-Trichloropropane	20.4900	0.50	0.39	20.0000		102	74 - 123	1.12	20	
1,2,3-Trichlorobenzene	22.1600	0.50	0.18	20.0000		111	59 - 130	3.63	20	



Certificate of Analysis

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Project Number : Raytheon Main Gets Monthly Sample / 532.15

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Reported : 08/26/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

LCS Dup (B2H0896-BSD1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

1,2,4-Trichlorobenzene	21.0600	0.50	0.16	20.0000		105	65 - 125	2.81	20	
1,2,4-Trimethylbenzene	20.4100	0.50	0.14	20.0000		102	88 - 124	5.34	20	
1,2-Dibromo-3-chloropropane	21.0100	0.50	0.41	20.0000		105	61 - 127	1.28	20	
1,2-Dibromoethane	22.0600	0.50	0.24	20.0000		110	72 - 125	2.48	20	
1,2-Dichlorobenzene	20.2000	0.50	0.20	20.0000		101	84 - 113	3.07	20	
1,2-Dichloroethane	21.6700	0.50	0.20	20.0000		108	68 - 130	0.370	20	
1,2-Dichloropropane	21.9100	0.50	0.15	20.0000		110	77 - 121	0.182	20	
1,3,5-Trimethylbenzene	20.4800	0.50	0.13	20.0000		102	83 - 124	6.34	20	
1,3-Dichlorobenzene	20.4900	0.50	0.16	20.0000		102	83 - 112	3.78	20	
1,3-Dichloropropane	21.1900	0.50	0.21	20.0000		106	77 - 119	0.799	20	
1,4-Dichlorobenzene	20.0300	0.50	0.17	20.0000		100	79 - 115	4.97	20	
2,2-Dichloropropane	22.1100	0.50	0.38	20.0000		111	67 - 149	3.99	20	
2-Chlorotoluene	20.3800	0.50	0.11	20.0000		102	81 - 119	5.63	20	
4-Chlorotoluene	19.8000	0.50	0.12	20.0000		99.0	86 - 117	7.16	20	
4-Isopropyltoluene	20.8500	0.50	0.11	20.0000		104	82 - 131	6.41	20	
Benzene	21.7700	0.50	0.13	20.0000		109	75 - 124	3.48	20	
Bromobenzene	19.9500	0.50	0.21	20.0000		99.8	82 - 108	1.74	20	
Bromodichloromethane	22.3200	0.50	0.14	20.0000		112	80 - 120	0.848	20	
Bromoform	20.7300	0.50	0.20	20.0000		104	70 - 123	0.775	20	
Bromomethane	25.4600	0.50	0.40	20.0000		127	44 - 151	3.44	20	
Carbon tetrachloride	22.1100	0.50	0.09	20.0000		111	62 - 140	2.81	20	
Chlorobenzene	20.6500	0.50	0.13	20.0000		103	80 - 112	2.68	20	
Chloroethane	24.8000	0.50	0.15	20.0000		124	42 - 167	1.12	20	
Chloroform	22.1300	0.50	0.11	20.0000		111	77 - 122	3.38	20	
Chloromethane	22.8700	0.50	0.12	20.0000		114	33 - 153	0.263	20	
cis-1,2-Dichloroethene	21.2900	0.50	0.14	20.0000		106	75 - 121	3.14	20	
cis-1,3-Dichloropropene	22.3000	0.50	0.13	20.0000		112	73 - 127	0.224	20	
Dibromochloromethane	19.4200	0.50	0.16	20.0000		97.1	77 - 122	0.616	20	
Dibromomethane	21.7000	0.50	0.19	20.0000		108	75 - 121	0.740	20	
Dichlorodifluoromethane	23.2200	0.50	0.18	20.0000		116	0 - 171	4.63	20	
Ethylbenzene	21.0700	0.50	0.13	20.0000		105	82 - 119	4.68	20	
Hexachlorobutadiene	20.2800	0.50	0.15	20.0000		101	71 - 131	5.28	20	
Isopropylbenzene	20.4600	0.50	0.10	20.0000		102	75 - 126	6.02	20	
m,p-Xylene	42.3300	1.0	0.19	40.0000		106	86 - 119	3.55	20	
Methylene chloride	22.2500	1.0	0.71	20.0000		111	76 - 125	0.676	20	
n-Butylbenzene	21.3100	0.50	0.11	20.0000		107	81 - 125	6.27	20	
n-Propylbenzene	20.8900	0.50	0.10	20.0000		104	78 - 130	5.36	20	
Naphthalene	23.2100	0.50	0.41	20.0000		116	47 - 128	0.648	20	
o-Xylene	21.0900	0.50	0.13	20.0000		105	85 - 119	0.666	20	
sec-Butylbenzene	20.7600	0.50	0.09	20.0000		104	78 - 130	6.93	20	
Styrene	21.4200	0.50	0.13	20.0000		107	62 - 148	2.54	20	
tert-Butylbenzene	20.4400	0.50	0.09	20.0000		102	77 - 125	5.93	20	
Tetrachloroethene	21.0600	0.50	0.10	20.0000		105	73 - 120	2.58	20	
Toluene	21.1700	0.50	0.12	20.0000		106	79 - 119	2.33	20	
trans-1,2-Dichloroethene	21.2000	0.50	0.09	20.0000		106	70 - 129	3.70	20	



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B2H0896 - MSVOA_LL_W (continued)

LCS Dup (B2H0896-BSD1) - Continued

Prepared: 8/11/2022 Analyzed: 8/11/2022

Trichloroethene	21.3100	0.50	0.10	20.0000		107	73 - 117	3.10	20
Trichlorofluoromethane	22.2700	0.50	0.23	20.0000		111	59 - 135	4.05	20
Vinyl chloride	23.3400	0.50	0.13	20.0000		117	58 - 132	4.60	20
Surrogate: 1,2-Dichloroethane-d4	25.54			25.0000		102	64 - 155		
Surrogate: 4-Bromofluorobenzene	25.53			25.0000		102	73 - 124		
Surrogate: Dibromofluoromethane	25.59			25.0000		102	78 - 129		
Surrogate: Toluene-d8	25.47			25.0000		102	84 - 117		



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H1075 - MSSEMI_W

Blank (B2H1075-BLK1)

Prepared: 8/24/2022 Analyzed: 8/24/2022

1,4-Dioxane ND 2.0 0.84

Surrogate: 1,2-Dichlorobenzene-d4	95.29		100.000	95.3	17 - 119
Surrogate: 2-Fluorobiphenyl	92.85		100.000	92.8	10 - 133
Surrogate: 4-Terphenyl-d14	89.92		100.000	89.9	5 - 139
Surrogate: Nitrobenzene-d5	93.55		100.000	93.6	13 - 150

LCS (B2H1075-BS1)

Prepared: 8/24/2022 Analyzed: 8/24/2022

1,4-Dioxane 104.210 2.0 0.84 100.000 104 75 - 155

Surrogate: 1,2-Dichlorobenzene-d4	92.76		100.000	92.8	17 - 119
Surrogate: 2-Fluorobiphenyl	93.60		100.000	93.6	10 - 133
Surrogate: 4-Terphenyl-d14	91.56		100.000	91.6	5 - 139
Surrogate: Nitrobenzene-d5	101.6		100.000	102	13 - 150

LCS Dup (B2H1075-BSD1)

Prepared: 8/24/2022 Analyzed: 8/24/2022

1,4-Dioxane 107.300 2.0 0.84 100.000 107 75 - 155 2.92 20

Surrogate: 1,2-Dichlorobenzene-d4	93.74		100.000	93.7	17 - 119
Surrogate: 2-Fluorobiphenyl	92.90		100.000	92.9	10 - 133
Surrogate: 4-Terphenyl-d14	91.44		100.000	91.4	5 - 139
Surrogate: Nitrobenzene-d5	99.74		100.000	99.7	13 - 150



Certificate of Analysis

Hargis & Associates, Inc.

3131 Camino De Rio North Suite 355

San Diego , CA 92108

Project Number : Raytheon Main Gets Monthly Sample / 532.15

Report To : Steve Netto

Reported : 08/26/2022

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	Limit	Notes

Batch B2H0966 - MSSEMI_W

Blank (B2H0966-BLK1)

Prepared: 8/17/2022 Analyzed: 8/17/2022

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d4	1.093			1.00000	109	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	1.008			1.00000	101	8 - 111			
Surrogate: 4-Terphenyl-d14	1.115			1.00000	111	12 - 113			
Surrogate: Nitrobenzene-d5	0.9896			1.00000	99.0	15 - 121			

LCS (B2H0966-BS1)

Prepared: 8/17/2022 Analyzed: 8/17/2022

1,4-Dioxane	1.23172	0.20	0.05	1.00000	123	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d4	1.079			1.00000	108	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9910			1.00000	99.1	8 - 111			
Surrogate: 4-Terphenyl-d14	1.220			1.00000	122	12 - 113			S12
Surrogate: Nitrobenzene-d5	0.9881			1.00000	98.8	15 - 121			

LCS Dup (B2H0966-BSD1)

Prepared: 8/17/2022 Analyzed: 8/17/2022

1,4-Dioxane	2.03014	0.20	0.05	1.00000	203	75 - 155	49.0	20	L2, R
Surrogate: 1,2-Dichlorobenzene-d4	1.122			1.00000	112	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	0.9605			1.00000	96.1	8 - 111			
Surrogate: 4-Terphenyl-d14	1.194			1.00000	119	12 - 113			S12
Surrogate: Nitrobenzene-d5	0.9786			1.00000	97.9	15 - 121			



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

REPORTING DATE: 08/26/2022
SAMPLE RECEIVED: 08/16/2022
LABORATORY NO.: 22-2074-1

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2202120-04 / POX
MATRIX: Groundwater

DATE SAMPLED : 08/11/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Alkalinity, Total (as CaCO ₃)	215	mg/L	5.00	1	SM 2320 B	08/24/22
Bicarbonate (as CaCO ₃)	215	mg/L	5.00	1	SM 2320 B	08/24/22
Carbonate (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	08/24/22
Hydroxide (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	08/24/22
Total Organic Carbon	0.50	mg/L	0.50	1	SM 5310 D	08/25/22
Bromate	ND	ug/L	25.0	5	EPA 300.1	08/22/22
<u>Surrogate Recovery</u>	<u>Rec (%)</u>				<u>Control Limits</u>	
Dichloroacetate (Surr)	95				90-115	

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: _____



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

REPORTING DATE: 08/26/2022
SAMPLE RECEIVED: 08/16/2022
LABORATORY NO.: 22-2074-2

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2202120-05 / PF
MATRIX: Groundwater

DATE SAMPLED : 08/11/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Alkalinity, Total (as CaCO ₃)	214	mg/L	5.00	1	SM 2320 B	08/24/22
Bicarbonate (as CaCO ₃)	214	mg/L	5.00	1	SM 2320 B	08/24/22
Carbonate (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	08/24/22
Hydroxide (as CaCO ₃)	ND	mg/L	5.00	1	SM 2320 B	08/24/22
Total Organic Carbon	0.51	mg/L	0.50	1	SM 5310 D	08/25/22

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: 



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2202120-06 / INF
MATRIX: Groundwater

REPORTING DATE: 08/26/2022
SAMPLE RECEIVED: 08/16/2022
LABORATORY NO.: 22-2074-3
DATE SAMPLED : 08/11/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.30	mg/L	0.10	1	EPA 300.0	08/18/22
Bromate	ND	ug/L	25.0	5	EPA 300.1	08/22/22
<u>Surrogate Recovery</u>	<u>Rec (%)</u>				<u>Control Limits</u>	
Dichloroacetate (Surr)	97				90-115	

*ND: Parameter not detected at the indicated reporting limit.

Analyses were performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: 



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2202120-07 / EW-02
MATRIX: Groundwater

REPORTING DATE: 08/26/2022
SAMPLE RECEIVED: 08/16/2022
LABORATORY NO.: 22-2074-4
DATE SAMPLED : 08/11/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.25	mg/L	0.10	1	EPA 300.0	08/18/22

* EPA 300.0 was performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature: 



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CERTIFICATE OF ANALYSIS

CLIENT: **Advanced Technology Laboratories**
3275 Walnut Avenue
Signal Hill, CA 90755

PROJECT CONT. PERSON: Jerald Ancheta
SAMPLE I.D.: 2202120-08 / MW-29
MATRIX: Groundwater

REPORTING DATE: 08/26/2022
SAMPLE RECEIVED: 08/16/2022
LABORATORY NO.: 22-2074-5
DATE SAMPLED : 08/11/2022
CA STATE ELAP NO.: 2968
LACSD LAB I.D. NO.: 9249178
INVESTIGATION: SEE BELOW
PAGE: 1 OF 1

Parameter	Result	Units	Reporting Limit	Dil. Fac.	Method	Analyzed
Bromide	0.47	mg/L	0.10	1	EPA 300.0	08/18/22

* EPA 300.0 was performed by partnership lab, CA State I.D. No. 2944 & LACSD LAB I.D. No. 10109

Note: All results contained in the above report relate only to the items tested.
All samples received in satisfactory condition unless noted otherwise.
For Questions or Comments Contact: Jina R. Kim, 213-292-6474 or jkim@jkbioscience.com

Approval By: Jina R. Kim, Laboratory Director

Signature:  _____

ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 2202120

22-2074

SENDING LABORATORY:

Advanced Technology Laboratories
 3275 Walnut Avenue
 Signal Hill, CA 90755
 Phone: 562.989.4045
 Fax: 562.989.6348
 Contact emails: subcontract@atlglobal.com
 Project.Management@atlglobal.com
 Sampler: Ruben Sanchez

RECEIVING LABORATORY:

JK Bioscience, Inc.
 1926 E. Gladwick Street
 Rancho Dominguez, CA 90220
 Phone : (213) 292-6474
 Fax:
 PO#: SC16239

IMPORTANT : Please 'J-Flag' results to MDL. Please include Work Order # and PO # in your invoice.

QC Requirements:

☒ Routine ☐ MS/MSD
☐ Caltrans ☐ Level IV*
☐ DUP ☐ Other: _____

TAT Requirements:

☒ Standard
☐ Rush _____ Days
☐ Fastest Possible

EDD Requirements:

☐ Standard Excel
☐ Geotracker EDF
☐ EQuis
☐ Other: _____

* All Level IV sample containers (including empty ones) must be returned to ATL 30 days after receipt.

Analysis	Expires	Sampled	Comments
ATL Lab#: 2202120-04 / POX	Groundwater	08/11/22 09:45	22-2074-1
Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS]	09/08/22 09:45	Poly Unpres - 125mL	
Speciated Alkalinity_2320B_SUB [Alkalinity, Speciated]	08/25/22 09:45	Poly Unpres - 125mL	
TOC_SUB [Total Organic Carbon]	09/08/22 09:45	Voa Vial - H2SO4	

Prepared by:

[Signature] 8/15/22

Sample Control Technician

Date

Inspected by:

[Signature] 8/15/22

PM Lead / SC Lead

Date

Approved by:

[Signature] 08/15/2022

Dedicated ATL Project Manager

Date

Released By ATL Sample Control

Date

Time

Received By Courier

Date

Time

[Signature] 8/16/22 8:40

Released By Courier

Date

Time

Received By Subcontract Laboratory

Date

Time

Released By

Date

Time

Received By

Date

Time

ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 2202120

Analysis	Expires	Sampled	Comments
ATL Lab#: 2202120-05 / PF Speciated Alkalinity_2320B_SUB [Alkalinity, Speciated] TOC_SUB [Total Organic Carbon]	Groundwater 08/25/22 09:50 09/08/22 09:50	08/11/22 09:50 Poly Unpres - 125mL Voa Vial - H2S04	22-2074-2
ATL Lab#: 2202120-06 / INF 300_Bromide_SUB [Bromide by Ion Chromatography] Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS]	Groundwater 09/08/22 10:00 09/08/22 10:00	08/11/22 10:00 Poly Unpres - 125mL Poly Unpres - 125mL	22-2074-3
ATL Lab#: 2202120-07 / EW-02 300_Bromide_SUB [Bromide by Ion Chromatography]	Groundwater 09/08/22 10:20	08/11/22 10:20 Poly Unpres - 125mL	22-2074-4
ATL Lab#: 2202120-08 / MW-29 300_Bromide_SUB [Bromide by Ion Chromatography]	Groundwater 09/08/22 10:35	08/11/22 10:35 Poly Unpres - 125mL	22-2074-5

Prepared by: [Signature] 8/15/22
 Sample Control Technician Date

Inspected by: [Signature] 8/15/22
 PM Lead / SC Lead Date

Approved by: Victoria Uchida 08/15/2022
 Dedicated ATL Project Manager Date
[Signature] 8/16/22 8:40

Released By ATL Sample Control Date Time

Released By Courier Date Time

Released By Date Time

Received By Courier Date Time
[Signature] 8/16/22 8:40

Received By Subcontract Laboratory Date Time

Received By Date Time