



HARGIS + ASSOCIATES, INC.

HYDROGEOLOGY • ENGINEERING

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August 3, 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, Second Quarter 2021, 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 second quarter 2021 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, and 2011b). Groundwater treatment pilot testing continued throughout the second quarter 2021 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 second quarter 2021 groundwater monitoring and pilot GETS operation from March through May 2021 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 May 2021 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 May 24, 2021 (Table 2).

Groundwater samples were collected during the period from May 25 through May 27, 2021 (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.

Other Offices:
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, Garden Grove, 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).

On May 27, 2021, a new submersible pump was installed in monitor well MW-33 to replace the existing inoperable submersible pump that failed during the February 2021 groundwater monitoring event. The replacement submersible pump (3-inch diameter Grundfos 22-SQ10-160) was installed at 560 feet below ground surface. The monitor well was sampled using the new submersible pump in accordance with the GMWPSAP.

Results for 1,4-dioxane from the original groundwater samples collected from monitor wells MW-30A and MW-30B and the duplicate sample collected from monitor well MW-30B were not analyzed during the second quarter 2021 monitoring event due to ATL incorrectly analyzing the samples for different analyses. Monitor wells MW-30A and MW-30B are sampled quarterly and will be sampled during the next quarterly monitoring event scheduled in August 2021. There were no other deviations from the GMWPSAP during second quarter 2021.

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples collected in May 2021 consisted of trip blanks, field duplicates, equipment rinsate blanks, and laboratory split samples. Trip blanks were provided by ATL. Field duplicate samples were collected for analysis of VOCs and 1,4-dioxane from monitor wells MW-30B, MW-33, and MW-41 in May 2021 (Table 3). Split samples were collected for analysis of VOCs and 1,4-dioxane from monitor wells MW-30B, MW-33, and MW-41 in May 2021 (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-DCE between the original and the split groundwater samples collected from MW-30B were outside of acceptable limits, therefore the data was qualified as estimated. All other results for groundwater samples collected from monitor wells MW-30B, MW-33, and MW-41 are within quality control criteria. The following table summarizes the principal Site compounds, 1,1-dichloroethylene (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
MW-30B 05/26/2021	1,1-DCE	31	23	30	18	53	E
	TCE	97	84	14	100	3	
	1,4-dioxane	--	--	NA	1.2	NA	
MW-33 05/27/2021	1,1-DCE	5.8	5.9	2	3.8	42	
	TCE	0.67	0.59	13	0.54	21	
	1,4-dioxane	<0.50	<0.50	NA	<0.50	NA	
MW-41 05/25/2021	1,1-DCE	1.0	0.92	8	<0.50	NA	
	TCE	<0.50	<0.50	NA	<0.50	NA	
	1,4-dioxane	<2.0	<2.0	NA	<0.50	NA	

ug/l = micrograms per liter

NA = not applicable

-- = not analyzed

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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

There were no detections of 1,4-dioxane or VOCs in the trip blanks and/or laboratory method blanks analyzed with groundwater samples collected during the May 2021 groundwater monitoring event (Table 3; Appendix B). Additionally, there were no detections of 1,4-dioxane or VOCs in the equipment rinsate blanks analyzed with groundwater samples collected during the May 2021 groundwater monitoring event.

The data quality assessment also included review of laboratory QA/QC results. Laboratory QA/QC results are within acceptable criteria, with the exception of the following:

- In ATL laboratory report 2101184, the lab control sample and lab control sample duplicate recoveries for 1,4-dioxane analyzed in QC batch B1E0464 were 1810 percent and 1880 percent, respectively, which significantly exceeded the acceptance limits and may result in positive bias for 1,4-dioxane concentrations. Two samples analyzed for 1,4-dioxane in this QC batch, MW-31 and MW-42, had results that were an order of magnitude higher than their respective historical maximum concentration, suggesting the positive bias results from the lab control samples may have caused positive bias results in the groundwater samples. As a result of the lab control sample and lab control sample duplicate recovery exceedances, 1,4-dioxane results from monitor wells MW-31 and MW-42 have been project qualified as unusable.

GROUNDWATER EXTRACTION AND TREATMENT PILOT STUDY

This section summarizes the pilot GETS operation within the three-month period of monitoring conducted March to May 2021. 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.

Initial startup of the pilot GETS took place in July 2008. From July 2008 through November 2009, the pilot GETS was operated with extraction wells EW-01 and MW-21 operating at approximately 10 gpm each. Pilot GETS expansion took place between November 2009 and March 2010 in order to incorporate extraction well EW-02 into the extraction well network. The system maximum flowrate was also increased from 20 gpm to 50 gpm to utilize the maximum local sewer capacity. Beginning in March 2010, the pilot GETS was operated at 50 gpm, entirely from extraction well EW-02. In December 2011, a synthetic media pilot test was started. The purpose of the synthetic media pilot test was to evaluate the efficacy of treating water collected from extraction well MW-21 (a relatively high-concentration extraction well) using a synthetic media for contaminant removal. In order to conduct the synthetic media pilot test, extraction wells EW-02 and MW-21 were operated at approximately 40 gpm and 10 gpm, respectively. The synthetic media pilot test was completed in March 2012, and operation of the pilot GETS was restored to 50 gpm entirely from extraction well EW-02. A second phase of pilot GETS expansion took place between March 2014 and August 2014 in order to incorporate extraction well MW-29 into the extraction well network as well as replacing an advanced oxidation unit that used ozone and hydrogen peroxide with a

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UV Ox system. Extraction wells EW-01 and MW-21 are on standby for the current phase of pilot testing, but are planned to be used as part of the full scale pump-and-treat system.

During the second quarter of 2021, the pilot GETS was operational approximately 99 percent of the available runtime and approximately 5.0 million gallons of groundwater were treated and discharged to the sanitary sewer (Table 4). The average operational monthly discharge flowrate to the sanitary sewer from March to May 2021 was approximately 37.2 gpm. Since startup of the pilot GETS, approximately 217 million gallons of groundwater have been treated at an average operational flowrate of 41 gpm through the end of May 2021 (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 second quarter of 2021. The samples collected from the effluent of the UV Ox treatment unit (Post-UV-Ox) were analyzed for VOCs and 1,4-dioxane, and resulted in non-detect values for 1,4-dioxane, and detections of the VOC trichlorofluoromethane of 1.0 microgram per liter (ug/L) and 1.0 ug/L on April 1, 2021 and April 15, 2021, respectively. Trichlorofluoromethane was also detected in the samples collected from the carbon breakthrough and carbon effluent on April 1, 2021 at concentrations of 1.0 ug/L and 1.0 ug/L, respectively. The VOC 1,1-dichloroethene was detected in samples collected from the carbon breakthrough on March 25, 2021 and April 1, 2021 at concentrations of 3.7 ug/L and 2.2 ug/L, respectively, and was detected in samples collected from the carbon effluent on March 25, 2021 and April 1, 2021 at concentrations of 3.3 ug/L and 2.3 ug/L, respectively. Samples collected from the carbon breakthrough and carbon effluent remained non-detect for 1,4-dioxane throughout the second quarter of 2021. (Table 6).

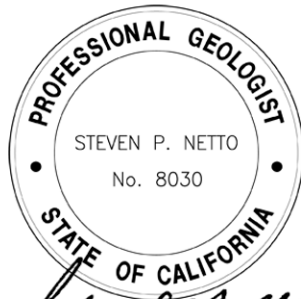
The pilot GETS continues to remove VOCs and 1,4-dioxane from extracted groundwater. During the second quarter of 2021, the pilot GETS removed approximately 2.8 pounds of VOCs and 1.5 pounds of 1,4-dioxane from extracted groundwater. Since startup of the pilot GETS in July 2008, approximately 187 pounds of VOCs and 50 pounds of 1,4-dioxane have been removed from groundwater through May 2021 (Figure 7). Operation of the pilot GETS continues to be optimized to maximize the treatment of 1,4-dioxane and VOCs in extracted groundwater.

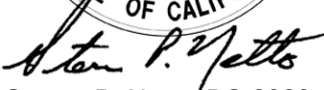
If you have any questions or require additional information, please contact us at 858-455-6500.

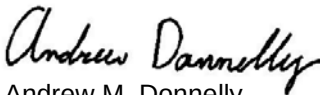
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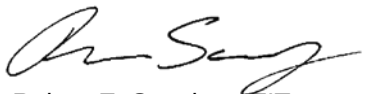
Sincerely,

HARGIS + ASSOCIATES, INC.




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


Andrew M. Donnelly
Hydrogeologist


Ruben E. Sanchez, EIT
Engineer

SPN/AMD/RES/ibj

Enclosures

Tables

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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
 Mr. Eric Silvers, Regency Centers

2 copies w-CDs
Ms. Delaney Cosgrove, 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
Mr. Aladdin Shaikh, City of Fullerton
Ms. Maile Gee, California RWQCB, Santa Ana Region
Mr. Nabil Henein, City of Buena Park
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Mr. Mike McGee, City of Buena Park
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Ms. Linda Opperman, Target
Ms. Nicole Subia, Target Properties
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Ms. Christine Ehrhardt, Greystar
Ms. Lisa Turturro, Haley & Aldrich, Inc.
Ms. Carol Owens, Greystar
Mr. Paul Rodolf, Hydraflow
Mr. Robinson Sioson, Hydraflow

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REFERENCES

- California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), 2003. Letter to P. Brewer, Raytheon Systems Company, from A. Plaza, DTSC, re: Review of Additional Groundwater Assessment Workplan and Groundwater Monitoring Workplan and Sampling and Analysis Plan. May 20, 2003.
- _____, 2011. Email from W. Jeffers, DTSC, re: Conditional Approval of Addendum No. 1 to the Ground Water Monitoring Work Plan, Raytheon Fullerton, dated June 7, 2011.
- _____, 2013. Email from W. Jeffers, DTSC, re: Groundwater Extraction and Treatment System Pilot Testing Corrective Measures Study Workplan, Addendum #6, dated 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 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 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.

TABLES

TABLE 1
GROUNDWATER MONITORING PROGRAM

WELL IDENTIFIER	HYDROGEOLOGIC ZONE	SAMPLED MAY 2021	SAMPLING FREQUENCY			
			QUARTERLY FEB, MAY, AUG, NOV	SEMIANNUAL FEBRUARY, AUGUST	ANNUAL FEBRUARY	BIENNIAL 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:

Groundwater Monitoring Program 2014/2015 Letter (Hargis + Associates, Inc., 2015)

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

VOCs = volatile organic compounds

TABLE 2
GROUNDWATER LEVELS
SECOND QUARTER 2021

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	05/24/21	184.70	154.84	29.86	
MW-08	05/24/21	155.91	131.28	24.63	
MW-09	05/24/21	180.10	153.02	27.08	
MW-13	05/24/21	141.84	122.80	19.04	
MW-15	05/24/21	144.95	126.90	18.05	
MW-16	05/24/21	142.40	124.01	18.39	
MW-17	05/24/21	142.70	122.67	20.03	
MW-18	05/24/21	142.32	123.12	19.20	
MW-19	05/24/21	142.06	122.82	19.24	
MW-20	05/24/21	184.19	149.79	34.40	
MW-21	05/24/21	141.18	116.05	25.13	
MW-22	05/24/21	138.65	119.42	19.23	
MW-23	05/24/21	137.33	119.55	17.78	
MW-24	05/24/21	142.83	119.12	23.71	
MW-25	05/24/21	142.64	116.98	25.66	
MW-26A	05/24/21	137.04	117.07	19.97	
MW-26B	05/24/21	137.05	119.05	18.00	
MW-26C	05/24/21	137.22	120.19	17.03	
MW-27	05/24/21	137.16	119.80	17.36	
MW-28	05/24/21	140.77	123.91	16.86	
MW-29	03/01/21	139.81	182.96	-43.15	Pilot GETS
MW-29	03/25/21	139.81	182.41	-42.60	Pilot GETS
MW-29	04/01/21	139.81	184.43	-44.62	Pilot GETS
MW-29	04/15/21	139.81	182.87	-43.06	Pilot GETS
MW-29	05/06/21	139.81	181.85	-42.04	Pilot GETS
MW-29	05/20/21	139.81	181.56	-41.75	Pilot GETS
MW-29	05/24/21	139.81	124.09	15.72	
MW-30A	05/24/21	129.44	113.55	15.89	
MW-30B	05/24/21	129.39	111.12	18.27	
MW-31	05/24/21	119.60	103.05	16.55	
MW-32A	05/24/21	92.88	78.39	14.49	
MW-32B	05/24/21	92.89	75.29	17.60	

**TABLE 2
GROUNDWATER LEVELS
SECOND QUARTER 2021**

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 (continued)</u>					
MW-32C	05/24/21	92.88	69.58	23.30	
MW-33	05/24/21	83.19	69.50	13.69	
MW-34A	05/24/21	153.25	140.14	13.11	
MW-34B	05/24/21	153.11	137.66	15.45	
MW-34C	05/24/21	153.29	137.06	16.23	
MW-35A	05/24/21	93.57	79.75	13.82	
MW-35B	05/24/21	93.56	80.48	13.08	
MW-35C	05/24/21	93.55	79.16	14.39	
MW-36	05/24/21	86.65	73.49	13.16	
MW-37	05/24/21	155.60	134.70	20.90	
MW-38	05/24/21	154.90	142.45	12.45	
MW-39	05/24/21	84.25	71.84	12.41	
MW-40	05/24/21	123.40	105.15	18.25	
MW-41	05/24/21	155.60	140.25	15.35	
MW-42	05/24/21	82.80	70.65	12.15	
MW-43	05/24/21	76.64	64.87	11.77	
EW-01	05/24/21	141.07	122.48	18.59	
EW-02	03/01/21	132.97	121.11	11.86	Pilot GETS
EW-02	03/25/21	132.97	120.04	12.93	Pilot GETS
EW-02	04/01/21	132.97	119.97	13.00	Pilot GETS
EW-02	04/15/21	132.97	120.08	12.89	Pilot GETS
EW-02	05/20/21	132.97	120.28	12.69	Pilot GETS
EW-02	05/24/21	132.97	120.26	12.71	Pilot GETS
<u>Perched Zone Water Levels</u>					
P-07	05/24/21	142.31	111.47	30.84	
P-09	05/24/21	183.86	120.77	63.09	

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
SECOND QUARTER 2021

.....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	05/25/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	27	1.9	< 0.50	< 0.50	< 0.50	41	< 0.50	< 0.50	2.1
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-21	05/26/21	ORG	< 0.50	< 0.50	1.3	18	3.7	1,800	1.4	3.7	< 0.50	9.9	18	< 0.50	< 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	05/25/21	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 - 75
MW-28	05/25/21	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-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	03/01/21	ORG	< 0.50	< 0.50	< 0.50	1.2	< 0.50	170	< 0.50	0.69	< 0.50	0.61	1.8	0.90	< 0.50	97
MW-29	03/25/21	ORG	< 0.50	< 0.50	< 0.50	1.9	< 0.50	200	< 0.50	0.59	< 0.50	0.68	2.0	0.96	< 0.50	120
MW-29	04/01/21	ORG	< 0.50	< 0.50	< 0.50	1.4	< 0.50	190	< 0.50	0.65	< 0.50	0.61	1.9	1.7	< 0.50	120
MW-29	04/15/21	ORG	< 0.50	< 0.50	< 0.50	1.6	< 0.50	180	< 0.50	0.68	< 0.50	0.62	2.1	1.6	< 0.50	110
MW-29	05/06/21	ORG	< 0.50	< 0.50	< 0.50	1.8	< 0.50	260	< 0.50	0.62	< 0.50	0.57	2.1	< 0.50	< 0.50	110
MW-29	05/20/21	ORG	< 0.50	< 0.50	< 0.50	1.6	< 0.50	240	< 0.50	0.55	< 0.50	0.57	1.8	< 0.50	< 0.50	110
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 E - 301
MW-30A	05/26/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.64	< 0.50	< 0.50	NA
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	05/26/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	31 E	4.8	< 0.50	< 0.50	< 0.50	97	< 0.50	< 0.50	NA
MW-3000B	05/26/21	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	23 E	4.6	< 0.50	< 0.50	< 0.50	84	< 0.50	< 0.50	NA
MW-30B ⁽¹⁾	05/26/21	SPT	< 0.50	< 0.50	0.37 J	< 0.50	< 0.50	18 E	4.5	< 0.50	< 0.50	< 0.50	100	< 0.50	< 0.50	1.2
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 - 28	< 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
MW-31	05/25/21	ORG	< 0.50	< 0.50	< 0.50	1.7	< 0.50	290	0.59	< 0.50	< 0.50	< 0.50	11	< 0.50	< 0.50	180 U
MW-31 Historical Range***			< 0.50	< 0.50	< 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 - 16
MW-32B	05/26/21	ORG	< 0.50	< 0.50	< 0.50	0.61	< 0.50	110	2.1	< 0.50	< 0.50	< 0.50	20	< 0.50	< 0.50	2.7
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

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
SECOND QUARTER 2021

.....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-33	05/27/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.8	< 0.50	< 0.50	< 0.50	< 0.50	0.67	< 0.50	1.4	< 0.50
MW-3300	05/27/21	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.9	< 0.50	< 0.50	< 0.50	< 0.50	0.59	< 0.50	1.2	< 0.50
MW-33	05/27/21	SPT	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.8	< 0.50	< 0.50	< 0.50	< 0.50	0.54	< 0.50	2.0	< 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-34B	05/26/21	ORG	< 0.50	< 0.50	< 0.50	0.80	< 0.50	93	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	23
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-35C	05/25/21	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	05/26/21	ORG	< 0.50	< 0.50	< 0.50	0.72	< 0.50	110	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.9
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	05/25/21	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-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	05/26/21	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	< 0.50
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
MW-41	05/25/21	ORG	< 0.50	< 0.50	0.60	< 0.50	< 0.50	1.0	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
MW-4100	05/25/21	FD	< 0.50	< 0.50	0.59	< 0.50	< 0.50	0.92	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0
MW-41	05/25/21	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	< 0.50
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	05/25/21	ORG	< 0.50	< 0.50	< 0.50	0.62	< 0.50	53	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	28 U
Historical High/Low						High		High								
MW-42 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 0.46 J	< 0.50	0.41 J - 36	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 1.9
MW-43	05/27/21	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	< 0.50
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	05/26/21	ORG	< 0.50	< 0.50	< 0.50	0.53	< 0.50	56	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	34
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	03/01/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	13	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.2
EW-02	03/25/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	15	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.4
EW-02	04/01/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	14	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.7
EW-02	04/15/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	15	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.2
EW-02	05/06/21	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	7.1
EW-02	05/20/21	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	19	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	9.5
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

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
SECOND QUARTER 2021

.....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**)
Quality Assurance/Quality Control Samples																
TB-030121	03/01/21	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-032521	03/25/21	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-040121	04/01/21	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-041521	04/15/21	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-050621	05/06/21	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-052021	05/20/21	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-052521	05/25/21	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-05252021B	05/25/21	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-05252021	05/25/21	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-05262021	05/26/21	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-05272021	05/27/21	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-05272021B	05/27/21	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

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

⁽¹⁾ 1,1,2-Trichloro-1,2,2-Trifluoroethane was detected at a concentration of 1.2 J ug/L in the split sample for monitor well MW-30B collected on 05/26/21

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
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
U = Data qualified as Unusable in accordance with quality control criteria.

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%
December 2020	1,907,007	37.7	39.2	811	843	96%
January 2021	1,532,049	38.0	39.5	647	671	96%
February 2021	1,430,519	39.8	39.8	599	599	100%
Q1 2021	4,869,575	38.4	39.5	2,057	2,114	97%
March 2021	1,744,304	39.1	39.8	731	744	98%
April 2021	1,832,074	36.2	37.0	825	842	98%
May 2021	1,395,185	34.7	34.7	670	670	100%
Q2 2021	4,971,563	36.7	37.2	2,226	2,256	99%
SINCE INCEPTION	216,989,331	31.9	40.5	89,225	113,233	79%

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

gpm = gallons per minute

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

CEFF = Carbon effluent

TABLE 5
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLING SCHEDULE

COMPOUND(S) / CONSITITUENT				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)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</

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

HNO₃ = Nitric 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
SECOND QUARTER 2021

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)	03/01/21	ug/L	--	0.61	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	03/25/21	ug/L	--	0.68	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	04/01/21	ug/L	--	0.61	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	04/15/21	ug/L	--	0.62	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/06/21	ug/L	--	0.57	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/20/21	ug/L	--	0.57	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
1,1-Dichloroethane (5 ug/L MCL)	05/26/21	ug/L	9.9	--	<0.50	--	--	--	--	--	--
	03/01/21	ug/L	--	1.2	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	03/25/21	ug/L	--	1.9	--	<0.50	0.55	--	<0.50	<0.50	<0.50
	04/01/21	ug/L	--	1.4	--	<0.50	0.52	--	<0.50	<0.50	<0.50
	04/15/21	ug/L	--	1.6	--	<0.50	0.50	--	<0.50	<0.50	<0.50
	05/06/21	ug/L	--	1.8	--	<0.50	0.59	--	<0.50	<0.50	<0.50
1,1-Dichloroethene (6 ug/L MCL)	05/20/21	ug/L	--	1.6	--	<0.50	0.59	--	<0.50	<0.50	<0.50
	05/26/21	ug/L	18	--	0.53	--	--	--	--	--	--
	03/01/21	ug/L	--	170	--	13	47	--	<0.50	<0.50	<0.50
	03/25/21	ug/L	--	200	--	15	57	--	<0.50	3.7	3.3
	04/01/21	ug/L	--	190	--	14	53	--	<0.50	2.2	2.3
	04/15/21	ug/L	--	180	--	15	55	--	<0.50	<0.50	<0.50
1,2-Dichloroethane (0.5 ug/L MCL)	05/06/21	ug/L	--	260	--	20	79	--	<0.50	<0.50	<0.50
	05/20/21	ug/L	--	240	--	19	79	--	<0.50	<0.50	<0.50
	05/26/21	ug/L	1800	--	56	--	--	--	--	--	--
	03/01/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	03/25/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	04/01/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene (6 ug/L MCL)	04/15/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/06/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/20/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/26/21	ug/L	3.7	--	<0.50	--	--	--	--	--	--
	03/01/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	03/25/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
Tetrachloroethene (5 ug/L MCL)	04/01/21	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	04/15/21	ug/L	--	0.65	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/06/21	ug/L	--	0.68	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/20/21	ug/L	--	0.62	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/26/21	ug/L	--	0.55	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/26/21	ug/L	3.7	--	<0.50	--	--	--	--	--	--
Trichloroethene (5 ug/L MCL)	03/01/21	ug/L	--	1.8	--	<0.50	0.50	--	<0.50	<0.50	<0.50
	03/25/21	ug/L	--	2.0	--	<0.50	0.63	--	<0.50	<0.50	<0.50
	04/01/21	ug/L	--	1.9	--	<0.50	0.63	--	<0.50	<0.50	<0.50
	04/15/21	ug/L	--	2.1	--	<0.50	0.64	--	<0.50	<0.50	<0.50
	05/06/21	ug/L	--	2.1	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	05/20/21	ug/L	--	1.8	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
1,4-Dioxane (1 ug/L California Notification Level)	05/26/21	ug/L	18	--	<0.50	--	--	--	--	--	--
	03/01/21	ug/L	--	97	--	6.2	29	--	<0.20	<0.20	<0.20
	03/25/21	ug/L	--	120	--	6.4	33	--	<0.20	<0.20	<0.20
	04/01/21	ug/L	--	120	--	6.7	32	--	<0.20	<0.20	<0.20
	04/15/21	ug/L	--	110	--	4.2	31	--	<0.20	<0.20	<0.20
	05/06/21	ug/L	--	110	--	7.1	35	--	<0.20	<0.20	<0.20
Bromide	05/20/21	ug/L	--	110	--	9.5	37	--	<0.20	<0.20	<0.20
	05/26/21	ug/L	590	--	34	--	--	--	--	--	--
	03/01/21	mg/L	--	<1.0	--	<0.50	<0.50	--	--	--	--
Bromate (10 ug/L MCL)	04/01/21	mg/L	--	<0.05	--	<0.05	<0.05	--	--	--	--
	05/06/21	mg/L	--	0.58	--	0.23	0.37	--	--	--	--
	03/01/21	ug/L	--	--	--	--	<0.5	--	<0.5	--	--
Total Non-Filterable Residue	04/01/21	ug/L	--	--	--	--	<0.5	--	<0.5	--	--
	03/01/21	ug/L	--	--	--	--	--	<2.0	--	--	--
	04/01/21	ug/L	--	--	--	--	--	<2.0	--	--	--
Total Filterable Residue (500 mg/L MCL)	05/06/21	ug/L	--	--	--	--	--	<0.84	--	--	--
	03/01/21	mg/L	--	830	--	660	740	--	710	--	690

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

TABLE 6
SELECT COMPOUNDS MONITORED IN
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLES
SECOND QUARTER 2021

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

FOOTNOTES:

^(a) = inactive extraction wells; extraction wells MW-21 and EW-01 operated from July 2008 to November 2009

MCL = Maximum Contaminant Level or Drinking Water Action Level, if applicable

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

PF = Post Particulate Filter

POX = Post Hypox Oxidation

CBT = Carbon Breakthrough

CEFF = Carbon Effluent

FIGURES

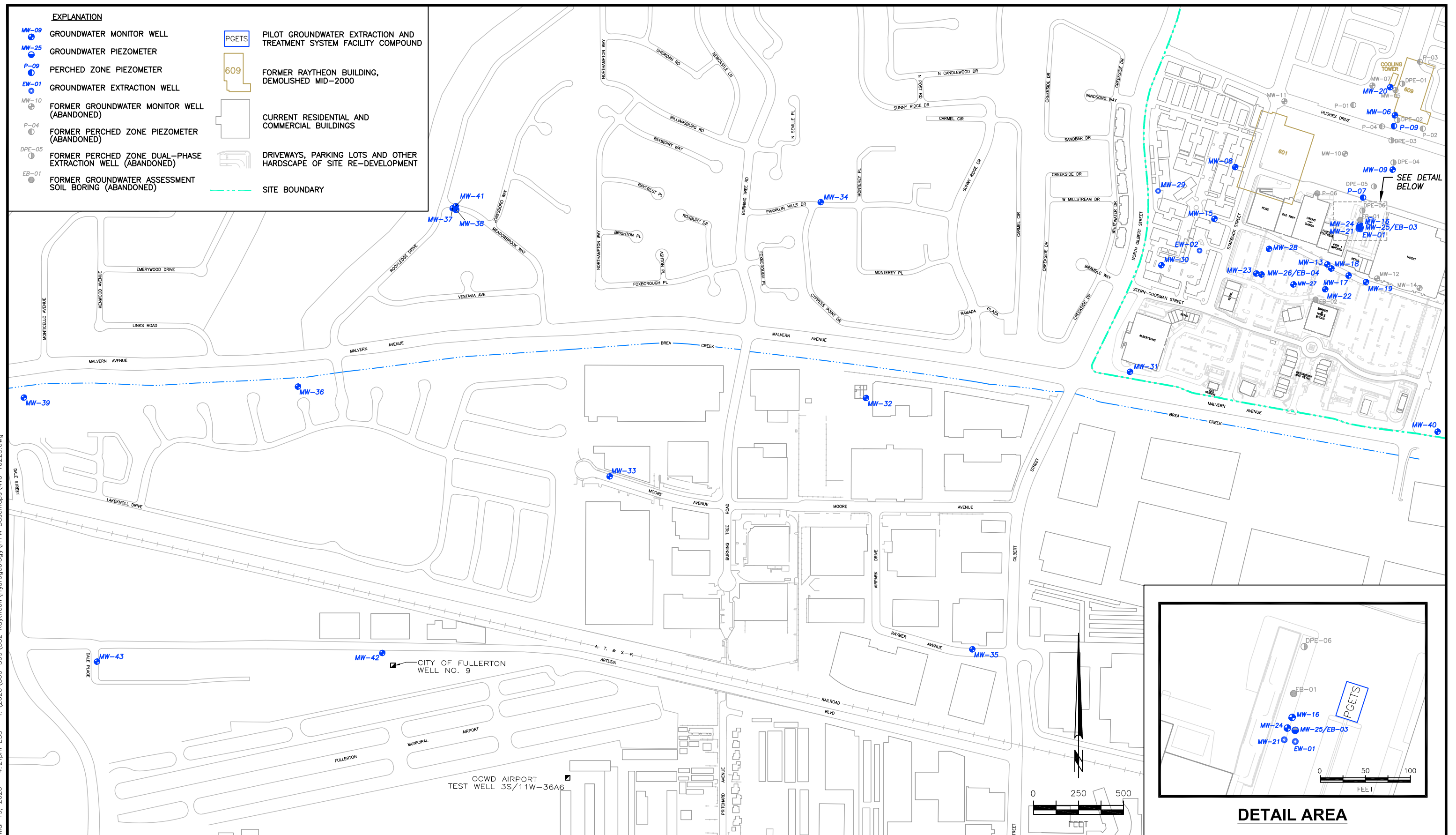
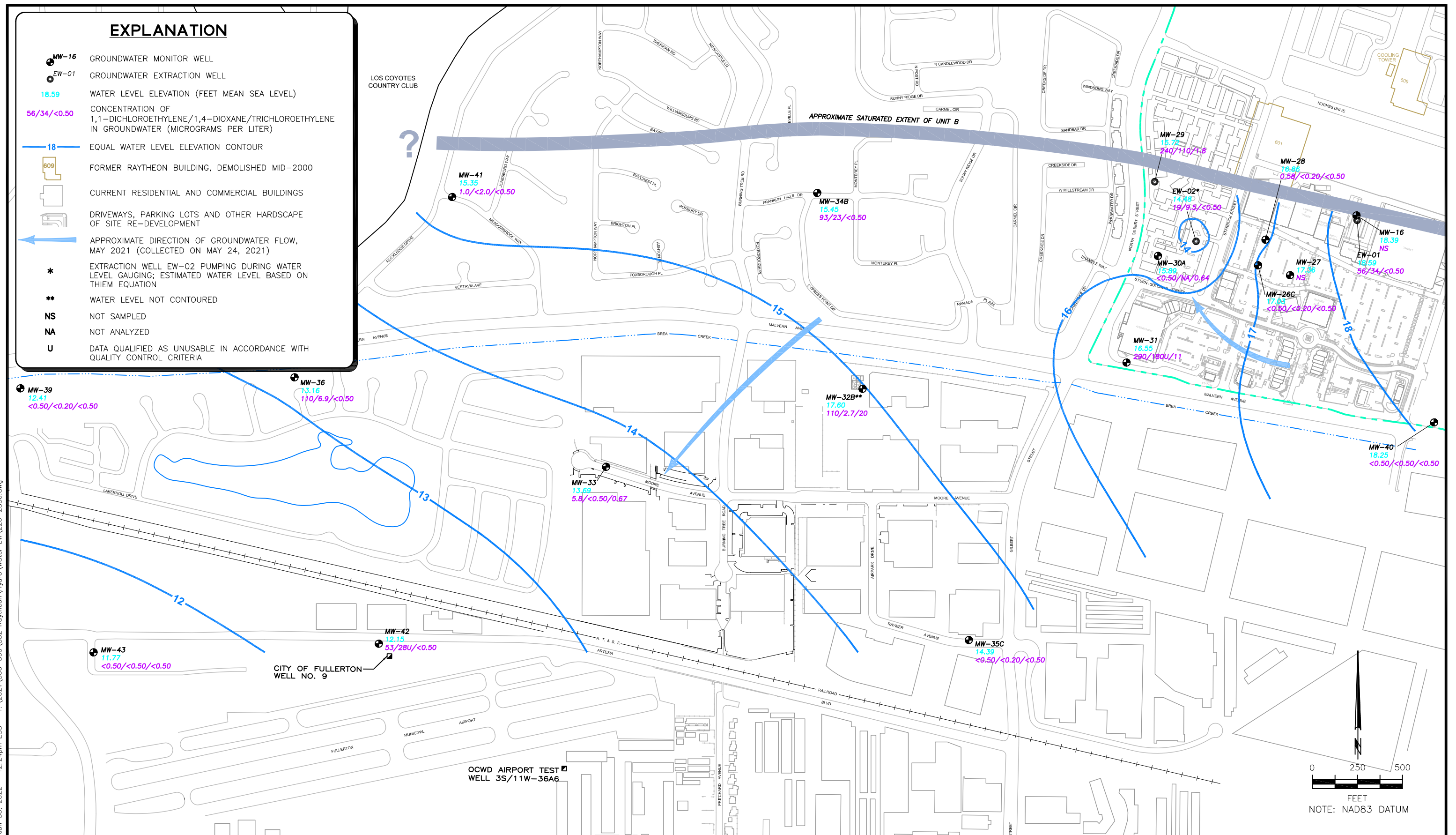


FIGURE 2.
WELL AND PIEZOMETER LOCATIONS

Jun 30, 2022 - 12:24pm ESS - T: \2021\500-599\532 Raytheon\Hydro\Water Lvl\220-2556.dwg



HARGIS+ASSOCIATES, INC.
Hydrogeology/Engineering

FIGURE 3.
WATER LEVEL AND WATER QUALITY UNIT B
MAY 2021

06/22 RPT NO. 532.31 220-2556 A

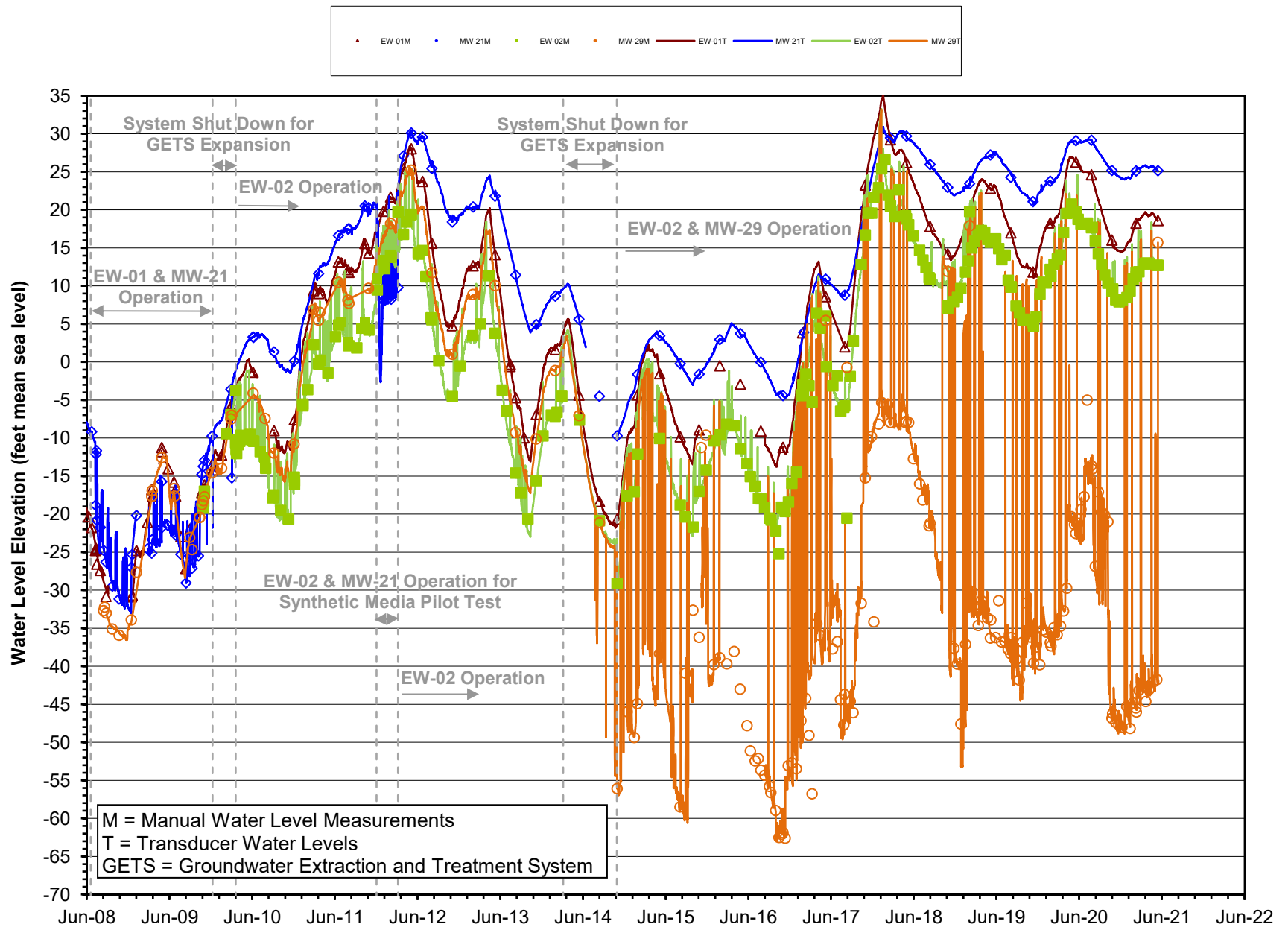


FIGURE 4.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATION
AND EXTRACTION WELL WATER LEVELS

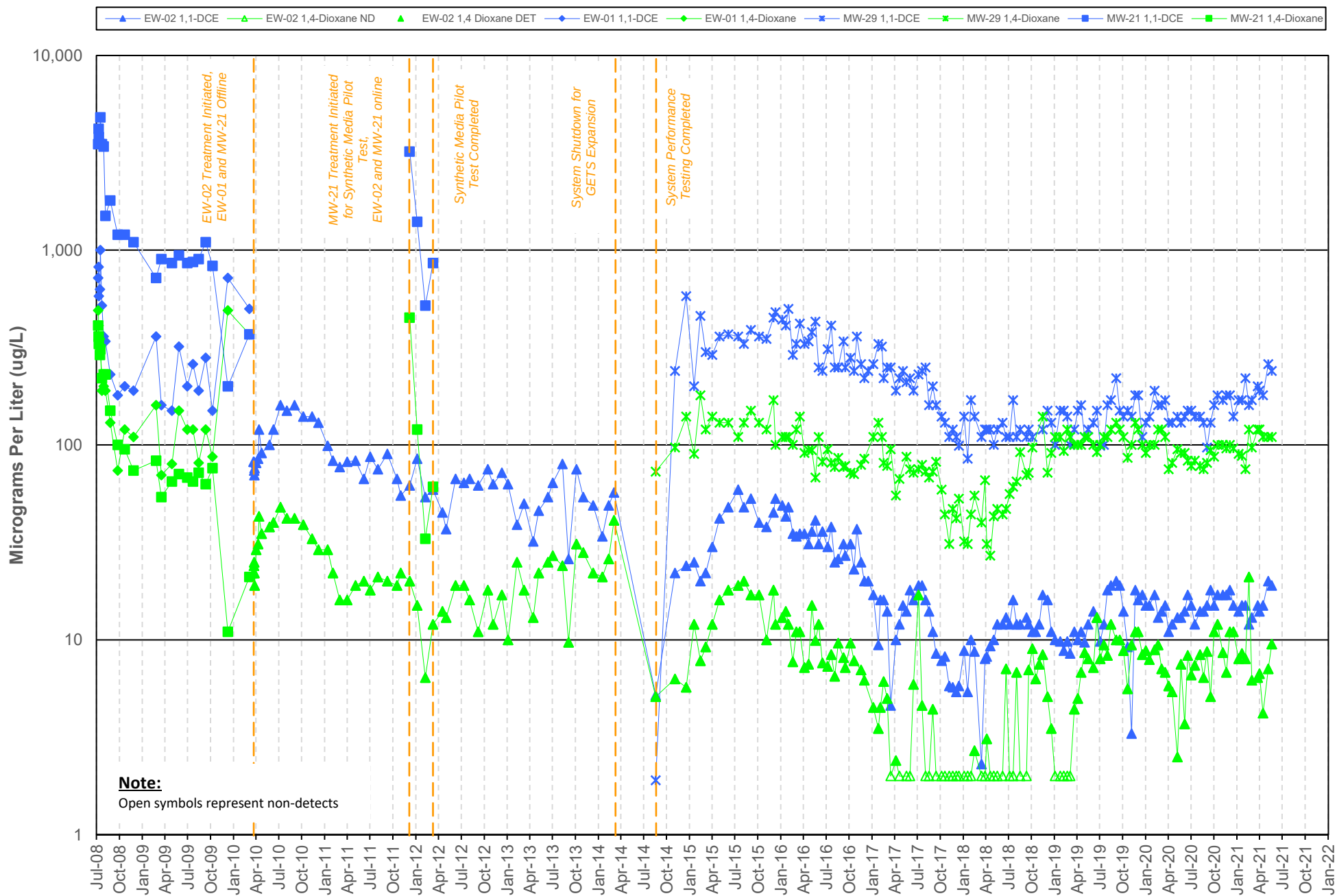


FIGURE 5.
1,1-DICHLOROETHYLENE AND 1,4-DIOXANE CONCENTRATIONS IN EXTRACTION WELLS

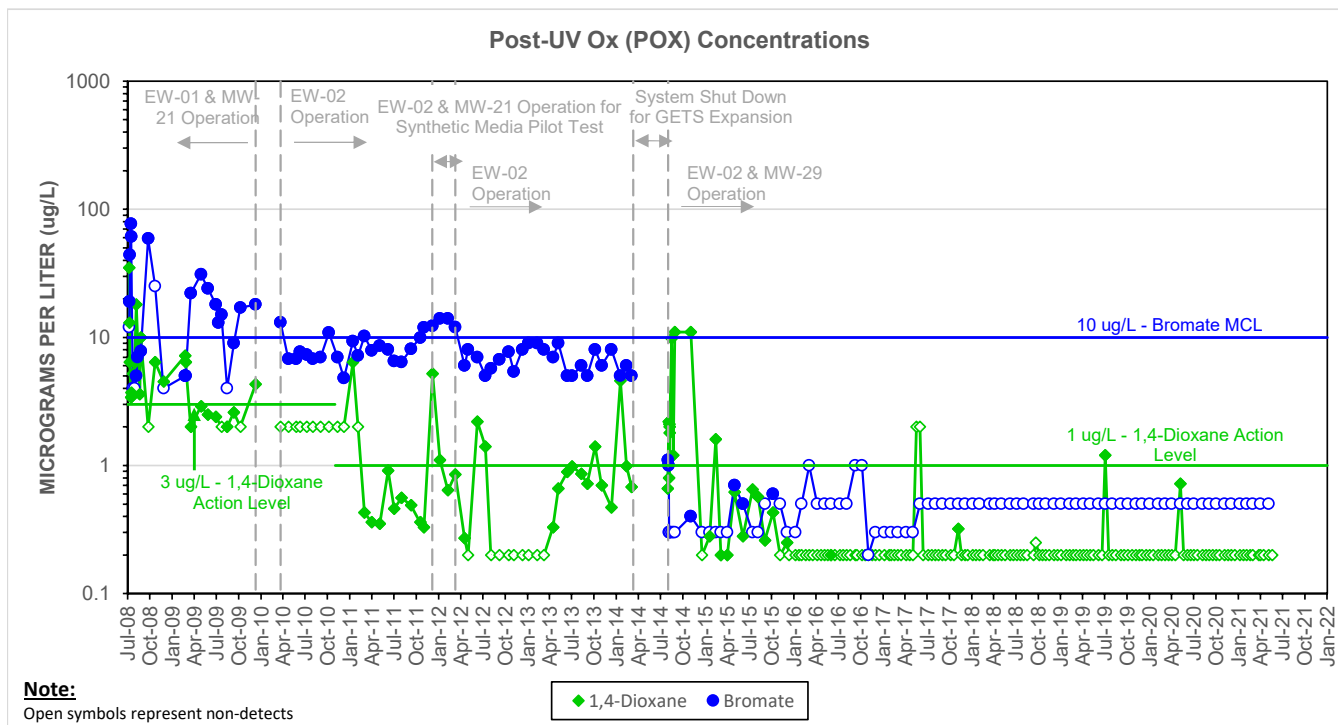
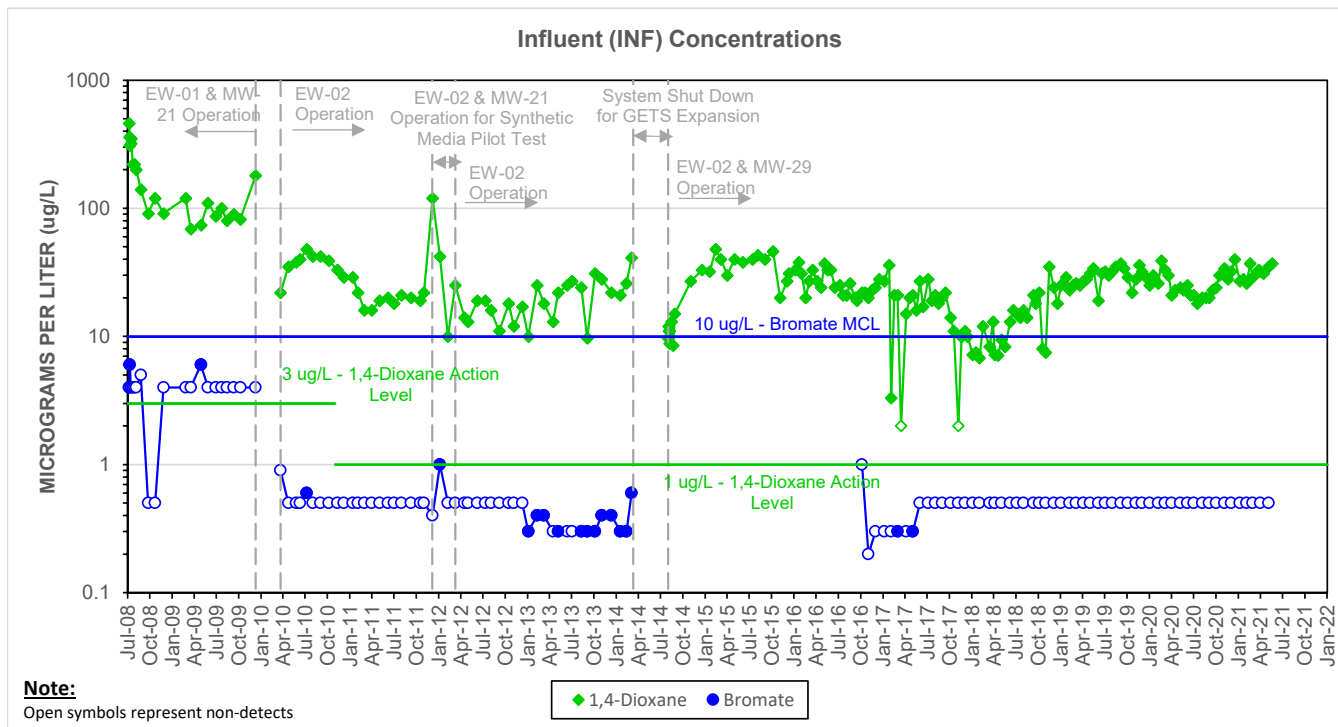


FIGURE 6.
1,4-DIOXANE AND BROMATE IN INFLUENT AND POST-OXIDATION SAMPLES

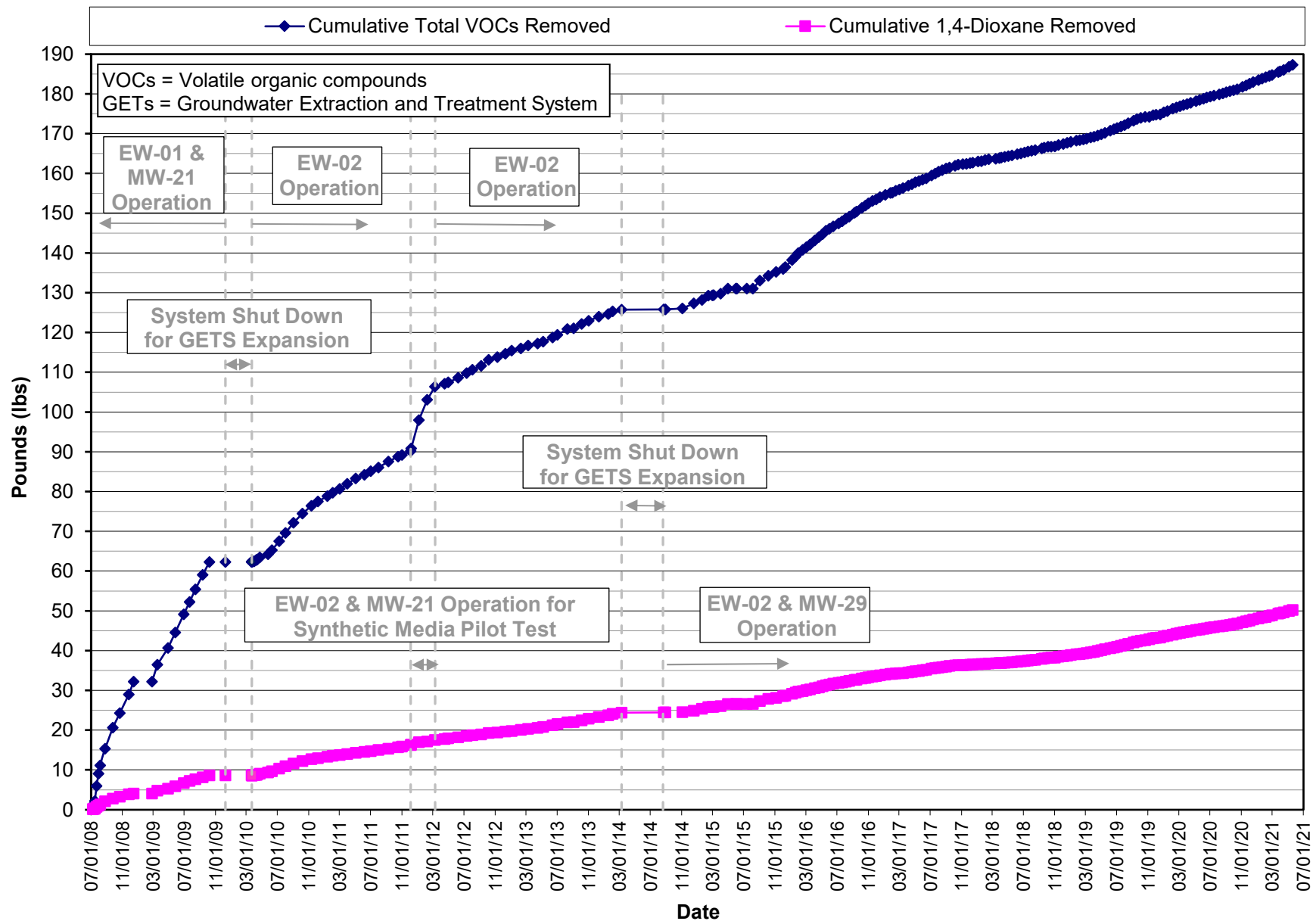


FIGURE 7.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM MASS REMOVAL

APPENDIX A
GROUNDWATER SAMPLING FIELD FORMS

MAY 2021

**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: 5/24/21

Location: FULLERTON, CA

Presented by:

A. GENERAL INTRODUCTION

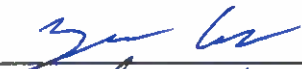
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (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
Ryne Adams		HARGIS + ASSOC., INC	5/24/21
Amanda Jansen		HARGIS + ASSOC., INC	5/24/21
Alex Jang		HARGIS + ASSOC., INC	5/24/21
DJ Seaver		H-1-A	5/24/21

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 5/25/2021

Location: FULLERTON, CA

Presented by: DJ Seabee

A. GENERAL INTRODUCTION

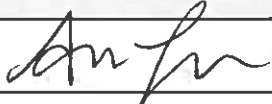
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (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
Amanda Janzon		HARGIS + ASSOC., INC	5/25/21
Ryne Adams		HARGIS + ASSOC., INC	5/25/21
DJ Seabee		HARGIS + ASSOC., INC	5/25/21

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 5/26/2024

Location: FULLERTON, CA

Presented by: JTS

A. GENERAL INTRODUCTION

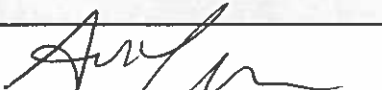
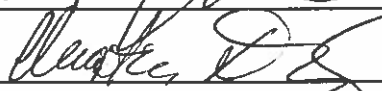
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (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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C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Amanda Janson		HARGIS + ASSOC., INC	5/26/2024
Christian Diaz		HARGIS + ASSOC., INC	↓
Ryne Adams		HARGIS + ASSOC., INC	

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: May 2021

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)	FEB 2021 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
P-07	~~05/24/21~~	~~10:20~~	~~T26~~	~~111.45~~	~~142.31~~		111.64			
P-09	05/ /21				183.86		120.81			
MW-06	05/ /21				184.70		156.08			
MW-08	05/24/21	1241	TOL	131.28	155.91	24.63	131.58	-0.22		DJS/AJT
MW-09	05/ /21				180.10		154.51			
MW-13	05/ /21				141.84		119.38			
MW-15	05/24/21	1323	TOL	126.90	144.95	18.05	128.04	+1.14		DJS/AJT
MW-16	05/ /21				142.40		124.48			
MW-17	05/ /21				142.70		119.50			
MW-18	05/ /21				142.32		119.90			
MW-19	05/ /21				142.06		119.63			
MW-20	05/ /21				184.19		151.68			
MW-21	05/ /21				141.18		116.07		Totalizer: Pumping?	
MW-22	05/ /21				138.65		116.02			
MW-23	05/ /21				137.33		115.53			
MW-24	05/ /21				142.83		117.11			
MW-25	05/ /21				142.64		119.38			
MW-26A	05/ /21				137.04		117.66			
MW-26B	05/ /21				137.05		119.91			
MW-26C	05/ /21				137.22		119.80			

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: May 2021

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)	FEB 2021 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-27	05/ /21				137.16		119.34			
MW-28	05/ /21				140.77		123.83			
MW-29	05/ 24/21	1300	TOST	124.09	139.81	15.72	185.30p		Totalizer: 146 7481 Pumping? N.	DJS/AJT
MW-30A	05/ 24/21	1220	TOST	113.55	129.44	15.89	112.72	-0.83		↓
MW-30B	05/ 24/21	1222	TOST	111.12	129.39	18.27	109.51	-1.61		
MW-31	05/ 24/21	1055	TOST	103.05	119.60	16.55	100.98	-2.07		
MW-32A	05/ 24/21	0821	TOST	78.39	92.88	14.49	75.60	-2.79		
MW-32B	05/ 24/21	0820	TOST	75.29	92.89	17.50	75.29	0		
MW-32C	05/ 24/21	0820	TOST	69.58	92.88	23.30	69.77	+0.19		↓
MW-33	05/ /21	1021	TOST	69.50	83.19	13.69	66.31	-3.19		
MW-34A	05/ /21				153.25		134.31			
MW-34B	05/ /21				153.11		137.19			
MW-34C	05/ /21				153.29		135.33			
MW-35A	05/ 24/21	0949		79.79	93.57	13.82	64.05	-15.7		DJS/AJT
MW-35B	05/ 24/21	0951		80.48	93.56	13.08	73.29	-7.19		↓
MW-35C	05/ 24/21	0953		79.16	93.55	14.39	76.12	-3.04		
MW-36	05/ /21				86.65		71.04			
MW-37	05/ /21				155.60		135.60			
MW-38	05/ /21				154.90		139.27			
MW-39	05/ /21				84.25		68.50			

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: May 2021

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)	FEB 2021 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-40	05/ 24/21	1030	TOST	105.15	123.40	118.25	104.41	-0.74		PJS/AJT
MW-41	05/ 12/21				155.60		139.16			
MW-42	05/ 24/21	0923	TOST	70.65	82.80	12.15	67.17	-3.48		DJS/AJT
MW-43	05/ 24/21	0908	TOST	64.87	76.64	11.77	61.31	-3.56		↓
EW-01	05/ 12/21				141.07		122.81		SOUNDING TUBE TO 172.65 Totalizer: Pumping?	
EW-02	05/ 24/21	1336	~~TOST~~	120.26	132.97	12.71?	121.19	0.93	Totalizer: 6353 602 Pumping? y	DJS/AJT

 msl = Mean sea level
 ft = feet

HARGIS + ASSOCIATES, INC.

**MAY 2021 GROUNDWATER SAMPLE PLAN
TEAM 1**

QA/QC	Total VOC's µg/L	1,4-Dioxane µg/L	APROX. GALLONS	ESTIMATE D TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	MAY 2020 SAMPLING SCHEDULE	SAMPLE METHOD
	ND	ND	918	46	MW-35C ✓	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	0.5	ND	867	46	MW-39 ✓	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	ND	ND	934	43	MW-43	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	5.0	ND	933	51	MW-33	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	35	1.9	928	49	MW-42 ✓	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	81	10	980	76	MW-36 ✓	Deep; D	VOCs; 1,4-Dioxane	Ded.240V
	67	6.3	282	30	MW-31 ✓	Deep; B	VOCs; 1,4-Dioxane	Ded.240V

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 teams each morning.

**MAY 2021 GROUNDWATER SAMPLE PLAN
TEAM 2**

QA/QC	Total VOC's µg/L	1,4-Dioxane µg/L	APROX. GALLONS	ESTIMATE D TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	MAY 2020 SAMPLING SCHEDULE	SAMPLE METHOD
✓	~~1552~~	~~610~~	~~275~~	~~5~~	MW-21	Water Table; BC	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
✓	~~75~~	~~47~~	~~154~~	~~4~~	EW-01	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
	~~121~~	~~ND~~	~~124~~	~~23~~	MW-30B ²	Deep; BC	VOCs; 1,4-Dioxane	Ded. 240V
	~~98~~	~~2.5~~	~~66~~	~~22~~	MW-32B ³	Deep; B	VOCs; 1,4-Dioxane	Ded. Redi-Flo 2
	~~80~~	~~25~~	~~160~~	~~11~~	MW-34B ⁴	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded. 240V
	~~4~~	~~ND~~	~~243~~	~~26~~	MW-41 ⁴	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded. 240V
	~~1~~	~~ND~~	~~103~~	~~11~~	MW-28 ¹	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
✓	~~0.3~~	~~0.61~~	~~216~~	~~29~~	MW-40 ⁵	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
	~~ND~~	~~ND~~	~~65~~	~~11~~	MW-30A ¹	Deep; B	VOCs; 1,4-Dioxane	Ded. 240V
~~MS/RB~~	~~63~~	~~2.6~~	~~18~~	~~16~~	MW-08 ²	Water Table; BC	VOCs; 1,4-Dioxane	Redi-flo
~~MS/MSD~~	~~ND~~	~~ND~~	~~157~~	~~62~~	MW-26C ³	Deep; B	VOCs; 1,4-Dioxane	Redi-flo

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

GROUNDWATER SAMPLING INFORMATION

DATE: 5/25/21

TASK: 532.30

WELL ID: MW-28

Time <u>0832</u> Static DTW (ft below reference point) <u>123.90</u>	Casing Volume (CV) (gallons) <u>27</u> 3 CV (gallons) <u>81</u>	Weather Conditions	Initials: <u>DJS/AST</u>
Casing Total Depth (ft below reference point) <u>375</u>	Purging Device <u>ded Pump</u> Sampling Device <u>0-10 p.p.s.w.</u>	Time <u>0835</u> Temp. <u>-</u>	Begin Purge <u>0841</u> End Purge <u>0856</u>
<u>Pump</u> to <u>500</u> Water Column (feet) <u>45</u>	Pump: Depth (ft brp) <u>330</u> Type <u>Diaphragm</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>-</u>	Gallons Purged <u>104.4</u> CVs Purged <u>3.9</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow <u>-</u> Fast <u>✓</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>133.7</u> Time <u>0832</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)		
0841	123.90	0	0								Begin Purge
0844	132.80	13.5	0.5	21.8	7.12	976	216.6	3.0	6.4	-	Q ≈ 9.0
0848	133.5	27	1.0	21.6	7.15	976	226.5	2.9	6.4	-	
0849	133.6	40.5	1.5	21.6	7.18	942	226.2	2.34	3.54	-	
0851	133.7	54	2.0	21.6	7.20	929	226.0	2.09	3.21	-	
0852	133.7	67.5	2.5	21.6	7.23	927	225.4	1.95	2.64	-	
0853	133.7	81	3.0	21.6	7.24	927	225.3	1.91	1.67	-	
0856	NM	104.4	3.9								End Purge

SAMPLE COLLECTION SAMPLE TIME <u>0855</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				
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber				
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: 5/25/21

TASK: 532.30

WELL ID: MW-26c

Time 1010 Static DTW (ft below reference point) 120.27	Casing Volume (CV) (gallons) 185.147	Weather Conditions	Initials: DJS / AJT
Casing Total Depth (ft below reference point) 499	Purging Device Ground For Sampling Device ded. turing	Time 1010 Temp. -	Begin Purge 1039 End Purge 1032
Water Column (feet) 10.7	Pump: Depth (ft brp) ~200 Type MPI Voltage 115 HP 0.5	Skies -	Gallons Purged 159 CVs Purged 3.24
Casing Capacity (Diameter 7) (gallons per foot) 0.167	Monitor Well Recharge Rate: Slow Fast	Wind (mph) - From -	DTW (ft brp) 120.27 Time 1010

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	120.27	0	0								Begin Purge
1047	121.40	29	0.5	22.3	8.52	189.2	117.7	0.22	8.43	321	3 Q ≈ 36 PM
1055	121.45	50	1.0	22.3	8.63	432.9	44.1	0.07	0.68	321	
1104	121.40	75	1.5	22.3	9.75	819	-100.9	0.11	0.64	321	
1112	121.40	100	2.0	22.3	7.67	830	-136.5	0.10	0.68	321	
1120	121.40	125	2.5	22.3	7.60	830	-57.2	0.23	0.14	321	
1128	121.40	147	3.0	22.4	7.61	824	-163.5	0.12	0.68	321	
1132	Nm	159	3.24								End Purge

SAMPLE COLLECTION SAMPLE TIME 1130			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	9	40 ml VOA	MS/MSD collector		
8270 SIM 1,4 dioxane	2	1 L Amber			
8270 MOD 1,4 dioxane		1 L Amber			
DUPLICATES / SPLITS / BLANKS? ☒ ☐ ☐ N					

GROUNDWATER SAMPLING INFORMATION

DATE: 5/25/21

TASK: 532.30

WELL ID: Mw-08

Time 1305 Static DTW (ft below reference point)	131.25	Casing Volume (CV) (gallons) 5.7	3 CV (gallons) 17.1	Weather Conditions	Initials: DJS, AJJ
Casing Total Depth (ft below reference point)	166	Purging Device Grundfos	Sampling Device old tubing	Time 1300 Temp. —	Begin Purge 1336 End Purge 1357
Pump to Screen Water Column (feet)	34.75	Pump: Depth (ft brp) ~164	Type MP1 Voltage 115 HP 0.5	Skies —	Gallons Purged 21 CVs Purged 3.68
Casing Capacity (Diameter 7") (gallons per foot)	0.163	Monitor Well Recharge Rate: Slow	Fast ☒	Wind (mph) — From —	DTW (ft brp) 131.25 Time 1305

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)		
1338	131.25	0	0	Begin Purge							
1339	133.00	3	0.5	23.4	7.45	1758	166.7	1.51	1.94	280	Q ≈ 1 GPM
1342	133.15	6	1.0	23.6	7.38	1724	165.3	1.31	1.64	280	
1345	133.20	9	1.5	23.6	7.33	1737	164.9	1.17	1.87	280	
1348	133.25	12	2.0	23.7	7.31	1703	162.9	1.15	0.64	280	
1351	133.25	16	2.5	23.7	7.29	1725	162.6	1.20	0.64	280	
1354	133.26	18	3.0	23.7	7.27	1725	162.4	1.08	1.21	280	
1357	NM	21	3.68	End Purge							

SAMPLE COLLECTION SAMPLE TIME 1355	
ANALYSIS	QUANTITY TYPE
8260B VOCs	6 40 ml VOA
8270 SIM 1,4 dioxane	1 L Amber
8270 MOD 1,4 dioxane	1 L Amber
DUPLICATES / SPLITS / BLANKS?	0 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.)

~~DATA~~ COLLECTED

GROUNDWATER SAMPLING INFORMATION

DATE: 5/25/21

TASK: 532.30

WELL ID: MW-41

Time 1544 Static DTW (ft below reference point) 140.40	Casing Volume (CV) (gallons) 37 3 CV (gallons) 117	Weather Conditions	Initials: (JJS, AD)
Casing Total Depth (ft below reference point) 425	Purging Device 2nd Pump Sampling Device 0-10 PS	Time 1540 Temp. —	Begin Purge 1555 End Purge 1611
PUMP Water Column (feet) 43	Pump: Depth (ft brp) 360 Type MPI Voltage 240 HP —	Skies —	Gallons Purged 160 CVs Purged 410
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) — From —	DTW (ft brp) 140.46 Time 1544

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)		
1555	140.40	0	0	21.9	7.14	2182	153.6	3.61	2.14	—	Q ≈ 10 GPM
1557	148.30	20	0.5	22.0	7.11	2183	156.1	4.0	2.35	—	
1559	148.40	40	1.0	22.0	7.08	2191	157.9	4.10	2.61	—	
1601	148.49	60	1.5	22.0	7.06	2191	154.2	4.11	2.42	—	
1603	148.54	80	2.0	22.0	7.04	2196	162.4	4.19	1.61	—	
1605	148.60	100	3.0	22.0	7.03	2195	162.5	4.19	1.18	—	
1607	148.60	120	4.0							—	
1611	NA	160	4.10							—	End Purge

SAMPLE COLLECTION SAMPLE TIME 1610			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	4	40 ml VOA	Dup, SPIA collected		
8270 SIM 1,4 dioxane	3	1 L Amber			
8270 MOD 1,4 dioxane		1 L Amber			
DUPLICATES / SPLITS / BLANKS? ☒ N If yes, complete appropriate forms.					

GROUNDWATER SAMPLING INFORMATION

DATE: 5/26/21

TASK: 532.30

WELL ID: MW-30a

Time <u>0835</u> Static DTW (ft below reference point)	113.70	Casing Volume (CV) (gallons) <u>17.2</u> 3 CV (gallons) <u>51.5</u>	Weather Conditions	Initials: <u>DJS, GPD</u>
Casing Total Depth (ft below reference point)	564	Purging Device <u>ded Pump</u> Sampling Device <u>NA</u>	Time <u>0820</u> Temp. <u>-</u>	Begin Purge <u>0842</u> End Purge <u>0855</u>
<u>Pump</u> Water Column (feet)	44	Pump: Depth (ft brp) <u>520</u> Type <u>Grundfos</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>-</u>	Gallons Purged <u>76</u> CVs Purged <u>4.4</u>
Casing Capacity (Diameter <u>2</u> ") (gallons per foot)	0.30	Monitor Well Recharge Rate: Slow <u>-</u> Fast <u>X</u>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>-</u> Time <u>-</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)		
0842	113.70	0	0	2	Begin purge					-	
0843	115.84	9	0.5	21.6	7.87	799	157.6	6.5	1.48	-	Q ≈ 6 GPM
0845	115.85	17	1.0	21.3	7.75	788	116.8	4.4	1.21	-	
0846	115.86	26	1.5	21.4	7.74	789	113.1	0.38	1.36	-	
0848	116.06	34	2.0	21.5	7.67	785	116.5	0.50	1.46	-	
0849	116.08	43	2.5	21.5	7.60	784	118.3	0.55	1.20	-	
0851	116.10	52	3.0	21.5	7.61	781	119.9	0.58	1.12	-	
0855	NA	76	4.4	End purge						-	

SAMPLE COLLECTION SAMPLE TIME <u>0852</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	40 ml VOA
8270 SIM 1,4 dioxane	1 L Amber
8270 MOD 1,4 dioxane	1 L Amber
DUPLICATES / SPLITS / BLANKS?	Y <u> </u>
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA 2 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: 5/26/21

TASK: 532.30

WELL ID: MW-30B

Time 0910 Static DTW (ft below reference point) 111.52	Casing Volume (CV) (gallons) 37.4 3 CV (gallons) 112.3	Weather Conditions	Initials: DJS, CVP
Casing Total Depth (ft below reference point) 616	Purging Device ded. Pump Sampling Device L100 P/Perist	Time 0900 Temp. -	Begin Purge 0915 End Purge 0940
Pump Water Column (feet) 96	Pump: Depth (ft brp) 520 Type grouting Voltage 240 HP -	Skies -	Gallons Purged 133 CVs Purged 3.55
Casing Capacity (Diameter 3") (gallons per foot) 0.34	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) - From -	DTW (ft brp) 111.52 Time 0910

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (uS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0915	111.52	0	0								
0918	132.60	19	0.5	21.4	7.25	1377	-20.5	0.35	0.36	-	Q ≈ 5 GPM
0922	135.31	38	1.0	21.5	7.23	1447	-86.5	2.88	0.64	-	
0925	137.00	57	1.5	21.6	7.21	1895	-43.7	4.41	0.18	-	
0928	137.81	76	2.0	21.6	7.31	1437	-25.2	3.43	0.68	-	
0932	138.60	95	2.5	21.7	7.32	1409	-18.5	3.11	1.63	-	
0936	138.99	113	3.0	21.7	7.31	1404	-12.6	3.00	1.19	-	
0940	NM	133	3.55							-	End Purge

SAMPLE COLLECTION SAMPLE TIME 0940
ANALYSIS QUANTITY TYPE

8260B VOCs 1 40 ml VOA
8270 SIM 1.4 dioxane 3 1 L Amber
8270 MOD 1.4 dioxane 1 1 L Amber

DUPLICATES/SPLITS/BLANKS? ☒ N
If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA 2 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.)

Dup, split collected

GROUNDWATER SAMPLING INFORMATION

DATE: 5/26/21

TASK: 532.30

WELL ID: MW-32B

Time 1041 Static DTW (ft below reference point)	78.08	Casing Volume (CV) (gallons) 19.2	3 CV (gallons) 57.6	Weather Conditions	Initials: DTS, CVO
Casing Total Depth (ft below reference point)	999	Purging Device del 9/23/19	Sampling Device del 10/2/19	Time 1040 Temp.	Begin Purge 1045 End Purge 1105
Water Column (feet)	32	Pump: Depth (ft brp) 467	Type Red Fox Voltage 110 HP	Skies	Gallons Purged 64 CVs Purged 3.33
Casing Capacity (Diameter 6") (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow	Fast	Wind (mph)	DTW (ft brp) 78.08 Time 1041

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)		
1045	78.08	0	0			Begin	Purge				
1048	78.40	4	0.5	21.8	7.60	932	177.1	0.37	1.06	299	Q2 3 GPM
1051	79.45	18	1.0	22.0	7.57	930	68.7	0.17	1.16	299	
1054	79.46	27	1.5	22.1	7.55	930	157.5	0.09	0.34	299	
1057	79.50	36	2.0	22.1	7.54	928	148.7	0.07	0.68	299	
1100	79.51	45	2.5	22.1	7.53	928	144.0	0.06	0.63	299	
1103	79.51	58	3.0	22.1	7.53	928	139.8	0.06	0.81	299	
1105	NM	64	3.33			End	Purge				

SAMPLE COLLECTION SAMPLE TIME 1105			AIR MONITORING PID/FID ppm: VAULT NA				BROD 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 <u>(N)</u> If yes, complete appropriate forms.												

GROUNDWATER SAMPLING INFORMATION

DATE: 5/16/21

TASK: 532.30

WELL ID: MW-34B

Time 1245 Static DTW (ft below reference point) 127.84	Casing Volume (CV) (gallons) 46 3 CV (gallons) 138	Weather Conditions	Initials: AW 34B + DT, CV
Casing Total Depth (ft below reference point) 536	Purging Device ded. pump Sampling Device 10-100 PS	Time 1240 Temp -	Begin Purge 1759 End Purge 1309
Pump Water Column (feet) 76	Pump: Depth (ft brp) 460 Type gamma probe Voltage 240 HP	Skies -	Gallons Purged 1725 CVs Purged 3.7
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast	Wind (mph) - From -	DTW (ft brp) 127.89 Time 1245

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)		
1254	127.84	0	0	21.5	7.37	972	34.8	1.18	3.72	-	
1300	140.18	23	0.5	21.7	7.41	972	54.6	1.68	5.03	-	Q3 11.5
1302	140.40	46	1.0	21.8	7.43	971	68.5	1.83	3.61	-	
1303	140.40	69	1.5	21.8	7.43	970	72.0	1.84	2.48	-	
1304	140.46	92	2.0	21.8	7.43	973	76.0	1.90	1.37	-	
1305	140.50	115	2.5	21.8	7.43	970	77.5	1.92	1.32	-	
1306	140.58	138	3.0	21.8	7.43	970	77.5	1.92	1.32	-	
1309	NM	1725	3.75							-	END Purge

SAMPLE COLLECTION SAMPLE TIME 1305
ANALYSIS QUANTITY TYPE

8260B VOCs 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.)

GROUNDWATER SAMPLING INFORMATION

DATE: 5/25/21

TASK: 532.30

WELL ID: MW-43

Time 0820 Static DTW (ft below reference point) 65.59	Casing Volume (CV) (gallons) 291.6 3 CV (gallons) 874.8	Weather Conditions	Initials: RA/DJS
Casing Total Depth (ft below reference point) 1046	Purging Device dew. Pump Sampling Device ND DS	Time 0820 Temp. 69	Begin Purge 0824 End Purge 0909
Pump to Screen Water Column (feet) 406	Pump: Depth (ft brp) 560 Type grinder Voltage 240 HP -	Skies Cloudy	Gallons Purged 975 CVs Purged 3.34
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) - From -	DTW (ft brp) 65.59 Time 0820

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)		
0824	65.59	0	0							-	
0831	72.55	145.5	0.5	20.7	9.19	526.5	41.4	0.02	2.50	-	Q ≈ 20 gpm
0838	72.69	291	1.0	21.3	8.11	496.3	-51.1	0.05	2.37	-	
0844	72.72	436.5	1.5	21.5	7.96	493.1	-34.7	0.04	1.41	-	
0851	72.77	582	2.0	21.5	7.92	493.2	-32.7	0.03	1.72	-	
0858	72.81	727.5	2.5	21.5	7.81	493.4	-37.0	0.05	1.42	-	
0904	72.85	875	3.0	21.5	7.86	494.1	-42.7	0.03	1.22	-	collect sample
0909	NM	975	3.34							-	end purge

SAMPLE COLLECTION SAMPLE TIME 0905			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	9	40 ml VOA	SPIT, DUP collected SPIT collected @ 0905			
8270 SIM 1,4 dioxane	3	1 L Amber				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? ☒ Y ☐ N						
If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 5/28/12

TASK: 532.30

WELL ID: MW-33

Time 1316	Static DTW (ft below reference point) 70.61	Casing Volume (CV) (gallons) 291	3 CV (gallons) 873	Weather Conditions	Initials: DJS, RA
Casing Total Depth (ft below reference point)	1020	Purging Device dcd. pur	Sampling Device 0-10P	Time 1315	Temp. -
Pump Water Column (feet)	485.	Pump: Depth (ft brp) 335	Type 9000	Skies -	Begin Purge 1320
Casing Capacity (Diameter ") (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow	Fast	Wind (mph) -	End Purge 1417
					Gallons Purged 921
					CVs Purged 3.6
					DTW (ft brp) 70.61
					Time 1318

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)		
1320	70.61	0	0	~	Begin Purge	~					
1324	72.53	145.5	0.5	20.6	7.66	698	-216.4	0.02	1.03	-	Q ≈ 16 GPM
1338	72.55	291	1.0	20.9	7.57	710	-147.4	0.17	1.61	-	
1347	72.61	436.5	1.5	20.9	7.53	715	-78.0	0.36	2.41	-	
1356	72.61	582	2.0	21.1	7.40	716	-44.2	0.63	0.68	-	
1405	72.61	727.5	2.5	20.9	7.51	715	-27.6	0.37	0.64	-	
1414	72.61	873	3.0	21.0	7.51	716	-15.2	0.76	0.64	-	
1418	Nm	921	3.16	~	End Purge	~				-	

SAMPLE COLLECTION SAMPLE TIME 1415			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	9	40 ml VOA	SPT, Dup			
8270 SIM 1,4 dioxane	3	1 L Amber				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? (Y) N						
If yes, complete appropriate forms.						

MAY 2021

**QUARTERLY GROUNDWATER MONITORING
FIELD NOTEBOOK
LARGE VOLUME MONITOR WELLS**

RAYTHEON COMPANY

532.30

**1901 MALVERN AVE.
FULLERTON, CALIFORNIA**



HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: May 2021

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)	FEB 2021 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL ($\pm$ ft)	COMMENTS	INITIALS
P-07	05/24/21	1337	TOC	111.47	142.31	30.84	111.64	+0.17		
P-09	05/24/21	1245	TOC	120.77	183.86	63.09	120.81	+0.04		AMS/RA
MW-06	05/24/21	1248	TOC	154.84	184.70	29.86	156.08	+1.24		↓
MW-08	05/ /21				155.91		131.58			
MW-09	05/24/21	1239	PC	153.02	180.10	27.08	154.51	+1.49		AMS/RA
MW-13	05/24/21	1026	TOC	122.80	141.84	19.04	119.38	-3.42		↓
MW-15	05/ /21				144.95		128.04			
MW-16	05/24/21	1300	TOC	124.01	142.40	18.39	124.48	+0.47		AMS/RA
MW-17	05/24/21	1153	TOC	122.67	142.70	20.03	119.50	-3.17		
MW-18	05/24/21	1028	TOC	123.12	142.32	19.20	119.90	-3.22		
MW-19	05/24/21	1157	TOST	122.82	142.06	19.24	119.63	-3.19		
MW-20	05/24/21	1251	TOC	149.79	184.19	34.40	151.68	+1.89		
MW-21	05/24/21	1306	TOST	116.05	141.18	25.13	116.07	+0.02	Totalizer: Pumping?	
MW-22	05/24/21	1036	TOST	119.92	138.65	19.23	116.02	-3.4		
MW-23	05/24/21	1010	TOC	119.55	137.33	17.91	115.53	-4.02		
MW-24	05/24/21	1301	TOC	119.12	142.83	23.71	117.11	-2.01		
MW-25	05/24/21	1303	TOC	116.98	142.64	25.66	119.38	+2.4		
MW-26A	05/24/21	1002	TOC	117.07	137.04	22.97	117.66	+0.59		
MW-26B	05/24/21	1000	TOC	119.05	137.05	18.00	119.91	+0.86		
MW-26C	05/24/21	0958	TOC	120.19	137.22	17.03	119.80	-0.39		↓

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: May 2021

PROJECT NUMBER: 532.30

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

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	FEB 2021 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL ($\pm$ ft)	COMMENTS	INITIALS
MW-27	05/24/21	1041	TOST	119.80	137.16	17.36	119.34	-0.46		AMS/RA
MW-28	05/24/21	1020	TOST	123.91	140.77	16.86	123.83	-0.08		↓
MW-29	05/ /21				139.81		185.30p		Totalizer: Pumping?	
MW-30A	05/ /21				129.44		112.72			
MW-30B	05/ /21				129.39		109.51			
MW-31	05/ /21				119.60		100.98			
MW-32A	05/ /21				92.88		75.60			
MW-32B	05/ /21				92.89		75.29			
MW-32C	05/ /21				92.88		69.77			
MW-33	05/ /21				83.19		66.31			
MW-34A	05/24/21	1210	TOST	140.14	153.25	13.11	134.31	-5.83		AMS/RA
MW-34B	05/24/21	1208	TOST	137.66	153.11	15.45	137.19	-0.47		↓
MW-34C	05/24/21	1212	TOST	137.06	153.29	16.23	135.33	-1.73		↓
MW-35A	05/ /21				93.57		64.05			
MW-35B	05/ /21				93.56		73.29			
MW-35C	05/ /21				93.55		76.12			
MW-36	05/24/21	0834	TOST	73.49	86.65	13.06	71.04	-2.45		AMS/RA
MW-37	05/24/21	0908	TOST	134.70	155.60		135.60			
MW-38	05/24/21	0913	TOST	142.45	154.90		139.27			↓
MW-39	05/24/21	0849	TOST	71.84	84.25	12.41	68.50	-3.34		↓

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: May 2021

PROJECT NUMBER: 532.30

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

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	FEB 2021 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-40	05/ /21				123.40		104.41			
MW-41	05/24 /21	0927	TOST	140.25	155.60	15.35	139.16	-1.09		AMJ/RA
MW-42	05/ /21				82.80		67.17			
MW-43	05/ /21				76.64		61.31			
EW-01	05/24 /21	1310	TOST	122.48	141.07	18.59	122.81	+0.33	SOUNDING TUBE TO 172.65 Totalizer: Pumping? N	AMJ/RA
EW-02	05/ /21				132.97		121.19		Totalizer: Pumping?	

msl = Mean sea level
ft = feet



HARGIS + ASSOCIATES, INC.

**MAY 2021 GROUNDWATER SAMPLE PLAN
TEAM 2**

QA/QC	Total VOC's µg/L	1,4-Dioxane µg/L	APPROX. GALLONS	ESTIMATE D TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	MAY 2020 SAMPLING SCHEDULE	SAMPLE METHOD
✓	1552	610	275	5	MW-21	Water Table; BC	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
✓	73	47	154	4	~~EW-01~~	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Dedicated
✓	121	ND	124	23	MW-30B	Deep; BC	VOCs; 1,4-Dioxane	Ded.240V
✓	98	2.5	66	22	MW-32B	Deep; B	VOCs; 1,4-Dioxane	Ded. Redi-Flo 2
✓	80	25	160	11	MW-34B	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded 240V
✓	1	ND	243	26	~~MW-41~~	Deep; B	VOCs; 1,4-Dioxane (8270 MOD)	Ded.240V
✓	1	ND	103	11	~~MW-28~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
✓	0.3	0.61	218	23	~~MW-49~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
✓	ND	ND	65	11	MW-30A	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
✓	63	2.6	18	16	~~MW-08~~	Water Table; BC	VOCs; 1,4-Dioxane	Redi-flo
✓	ND	ND	157	62	~~MW-26C~~	Deep; B	VOCs; 1,4-Dioxane	Redi-flo

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

HARGIS + ASSOCIATES, INC.

**MAY 2021 GROUNDWATER SAMPLE PLAN
TEAM 1**

QA/QC	Total VOC's µg/L	1,4-Dioxane µg/L	APROX. GALLONS	ESTIMATE D TIME (minutes)	WELL IDENTIFIER	HYDROGEOLOGIC ZONE	MAY 2020 SAMPLING SCHEDULE	SAMPLE METHOD
	ND	ND	918	46	~~MW-35C~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	0.5	ND	867	46	~~MW-39~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
Thu	ND	ND	934	43	MW-43	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
Thu	5.0	ND	933	51	MW-33	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	35	1.9	928	49	~~MW-42~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V
	81	10	980	76	MW-36	Deep; D	VOCs; 1,4-Dioxane	Ded.240V
	67	6.3	282	30	~~MW-31~~	Deep; B	VOCs; 1,4-Dioxane	Ded.240V

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 teams each morning.

GROUNDWATER SAMPLING INFORMATION

DATE: 5/25/21

TASK: 532.30

WELL ID: MW-35C

Time <u>0815</u> Static DTW (ft below reference point) <u>79.51</u>	Casing Volume (CV) (gallons) <u>283</u> 3 CV (gallons) <u>864</u>	Weather Conditions	Initials: <u>AMS/RA</u>
Casing Total Depth (ft below reference point) <u>1040</u>	Purging Device <u>ded. pump</u> Sampling Device <u>ND Pipe</u>	Time <u>0815</u> Temp. <u>70</u>	Begin Purge <u>0827</u> End Purge <u>0919</u>
Water Column (feet) <u>480</u>	Pump: Depth (ft brp) <u>560</u> Type <u>grout</u> Voltage <u>240</u> HP <u>-</u>	Skies <u>Clear</u>	Gallons Purged <u>909</u> CV's Purged <u>3.2</u>
Casing Capacity (Diameter 4") (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast _____	Wind (mph) _____ From _____	DTW (ft brp) <u>88.14</u> Time <u>0916</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µm S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0827	79.51	0	0				pump	on		-	
0839	87.98	144	0.5	20.4	7.28	0.84	107.7	0.59	26.0	-	Q = 20 gpm
0846	87.98	288	1.0	20.5	7.41	0.74	106.0	1.28	8.61	-	
0854	87.98	432	1.5	20.6	7.43	0.77	73.1	2.53	6.62	-	
0902	88.09	576	2.0	20.6	7.45	0.77	71.5	2.63	9.92	-	
0909	88.12	720	2.5	20.6	7.46	0.77	73.7	2.70	9.22	-	
0916	88.14	864	3.0	20.6	7.48	0.73	69.5	2.67	4.33	-	Collect sample
0919	NM	909	3.2				end	purge			

SAMPLE COLLECTION SAMPLE TIME <u>0917</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? <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.)

GROUNDWATER SAMPLING INFORMATION

DATE: 5/25/21

TASK: 532.30

WELL ID: MW-39

Time 1034 Static DTW (ft below reference point)	71.94	Casing Volume (gallons) 271	SV (gallons) 814	Weather Conditions	Time 1034 Temp 80	Initials: AMS/RA
Casing Total Depth (ft below reference point)	1012	Purging Device ded pump	Sampling Device 0-10 ft	Skies clear	Begin Purge 1042	End Purge 1131
Water Column (feet)	452	Pump: Depth (ft brp) 560	Type gulfos Voltage 240 HP	Wind (mph) - From -	Gallons Purged 861	CVs Purged 3.2
Casing Capacity (Diameter 4" (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow	Fast X	DTW (ft brp) 84.71	Time 1121	

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)		
1042	71.94	0	0	begin purge						-	
1050	84.34	136	0.5	21.7	8.07	430.5	-209.3	6.83	0.61	-	Q ≈ 18 gpm
1100	84.53	271	1.0	22.5	8.25	416.6	-194.4	5.34	0.60	-	
1106	84.6	407	1.5	22.6	8.09	428.5	-166.4	4.56	0.66	-	
1113	84.65	542	2.0	22.6	8.05	431.6	-161.7	3.74	1.04	-	
1121	84.71	678	2.5	22.6	8.04	433.9	-161.1	2.91	0.47	-	
1129	NM	814	3.0	22.6	8.03	434.7	-161.7	2.53	0.67	-	collect samples
1131	NM	861	3.2	end pump purge						-	

SAMPLE COLLECTION SAMPLE TIME 1129	
ANALYSIS	QUANTITY TYPE
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	

AIR MONITORING PID/FID ppm: VAULT NA	BKOD 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: 5/25/21

TASK: 532.30

WELL ID: MW-42

Time 1335 Static DTW (ft below reference point)	70.92	screen SV	Casing Volume (GV) (gallons) 295	3 GV (gallons) 885	Weather Conditions	Time 1335 Temp 82	Initials: AMS/RA
Casing Total Depth (ft below reference point)	1051	Purging Device ded. pump	Sampling Device 10-100 peristaltic		Skies clear	Begin Purge 1341	End Purge 1426
Water Column (feet)	491	Pump Depth (ft brp) 560	Type grinder Voltage 240 HP			Gallons Purged 924 SV	CVs Purged 3.1
Casing Capacity (Diameter 4") (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow	Fast ☒		Wind (mph) — From —	DTW (ft brp) 79.93	Time 1423

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)		
1341	70.92	0	0			BCG-sh	purge				
1349	71.68	148	0.5	20.8	7.46	631	-173.7	5.49	0.70	—	Q ≈ 23 gpm
1355	79.78	295	1.0	21.4	7.66	616	-170.0	0.82	1.55	—	
1402	79.82	443	1.5	21.5	7.67	614	-155.9	0.36	1.70	—	
1409	79.85	590	2.0	21.5	7.67	614	-156.8	0.25	1.78	—	
1416	79.90	738	2.5	21.5	7.69	614	-157.0	0.20	1.00	—	
1423	79.93	885	3.0	21.5	7.67	615	-157.4	0.17	1.06	—	collect samples
1426	NM	924	3.1			End	purge				

SAMPLE COLLECTION SAMPLE TIME 1423

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 ☒

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: 5/25/21

TASK: 532.30

WELL ID: MW-31

Time 1615 Static DTW (ft below reference point)	103.35 screen casing Volume (CV) (gallons) 81	3 CV (gallons) 243	Weather Conditions	Initials: AMS/RA
Casing Total Depth (ft below reference point)	996	Purging Device det. pump	Sampling Device 10-100 pipe-stn	Begin Purge 1523 End Purge 1543
Water Column (feet)	54	Pump: Depth (ft brp) 942	Type groutless Voltage 240 HP -	Gallons Purged 263 SV 3.2
Casing Capacity (Diameter 6") (gallons per foot)	1.5	Monitor Well Recharge Rate: Slow	Fast	DTW (ft brp) 107.51 Time 1541

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)		
1518	103.35	0	0				Begin				
1523	107.44	40	0.5	21.0	7.27	1174	159.5	5.41	3.21	-	QA = 11 gpm
1526	107.51	81	1.0	21.3	8.05	1584	24.3	1.09	37.8	-	
1529	107.58	120	1.5	21.4	7.48	1356	3.7	0.65	14.3	-	
1533	107.51	162	2.0	21.5	7.42	1229	-1.1	0.53	12.2	-	
1537	107.51	202	2.5	21.5	7.38	1171	2.0	0.57	6.66	-	
1541	107.51	243	3.0	21.5	7.36	1135	9.6	0.65	5.29	-	collect samples
1543	NM	263	3.2				End				to

SAMPLE COLLECTION SAMPLE TIME 1541			AIR MONITORING PID/FID ppm: VAULT NA BKOB 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: 5/26/21

TASK: 532.30

WELL ID: MW-40

Time 0815 Static DTW (ft below reference point)	105.61	Screen Casing Volume (CV) (gallons) 67.5	3 CV (gallons) 203	Weather Conditions	Initials: AMS/RA
Casing Total Depth (ft below reference point)	970	Purging Device: ded pump	Sampling Device: 0-10 pipette	Time 0815 Temp. 68	Begin Purge 0835 End Purge 0908
Water Column (feet)	50	Pump: Depth (ft brp) 920	Type Grundfos Voltage 240 HP	Skies overcast	Gallons Purged 267 CVs Purged 3.9
Casing Capacity (Diameter 6") (gallons per foot)	1.35	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) - From -	DTW (ft brp) 105.69 Time 0835

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)		
0835	105.69	0	0				pump on			-	
0839	106.58	33.8	0.5	20.9	7.48	888	230	3.22	2.20	-	Q ≈ 9.5
0843	106.60	67.6	1.0	21.2	7.42	839	-103.2	1.53	1.55	-	
0847	106.60	101.4	1.5	21.4	7.54	869	-67.4	0.62	0.88	-	
0850	106.61	135.2	2.0	21.4	7.49	887	-46.9	0.74	2.79	-	
0854	106.64	169	2.5	21.5	7.64	890	-44.3	0.77	4.70	-	
0858	106.64	203	3.0	21.5	7.65	886	-47.1	0.74	1.12	-	collect sample
0908	NM	267	3.9				pump off				

SAMPLE COLLECTION ANALYSIS	SAMPLE TIME	QUANTITY	TYPE
8260B VOCs	0854	9	40 ml VOA
8270 SIM 1,4 dioxane		3	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.)

MS/MSD collected

GROUNDWATER SAMPLING INFORMATION

DATE: 5/26/21

TASK: 532.30

WELL ID: EW-01

Time <u>0946</u> Static DTW (ft below reference point) <u>122.66</u>	Casing Volume (CV) (gallons) <u>43.2</u> 3 CV (gallons) <u>129.6</u>	Weather Conditions Time <u>0946</u> Temp <u>72</u>	Initials: <u>RA/AMJ</u>
Casing Total Depth (ft below reference point) <u>186.1</u>	Purging Device <u>ded pump</u> Sampling Device <u>ded port</u>	Skies <u>clear</u>	Begin Purge <u>0954</u> End Purge <u>1022</u>
Water Column (feet) <u>65.44</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>308</u> CVs Purged <u>7.1</u>
Casing Capacity (Diameter <u>4</u> " (gallons per foot) <u>0.6</u>	Monitor Well Recharge Rate: Slow <u> </u> Fast <u>X</u>		DTW (ft brp) <u>123.31</u> Time <u>1017</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0954	122.66	0	0	~	Begin purge	~				-	
1009	123.39	165	3.8	23.9	7.37	1472	170.5	6.61	0.56	-	Q ≈ 11 gpm
1011	123.31	187	4.3	22.5	7.34	1468	169.5	6.95	1.35	-	
1013	123.31	209	4.8	22.4	7.33	1469	167.3	6.42	3.09	-	
1015	123.31	231	5.3	22.4	7.33	1471	166.4	6.81	1.23	-	
1017	123.31	253	5.9	22.3	7.31	1471	166.5	6.95	0.69	-	
1019	NM	275	6.4	22.3	7.30	1469	165.0	7.28	3.73	-	
1022	NM	308	7.1	~	End purge	~				-	

SAMPLE COLLECTION	SAMPLE TIME	<u>1020</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?	<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.)

GROUNDWATER SAMPLING INFORMATION

DATE: 5/25/21

TASK: 532.30

WELL ID: MW-27

Time <u>1027</u> Static DTW (ft below reference point) <u>116.21</u>	Casing Volume (CV) (gallons) <u>76.5</u> 3 CV (gallons) <u>229</u>	Weather Conditions	Initials: <u>AMS/RA</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>	Time <u>1030</u> Temp. <u>75</u>	Begin Purge <u>1031</u> End Purge <u>1050</u>
Water Column (feet) <u>115.89</u>	Pump: Depth (ft brp) <u>-</u> Type <u>-</u> Voltage <u>-</u> HP <u>-</u>	Skies <u>clear</u>	Gallons Purged <u>269</u> CVs Purged <u>3.5</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>	Wind (mph) <u>-</u> From <u>-</u>	DTW (ft brp) <u>136.82</u> Time <u>1041</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)		
1031	116.21	0	0								
1033	135.52	38.3	0.5	22.8	7.30	2076	71.7	2.98	1.57	-	Q ≈ 21 gpm
1035	135.84	76.5	1.0	22.2	7.33	2152	14.8	1.61	1.83	-	
1037	136.28	115	1.5	21.9	7.27	2208	31.5	2.57	2.17	-	
1039	136.61	154	2.0	22.0	7.24	2228	51.5	3.35	1.02	-	
1041	136.82	193	2.5	21.9	7.22	2234	63.9	3.61	4.01	-	
1044	NM	229	3.0	21.9	7.20	2234	75.7	3.93	2.28	-	collect sample
1050	NM	269	3.5								

SAMPLE COLLECTION SAMPLE TIME 1044

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

 DUPLICATES / SPLITS / BLANKS? Y
 If yes, complete appropriate forms.
AIR MONITORING PID/FID ppm: VAULT NA 2 BRGD 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: 5/26/21

TASK: 532.30

WELL ID: MW-36

Time 1245 Static DTW (ft below reference point)	73.98	Casing Volume (CV) (gallons) 320	3 CV (gallons) 961.2	Weather Conditions	Time 1245 Temp. 80	Initials: AMO/RA
Casing Total Depth (ft below reference point)	994	Purging Device det. pump	Sampling Device 10-100 piped	Skies clear	Begin Purge 1249	End Purge 1405
Pump Water Column (feet)	534	Pump: Depth (ft brp) 460	Type Grundfos Voltage 240 HP	Wind (mph) 7	Gallons Purged 994	CVs Purged 3.1
Casing Capacity (Diameter 4") (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow	Fast X	From	DTW (ft brp) 77.75	Time 1402

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)		
1249	73.98	0	0								Begin purge
1301	77.51	160.2	0.5	21.1	7.50	1109	-36.5	2.91	1.50	-	QA 13 gpm
1314	77.61	320.4	1.0	21.7	7.89	743	-36.2	1.44	1.44	-	
1325	77.62	480.6	1.5	21.8	7.45	1115	-27.2	6.89	1.35	-	
1338	77.75	640.8	2.0	21.8	7.43	1190	-18.8	0.53	2.00	-	
1350	77.75	801.0	2.5	21.8	7.44	1222	-23.7	0.34	2.23	-	
1402	77.75	961.2	3.0	21.8	7.44	1243	-27.7	0.24	2.17	-	collect sample
1405	NM	994	3.1								pump off

SAMPLE COLLECTION		SAMPLE TIME 1403
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)
If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm: VAULT NA BKCD 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

ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-60366-1

Client Project/Site: Raytheon Main / 532.30

For:

Hargis + Associates, Inc.
La Jolla Gateway
9171 Towne Centre Drive
Suite 375
San Diego, California 92122

Attn: Julie Kelly

Virendra R Patel

Authorized for release by:
6/3/2021 12:05:00 PM

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

Virendra.Patel@eurofinset.com

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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 Main / 532.30

Job ID: 570-60366-1

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 Main / 532.30

Job ID: 570-60366-1

Job ID: 570-60366-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative 570-60366-1

Comments

No additional comments.

Receipt

The samples were received on 5/27/2021 4:28 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 3.4° 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 570-153912.

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 Main / 532.30

Job ID: 570-60366-1

Client Sample ID: TB-05272021B

Lab Sample ID: 570-60366-1

No Detections.

Client Sample ID: MW-33

Lab Sample ID: 570-60366-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	3.8		0.50	0.39	ug/L	1		8260B	Total/NA
Toluene	2.0		0.50	0.33	ug/L	1		8260B	Total/NA
Trichloroethene	0.54		0.50	0.29	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60366-1

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

Client Sample ID: TB-05272021B

Date Collected: 05/27/21 08:00

Date Received: 05/27/21 16:28

Lab Sample ID: 570-60366-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			05/28/21 23:05	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			05/28/21 23:05	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			05/28/21 23:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			05/28/21 23:05	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			05/28/21 23:05	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			05/28/21 23:05	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			05/28/21 23:05	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			05/28/21 23:05	1
1,2,3-Trichlorobenzene	ND		0.50	0.28	ug/L			05/28/21 23:05	1
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			05/28/21 23:05	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			05/28/21 23:05	1
1,2,4-Trimethylbenzene	ND		0.50	0.29	ug/L			05/28/21 23:05	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			05/28/21 23:05	1
1,2-Dibromoethane	ND		0.50	0.14	ug/L			05/28/21 23:05	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			05/28/21 23:05	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			05/28/21 23:05	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			05/28/21 23:05	1
1,3,5-Trimethylbenzene	ND		0.50	0.28	ug/L			05/28/21 23:05	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			05/28/21 23:05	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			05/28/21 23:05	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			05/28/21 23:05	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			05/28/21 23:05	1
2-Butanone	ND		5.0	3.0	ug/L			05/28/21 23:05	1
2-Chlorotoluene	ND		0.50	0.31	ug/L			05/28/21 23:05	1
2-Hexanone	ND		6.0	4.3	ug/L			05/28/21 23:05	1
4-Chlorotoluene	ND		0.50	0.34	ug/L			05/28/21 23:05	1
4-Methyl-2-pentanone	ND		5.0	2.2	ug/L			05/28/21 23:05	1
Acetone	ND		8.0	4.0	ug/L			05/28/21 23:05	1
Benzene	ND		0.50	0.27	ug/L			05/28/21 23:05	1
Bromobenzene	ND		0.50	0.26	ug/L			05/28/21 23:05	1
Bromochloromethane	ND		1.0	0.35	ug/L			05/28/21 23:05	1
Bromodichloromethane	ND		0.50	0.22	ug/L			05/28/21 23:05	1
Bromoform	ND		0.50	0.39	ug/L			05/28/21 23:05	1
Bromomethane	ND		1.0	0.93	ug/L			05/28/21 23:05	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			05/28/21 23:05	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			05/28/21 23:05	1
Carbon disulfide	ND		1.0	0.24	ug/L			05/28/21 23:05	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			05/28/21 23:05	1
Chlorobenzene	ND		0.50	0.24	ug/L			05/28/21 23:05	1
Chloroethane	ND		0.50	0.44	ug/L			05/28/21 23:05	1
Chloroform	ND		0.50	0.28	ug/L			05/28/21 23:05	1
Chloromethane	ND		1.0	0.29	ug/L			05/28/21 23:05	1
Dibromochloromethane	ND		0.50	0.27	ug/L			05/28/21 23:05	1
Dibromomethane	ND		0.50	0.23	ug/L			05/28/21 23:05	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			05/28/21 23:05	1
Ethylbenzene	ND		0.50	0.36	ug/L			05/28/21 23:05	1
Isopropylbenzene	ND		0.50	0.38	ug/L			05/28/21 23:05	1
Methylene Chloride	ND		1.0	0.48	ug/L			05/28/21 23:05	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.21	ug/L			05/28/21 23:05	1

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60366-1

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

Client Sample ID: TB-05272021B

Date Collected: 05/27/21 08:00

Date Received: 05/27/21 16:28

Lab Sample ID: 570-60366-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			05/28/21 23:05	1
n-Butylbenzene	ND		0.50	0.29	ug/L			05/28/21 23:05	1
N-Propylbenzene	ND		0.50	0.39	ug/L			05/28/21 23:05	1
o-Xylene	ND		0.50	0.35	ug/L			05/28/21 23:05	1
m,p-Xylene	ND		1.0	0.78	ug/L			05/28/21 23:05	1
p-Isopropyltoluene	ND		0.50	0.28	ug/L			05/28/21 23:05	1
sec-Butylbenzene	ND		0.50	0.34	ug/L			05/28/21 23:05	1
Styrene	ND		0.50	0.28	ug/L			05/28/21 23:05	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			05/28/21 23:05	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			05/28/21 23:05	1
tert-Butylbenzene	ND		0.50	0.34	ug/L			05/28/21 23:05	1
Tetrachloroethene	ND		0.50	0.29	ug/L			05/28/21 23:05	1
Toluene	ND		0.50	0.33	ug/L			05/28/21 23:05	1
Trichloroethene	ND		0.50	0.29	ug/L			05/28/21 23:05	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			05/28/21 23:05	1
Vinyl acetate	ND		5.0	3.1	ug/L			05/28/21 23:05	1
Vinyl chloride	ND		0.50	0.40	ug/L			05/28/21 23:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		68 - 135		05/28/21 23:05	1
4-Bromofluorobenzene (Surr)	93		71 - 120		05/28/21 23:05	1
Dibromofluoromethane	101		80 - 120		05/28/21 23:05	1
Toluene-d8 (Surr)	99		80 - 120		05/28/21 23:05	1

Client Sample ID: MW-33

Date Collected: 05/27/21 14:05

Date Received: 05/27/21 16:28

Lab Sample ID: 570-60366-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			05/29/21 00:26	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			05/29/21 00:26	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			05/29/21 00:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			05/29/21 00:26	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			05/29/21 00:26	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			05/29/21 00:26	1
1,1-Dichloroethene	3.8		0.50	0.39	ug/L			05/29/21 00:26	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			05/29/21 00:26	1
1,2,3-Trichlorobenzene	ND		0.50	0.28	ug/L			05/29/21 00:26	1
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			05/29/21 00:26	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			05/29/21 00:26	1
1,2,4-Trimethylbenzene	ND		0.50	0.29	ug/L			05/29/21 00:26	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			05/29/21 00:26	1
1,2-Dibromoethane	ND		0.50	0.14	ug/L			05/29/21 00:26	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			05/29/21 00:26	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			05/29/21 00:26	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			05/29/21 00:26	1
1,3,5-Trimethylbenzene	ND		0.50	0.28	ug/L			05/29/21 00:26	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			05/29/21 00:26	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			05/29/21 00:26	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			05/29/21 00:26	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			05/29/21 00:26	1

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60366-1

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

Client Sample ID: MW-33
Date Collected: 05/27/21 14:05
Date Received: 05/27/21 16:28

Lab Sample ID: 570-60366-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone	ND		5.0	3.0	ug/L			05/29/21 00:26	1
2-Chlorotoluene	ND		0.50	0.31	ug/L			05/29/21 00:26	1
2-Hexanone	ND		6.0	4.3	ug/L			05/29/21 00:26	1
4-Chlorotoluene	ND		0.50	0.34	ug/L			05/29/21 00:26	1
4-Methyl-2-pentanone	ND		5.0	2.2	ug/L			05/29/21 00:26	1
Acetone	ND		8.0	4.0	ug/L			05/29/21 00:26	1
Benzene	ND		0.50	0.27	ug/L			05/29/21 00:26	1
Bromobenzene	ND		0.50	0.26	ug/L			05/29/21 00:26	1
Bromochloromethane	ND		1.0	0.35	ug/L			05/29/21 00:26	1
Bromodichloromethane	ND		0.50	0.22	ug/L			05/29/21 00:26	1
Bromoform	ND		0.50	0.39	ug/L			05/29/21 00:26	1
Bromomethane	ND		1.0	0.93	ug/L			05/29/21 00:26	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			05/29/21 00:26	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			05/29/21 00:26	1
Carbon disulfide	ND		1.0	0.24	ug/L			05/29/21 00:26	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			05/29/21 00:26	1
Chlorobenzene	ND		0.50	0.24	ug/L			05/29/21 00:26	1
Chloroethane	ND		0.50	0.44	ug/L			05/29/21 00:26	1
Chloroform	ND		0.50	0.28	ug/L			05/29/21 00:26	1
Chloromethane	ND		1.0	0.29	ug/L			05/29/21 00:26	1
Dibromochloromethane	ND		0.50	0.27	ug/L			05/29/21 00:26	1
Dibromomethane	ND		0.50	0.23	ug/L			05/29/21 00:26	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			05/29/21 00:26	1
Ethylbenzene	ND		0.50	0.36	ug/L			05/29/21 00:26	1
Isopropylbenzene	ND		0.50	0.38	ug/L			05/29/21 00:26	1
Methylene Chloride	ND		1.0	0.48	ug/L			05/29/21 00:26	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.21	ug/L			05/29/21 00:26	1
Naphthalene	ND		1.0	0.32	ug/L			05/29/21 00:26	1
n-Butylbenzene	ND		0.50	0.29	ug/L			05/29/21 00:26	1
N-Propylbenzene	ND		0.50	0.39	ug/L			05/29/21 00:26	1
o-Xylene	ND		0.50	0.35	ug/L			05/29/21 00:26	1
m,p-Xylene	ND		1.0	0.78	ug/L			05/29/21 00:26	1
p-Isopropyltoluene	ND		0.50	0.28	ug/L			05/29/21 00:26	1
sec-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 00:26	1
Styrene	ND		0.50	0.28	ug/L			05/29/21 00:26	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			05/29/21 00:26	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			05/29/21 00:26	1
tert-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 00:26	1
Tetrachloroethene	ND		0.50	0.29	ug/L			05/29/21 00:26	1
Toluene	2.0		0.50	0.33	ug/L			05/29/21 00:26	1
Trichloroethene	0.54		0.50	0.29	ug/L			05/29/21 00:26	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			05/29/21 00:26	1
Vinyl acetate	ND		5.0	3.1	ug/L			05/29/21 00:26	1
Vinyl chloride	ND		0.50	0.40	ug/L			05/29/21 00:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		68 - 135		05/29/21 00:26	1
4-Bromofluorobenzene (Surr)	93		71 - 120		05/29/21 00:26	1
Dibromofluoromethane	100		80 - 120		05/29/21 00:26	1
Toluene-d8 (Surr)	103		80 - 120		05/29/21 00:26	1

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Client Sample Results

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

Job ID: 570-60366-1

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

Client Sample ID: MW-33
Date Collected: 05/27/21 14:05
Date Received: 05/27/21 16:28

Lab Sample ID: 570-60366-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		06/02/21 07:14	06/02/21 22:42	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	54		15 - 150				06/02/21 07:14	06/02/21 22:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	111		46 - 128				06/02/21 07:14	06/02/21 22:42	1

Surrogate Summary

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

Job ID: 570-60366-1

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 (68-135)	BFB (71-120)	DBFM (80-120)	TOL (80-120)
570-60366-1	TB-05272021B	103	93	101	99
570-60366-2	MW-33	103	93	100	103
LCS 570-153912/4	Lab Control Sample	106	102	100	100
LCSD 570-153912/5	Lab Control Sample Dup	100	101	101	100
MB 570-153912/8	Method Blank	105	97	100	99

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 (46-128)			
570-60366-2	MW-33	111			
570-60366-2 MS	MW-33	104			
570-60366-2 MSD	MW-33	115			
LCS 570-154421/2-A	Lab Control Sample	106			
LCSD 570-154421/3-A	Lab Control Sample Dup	112			
MB 570-154421/1-A	Method Blank	124			

Surrogate Legend

NBZ = Nitrobenzene-d5

Isotope Dilution Summary

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

Job ID: 570-60366-1

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 (15-150)
570-60366-2	MW-33	54
570-60366-2 MS	MW-33	47
570-60366-2 MSD	MW-33	55
LCS 570-154421/2-A	Lab Control Sample	53
LCSD 570-154421/3-A	Lab Control Sample Dup	57
MB 570-154421/1-A	Method Blank	58

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

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

Job ID: 570-60366-1

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

Lab Sample ID: MB 570-153912/8

Matrix: Water

Analysis Batch: 153912

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	0.26	ug/L			05/28/21 22:38	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			05/28/21 22:38	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			05/28/21 22:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			05/28/21 22:38	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			05/28/21 22:38	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			05/28/21 22:38	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			05/28/21 22:38	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			05/28/21 22:38	1
1,2,3-Trichlorobenzene	ND		0.50	0.28	ug/L			05/28/21 22:38	1
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			05/28/21 22:38	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			05/28/21 22:38	1
1,2,4-Trimethylbenzene	ND		0.50	0.29	ug/L			05/28/21 22:38	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			05/28/21 22:38	1
1,2-Dibromoethane	ND		0.50	0.14	ug/L			05/28/21 22:38	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			05/28/21 22:38	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			05/28/21 22:38	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			05/28/21 22:38	1
1,3,5-Trimethylbenzene	ND		0.50	0.28	ug/L			05/28/21 22:38	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			05/28/21 22:38	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			05/28/21 22:38	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			05/28/21 22:38	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			05/28/21 22:38	1
2-Butanone	ND		5.0	3.0	ug/L			05/28/21 22:38	1
2-Chlorotoluene	ND		0.50	0.31	ug/L			05/28/21 22:38	1
2-Hexanone	ND		6.0	4.3	ug/L			05/28/21 22:38	1
4-Chlorotoluene	ND		0.50	0.34	ug/L			05/28/21 22:38	1
4-Methyl-2-pentanone	ND		5.0	2.2	ug/L			05/28/21 22:38	1
Acetone	ND		8.0	4.0	ug/L			05/28/21 22:38	1
Benzene	ND		0.50	0.27	ug/L			05/28/21 22:38	1
Bromobenzene	ND		0.50	0.26	ug/L			05/28/21 22:38	1
Bromochloromethane	ND		1.0	0.35	ug/L			05/28/21 22:38	1
Bromodichloromethane	ND		0.50	0.22	ug/L			05/28/21 22:38	1
Bromoform	ND		0.50	0.39	ug/L			05/28/21 22:38	1
Bromomethane	ND		1.0	0.93	ug/L			05/28/21 22:38	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			05/28/21 22:38	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			05/28/21 22:38	1
Carbon disulfide	ND		1.0	0.24	ug/L			05/28/21 22:38	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			05/28/21 22:38	1
Chlorobenzene	ND		0.50	0.24	ug/L			05/28/21 22:38	1
Chloroethane	ND		0.50	0.44	ug/L			05/28/21 22:38	1
Chloroform	ND		0.50	0.28	ug/L			05/28/21 22:38	1
Chloromethane	ND		1.0	0.29	ug/L			05/28/21 22:38	1
Dibromochloromethane	ND		0.50	0.27	ug/L			05/28/21 22:38	1
Dibromomethane	ND		0.50	0.23	ug/L			05/28/21 22:38	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			05/28/21 22:38	1
Ethylbenzene	ND		0.50	0.36	ug/L			05/28/21 22:38	1
Isopropylbenzene	ND		0.50	0.38	ug/L			05/28/21 22:38	1
Methylene Chloride	ND		1.0	0.48	ug/L			05/28/21 22:38	1

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60366-1

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

Lab Sample ID: MB 570-153912/8

Matrix: Water

Analysis Batch: 153912

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	0.21	ug/L			05/28/21 22:38	1
Naphthalene	ND		1.0	0.32	ug/L			05/28/21 22:38	1
n-Butylbenzene	ND		0.50	0.29	ug/L			05/28/21 22:38	1
N-Propylbenzene	ND		0.50	0.39	ug/L			05/28/21 22:38	1
o-Xylene	ND		0.50	0.35	ug/L			05/28/21 22:38	1
m,p-Xylene	ND		1.0	0.78	ug/L			05/28/21 22:38	1
p-Isopropyltoluene	ND		0.50	0.28	ug/L			05/28/21 22:38	1
sec-Butylbenzene	ND		0.50	0.34	ug/L			05/28/21 22:38	1
Styrene	ND		0.50	0.28	ug/L			05/28/21 22:38	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			05/28/21 22:38	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			05/28/21 22:38	1
tert-Butylbenzene	ND		0.50	0.34	ug/L			05/28/21 22:38	1
Tetrachloroethene	ND		0.50	0.29	ug/L			05/28/21 22:38	1
Toluene	ND		0.50	0.33	ug/L			05/28/21 22:38	1
Trichloroethene	ND		0.50	0.29	ug/L			05/28/21 22:38	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			05/28/21 22:38	1
Vinyl acetate	ND		5.0	3.1	ug/L			05/28/21 22:38	1
Vinyl chloride	ND		0.50	0.40	ug/L			05/28/21 22:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		68 - 135		05/28/21 22:38	1
4-Bromofluorobenzene (Surr)	97		71 - 120		05/28/21 22:38	1
Dibromofluoromethane	100		80 - 120		05/28/21 22:38	1
Toluene-d8 (Surr)	99		80 - 120		05/28/21 22:38	1

Lab Sample ID: LCS 570-153912/4

Matrix: Water

Analysis Batch: 153912

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	10.15		ug/L		101	76 - 143
1,1,1-Trichloroethane	10.0	9.691		ug/L		97	75 - 128
1,1,2,2-Tetrachloroethane	10.0	10.72		ug/L		107	73 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.999		ug/L		100	50 - 120
1,1,2-Trichloroethane	10.0	10.57		ug/L		106	80 - 120
1,1-Dichloroethane	10.0	9.663		ug/L		97	76 - 120
1,1-Dichloroethene	10.0	9.597		ug/L		96	72 - 120
1,1-Dichloropropene	10.0	9.608		ug/L		96	76 - 120
1,2,3-Trichlorobenzene	10.0	9.688		ug/L		97	80 - 125
1,2,3-Trichloropropane	10.0	9.948		ug/L		99	66 - 131
1,2,4-Trichlorobenzene	10.0	9.405		ug/L		94	80 - 123
1,2,4-Trimethylbenzene	10.0	9.897		ug/L		99	78 - 125
1,2-Dibromo-3-Chloropropane	10.0	8.683		ug/L		87	77 - 120
1,2-Dibromoethane	10.0	10.79		ug/L		108	80 - 120
1,2-Dichlorobenzene	10.0	10.17		ug/L		102	79 - 123
1,2-Dichloroethane	10.0	10.64		ug/L		106	71 - 137
1,2-Dichloropropane	10.0	9.996		ug/L		100	80 - 120
1,3,5-Trimethylbenzene	10.0	10.29		ug/L		103	77 - 133

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60366-1

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

Lab Sample ID: LCS 570-153912/4

Matrix: Water

Analysis Batch: 153912

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	9.976		ug/L		100	79 - 123
1,3-Dichloropropane	10.0	10.75		ug/L		107	80 - 123
1,4-Dichlorobenzene	10.0	9.619		ug/L		96	75 - 123
2,2-Dichloropropane	10.0	9.355		ug/L		94	78 - 133
2-Butanone	10.0	11.07		ug/L		111	32 - 133
2-Chlorotoluene	10.0	9.970		ug/L		100	80 - 120
2-Hexanone	10.0	8.937		ug/L		89	57 - 127
4-Chlorotoluene	10.0	9.910		ug/L		99	78 - 120
4-Methyl-2-pentanone	10.0	9.735		ug/L		97	68 - 120
Acetone	10.0	9.973		ug/L		100	57 - 133
Benzene	10.0	9.878		ug/L		99	80 - 120
Bromobenzene	10.0	10.40		ug/L		104	80 - 124
Bromochloromethane	10.0	9.868		ug/L		99	76 - 125
Bromodichloromethane	10.0	10.77		ug/L		108	77 - 141
Bromoform	10.0	10.22		ug/L		102	46 - 178
Bromomethane	10.0	9.045		ug/L		90	52 - 162
cis-1,2-Dichloroethene	10.0	9.812		ug/L		98	76 - 122
cis-1,3-Dichloropropene	10.0	9.943		ug/L		99	80 - 122
Carbon disulfide	10.0	9.536		ug/L		95	66 - 125
Carbon tetrachloride	10.0	9.902		ug/L		99	69 - 145
Chlorobenzene	10.0	10.09		ug/L		101	80 - 120
Chloroethane	10.0	8.081		ug/L		81	73 - 139
Chloroform	10.0	9.948		ug/L		99	80 - 120
Chloromethane	10.0	8.030		ug/L		80	35 - 159
Dibromochloromethane	10.0	10.22		ug/L		102	63 - 151
Dibromomethane	10.0	10.57		ug/L		106	80 - 121
Dichlorodifluoromethane	10.0	8.069		ug/L		81	59 - 139
Ethylbenzene	10.0	10.24		ug/L		102	80 - 120
Isopropylbenzene	10.0	10.36		ug/L		104	80 - 124
Methylene Chloride	10.0	9.136		ug/L		91	70 - 120
Methyl-t-Butyl Ether (MTBE)	10.0	10.49		ug/L		105	72 - 120
Naphthalene	10.0	10.09		ug/L		101	75 - 120
n-Butylbenzene	10.0	9.692		ug/L		97	76 - 124
N-Propylbenzene	10.0	10.39		ug/L		104	80 - 122
o-Xylene	10.0	10.47		ug/L		105	80 - 122
m,p-Xylene	20.0	20.72		ug/L		104	80 - 122
p-Isopropyltoluene	10.0	9.784		ug/L		98	77 - 127
sec-Butylbenzene	10.0	9.848		ug/L		98	75 - 123
Styrene	10.0	10.43		ug/L		104	80 - 121
trans-1,2-Dichloroethene	10.0	9.897		ug/L		99	67 - 123
trans-1,3-Dichloropropene	10.0	10.33		ug/L		103	78 - 140
tert-Butylbenzene	10.0	9.485		ug/L		95	72 - 128
Tetrachloroethene	10.0	10.45		ug/L		104	80 - 128
Toluene	10.0	10.21		ug/L		102	80 - 120
Trichloroethene	10.0	9.791		ug/L		98	80 - 123
Trichlorofluoromethane	10.0	8.978		ug/L		90	64 - 168
Vinyl acetate	10.0	10.62		ug/L		106	75 - 144
Vinyl chloride	10.0	8.140		ug/L		81	74 - 130

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60366-1

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

Lab Sample ID: LCS 570-153912/4

Matrix: Water

Analysis Batch: 153912

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		68 - 135
4-Bromofluorobenzene (Surr)	102		71 - 120
Dibromofluoromethane	100		80 - 120
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: LCSD 570-153912/5

Matrix: Water

Analysis Batch: 153912

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	10.51		ug/L		105	76 - 143	4	20
1,1,1-Trichloroethane	10.0	10.57		ug/L		106	75 - 128	9	20
1,1,2,2-Tetrachloroethane	10.0	10.86		ug/L		109	73 - 126	1	21
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.94		ug/L		109	50 - 120	9	20
1,1,2-Trichloroethane	10.0	10.72		ug/L		107	80 - 120	1	20
1,1-Dichloroethane	10.0	10.19		ug/L		102	76 - 120	5	20
1,1-Dichloroethene	10.0	10.42		ug/L		104	72 - 120	8	20
1,1-Dichloropropene	10.0	10.68		ug/L		107	76 - 120	11	20
1,2,3-Trichlorobenzene	10.0	10.18		ug/L		102	80 - 125	5	22
1,2,3-Trichloropropane	10.0	9.975		ug/L		100	66 - 131	0	20
1,2,4-Trichlorobenzene	10.0	9.909		ug/L		99	80 - 123	5	20
1,2,4-Trimethylbenzene	10.0	10.52		ug/L		105	78 - 125	6	22
1,2-Dibromo-3-Chloropropane	10.0	8.915		ug/L		89	77 - 120	3	21
1,2-Dibromoethane	10.0	10.86		ug/L		109	80 - 120	1	20
1,2-Dichlorobenzene	10.0	10.59		ug/L		106	79 - 123	4	20
1,2-Dichloroethane	10.0	10.75		ug/L		107	71 - 137	1	20
1,2-Dichloropropane	10.0	10.39		ug/L		104	80 - 120	4	20
1,3,5-Trimethylbenzene	10.0	10.76		ug/L		108	77 - 133	4	20
1,3-Dichlorobenzene	10.0	10.44		ug/L		104	79 - 123	5	20
1,3-Dichloropropane	10.0	10.86		ug/L		109	80 - 123	1	20
1,4-Dichlorobenzene	10.0	10.18		ug/L		102	75 - 123	6	22
2,2-Dichloropropane	10.0	9.912		ug/L		99	78 - 133	6	20
2-Butanone	10.0	8.683		ug/L		87	32 - 133	24	26
2-Chlorotoluene	10.0	10.34		ug/L		103	80 - 120	4	20
2-Hexanone	10.0	8.731		ug/L		87	57 - 127	2	21
4-Chlorotoluene	10.0	10.44		ug/L		104	78 - 120	5	21
4-Methyl-2-pentanone	10.0	9.539		ug/L		95	68 - 120	2	20
Acetone	10.0	9.600		ug/L		96	57 - 133	4	28
Benzene	10.0	10.40		ug/L		104	80 - 120	5	20
Bromobenzene	10.0	10.68		ug/L		107	80 - 124	3	20
Bromochloromethane	10.0	10.07		ug/L		101	76 - 125	2	20
Bromodichloromethane	10.0	11.14		ug/L		111	77 - 141	3	20
Bromoform	10.0	10.85		ug/L		109	46 - 178	6	23
Bromomethane	10.0	9.155		ug/L		92	52 - 162	1	20
cis-1,2-Dichloroethene	10.0	10.44		ug/L		104	76 - 122	6	20
cis-1,3-Dichloropropene	10.0	10.30		ug/L		103	80 - 122	3	20
Carbon disulfide	10.0	10.26		ug/L		103	66 - 125	7	20
Carbon tetrachloride	10.0	11.13		ug/L		111	69 - 145	12	20

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60366-1

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

Lab Sample ID: LCSD 570-153912/5

Matrix: Water

Analysis Batch: 153912

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	10.40		ug/L		104	80 - 120	3	20
Chloroethane	10.0	8.800		ug/L		88	73 - 139	9	20
Chloroform	10.0	10.46		ug/L		105	80 - 120	5	20
Chloromethane	10.0	8.765		ug/L		88	35 - 159	9	20
Dibromochloromethane	10.0	10.52		ug/L		105	63 - 151	3	20
Dibromomethane	10.0	10.74		ug/L		107	80 - 121	2	20
Dichlorodifluoromethane	10.0	8.707		ug/L		87	59 - 139	8	20
Ethylbenzene	10.0	10.74		ug/L		107	80 - 120	5	20
Isopropylbenzene	10.0	10.86		ug/L		109	80 - 124	5	20
Methylene Chloride	10.0	9.538		ug/L		95	70 - 120	4	20
Methyl-t-Butyl Ether (MTBE)	10.0	10.84		ug/L		108	72 - 120	3	20
Naphthalene	10.0	10.60		ug/L		106	75 - 120	5	22
n-Butylbenzene	10.0	10.32		ug/L		103	76 - 124	6	23
N-Propylbenzene	10.0	11.08		ug/L		111	80 - 122	6	20
o-Xylene	10.0	10.66		ug/L		107	80 - 122	2	20
m,p-Xylene	20.0	21.80		ug/L		109	80 - 122	5	20
p-Isopropyltoluene	10.0	10.41		ug/L		104	77 - 127	6	21
sec-Butylbenzene	10.0	10.72		ug/L		107	75 - 123	8	21
Styrene	10.0	10.77		ug/L		108	80 - 121	3	20
trans-1,2-Dichloroethene	10.0	10.67		ug/L		107	67 - 123	8	20
trans-1,3-Dichloropropene	10.0	10.46		ug/L		105	78 - 140	1	20
tert-Butylbenzene	10.0	10.29		ug/L		103	72 - 128	8	22
Tetrachloroethene	10.0	11.08		ug/L		111	80 - 128	6	20
Toluene	10.0	10.63		ug/L		106	80 - 120	4	20
Trichloroethene	10.0	10.73		ug/L		107	80 - 123	9	20
Trichlorofluoromethane	10.0	10.04		ug/L		100	64 - 168	11	20
Vinyl acetate	10.0	10.90		ug/L		109	75 - 144	3	25
Vinyl chloride	10.0	9.030		ug/L		90	74 - 130	10	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		68 - 135
4-Bromofluorobenzene (Surr)	101		71 - 120
Dibromofluoromethane	101		80 - 120
Toluene-d8 (Surr)	100		80 - 120

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

Lab Sample ID: MB 570-154421/1-A

Matrix: Water

Analysis Batch: 154538

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 154421

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		06/02/21 07:14	06/02/21 21:29	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	58		15 - 150				06/02/21 07:14	06/02/21 21:29	1

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60366-1

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

Lab Sample ID: MB 570-154421/1-A
Matrix: Water
Analysis Batch: 154538

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 154421

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	%Recovery	Qualifier		06/02/21 07:14	06/02/21 21:29	1
	124		46 - 128			

Lab Sample ID: LCS 570-154421/2-A
Matrix: Water
Analysis Batch: 154538

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 154421

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	20.95		ug/L		105	57 - 136
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	53		15 - 150				
Surrogate	%Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5	106		46 - 128				

Lab Sample ID: LCSD 570-154421/3-A
Matrix: Water
Analysis Batch: 154538

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 154421

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	20.0	21.88		ug/L		109	57 - 136	4	20
Isotope Dilution	%Recovery	LCSD Qualifier	Limits						
1,4-Dioxane-d8	57		15 - 150						
Surrogate	%Recovery	LCSD Qualifier	Limits						
Nitrobenzene-d5	112		46 - 128						

Lab Sample ID: 570-60366-2 MS
Matrix: Water
Analysis Batch: 154538

Client Sample ID: MW-33
Prep Type: Total/NA
Prep Batch: 154421

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	ND		20.0	22.18		ug/L		111	45 - 139
Isotope Dilution	%Recovery	MS Qualifier	Limits						
1,4-Dioxane-d8	47		15 - 150						
Surrogate	%Recovery	MS Qualifier	Limits						
Nitrobenzene-d5	104		46 - 128						

QC Sample Results

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

Job ID: 570-60366-1

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

Lab Sample ID: 570-60366-2 MSD

Matrix: Water

Analysis Batch: 154538

Client Sample ID: MW-33

Prep Type: Total/NA

Prep Batch: 154421

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	22.12		ug/L		111	45 - 139	0	17
	MSD	MSD									
Isotope Dilution	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8	55		15 - 150								
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5	115		46 - 128								

QC Association Summary

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

Job ID: 570-60366-1

GC/MS VOA

Analysis Batch: 153912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60366-1	TB-05272021B	Total/NA	Water	8260B	
570-60366-2	MW-33	Total/NA	Water	8260B	
MB 570-153912/8	Method Blank	Total/NA	Water	8260B	
LCS 570-153912/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-153912/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 154421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60366-2	MW-33	Total/NA	Water	3510C	
MB 570-154421/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-154421/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-154421/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-60366-2 MS	MW-33	Total/NA	Water	3510C	
570-60366-2 MSD	MW-33	Total/NA	Water	3510C	

Analysis Batch: 154538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60366-2	MW-33	Total/NA	Water	8270C SIM ID	154421
MB 570-154421/1-A	Method Blank	Total/NA	Water	8270C SIM ID	154421
LCS 570-154421/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	154421
LCSD 570-154421/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	154421
570-60366-2 MS	MW-33	Total/NA	Water	8270C SIM ID	154421
570-60366-2 MSD	MW-33	Total/NA	Water	8270C SIM ID	154421

Lab Chronicle

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

Job ID: 570-60366-1

Client Sample ID: TB-05272021B

Lab Sample ID: 570-60366-1

Date Collected: 05/27/21 08:00

Matrix: Water

Date Received: 05/27/21 16:28

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	153912	05/28/21 23:05	A1W	ECL 2
Instrument ID: GCMSL										

Client Sample ID: MW-33

Lab Sample ID: 570-60366-2

Date Collected: 05/27/21 14:05

Matrix: Water

Date Received: 05/27/21 16:28

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	153912	05/29/21 00:26	A1W	ECL 2
Instrument ID: GCMSL										
Total/NA	Prep	3510C			100.0 mL	10 mL	154421	06/02/21 07:14	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			154538	06/02/21 22:42	EM5C	ECL 1
Instrument ID: GCMSDDD										

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

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

Job ID: 570-60366-1

Laboratory: Eurofins Calscience LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	CA300001	01-30-22

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Method Summary

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

Job ID: 570-60366-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

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

Job ID: 570-60366-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-60366-1	TB-05272021B	Water	05/27/21 08:00	05/27/21 16:28	
570-60366-2	MW-33	Water	05/27/21 14:05	05/27/21 16:28	

Login Sample Receipt Checklist

Client: Hargis + Associates, Inc.

Job Number: 570-60366-1

Login Number: 60366

List Number: 1

Creator: Le, Danny

List Source: Eurofins Calscience LLC

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 LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-60241-1
Client Project/Site: Raytheon / 532.30
Revision: 1

For:
Hargis + Associates, Inc.
La Jolla Gateway
9171 Towne Centre Drive
Suite 375
San Diego, California 92122

Attn: Julie Kelly

Virendra R Patel

Authorized for release by:
6/8/2021 10:41:40 AM

Virendra Patel, Project Manager I
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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: 570-60241-1

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
S1+	Surrogate recovery exceeds control limits, high biased.

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: 570-60241-1

Job ID: 570-60241-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative 570-60241-1

Comments

No additional comments.

Revision

The report being provided is a revision of the original report sent on 6/8/2021. The report (revision 1) is being revised due to: Due to an error during sample intake process, the sample containers were reversed during the labeling process for samples MW-41 and MW-30B. We have reversed the IDs in the PDF and EDD files..

Receipt

The samples were received on 5/26/2021 5:50 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 3.5° C.

Receipt Exceptions

Due to an error during sample intake process, the sample containers were reversed during the labeling process for samples MW-41 and MW-30B. We have reversed the IDs in the PDF and EDD files.

GC/MS VOA

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-154065.

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-153915.

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: Surrogate recovery for the following sample was outside the upper control limit: MW-41 (570-60241-3). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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: 570-60241-1

Client Sample ID: TB-05252021B

Lab Sample ID: 570-60241-1

No Detections.

Client Sample ID: MW-30B

Lab Sample ID: 570-60241-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	1.2		0.50	0.25	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	18		0.50	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.5		0.50	0.30	ug/L	1		8260B	Total/NA
Chloroform	0.37	J	0.50	0.28	ug/L	1		8260B	Total/NA
Trichloroethene - DL	100		1.0	0.58	ug/L	2		8260B	Total/NA
1,4-Dioxane	1.2		0.50	0.34	ug/L	1		8270C SIM ID	Total/NA

Client Sample ID: MW-41

Lab Sample ID: 570-60241-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.50		0.50	0.28	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60241-1

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

Client Sample ID: TB-05252021B

Date Collected: 05/25/21 08:00

Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			05/29/21 00:00	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			05/29/21 00:00	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			05/29/21 00:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			05/29/21 00:00	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			05/29/21 00:00	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			05/29/21 00:00	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			05/29/21 00:00	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			05/29/21 00:00	1
1,2,3-Trichlorobenzene	ND		0.50	0.28	ug/L			05/29/21 00:00	1
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			05/29/21 00:00	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			05/29/21 00:00	1
1,2,4-Trimethylbenzene	ND		0.50	0.29	ug/L			05/29/21 00:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			05/29/21 00:00	1
1,2-Dibromoethane	ND		0.50	0.14	ug/L			05/29/21 00:00	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			05/29/21 00:00	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			05/29/21 00:00	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			05/29/21 00:00	1
1,3,5-Trimethylbenzene	ND		0.50	0.28	ug/L			05/29/21 00:00	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			05/29/21 00:00	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			05/29/21 00:00	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			05/29/21 00:00	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			05/29/21 00:00	1
2-Butanone	ND		5.0	3.0	ug/L			05/29/21 00:00	1
2-Chlorotoluene	ND		0.50	0.31	ug/L			05/29/21 00:00	1
2-Hexanone	ND		6.0	4.3	ug/L			05/29/21 00:00	1
4-Chlorotoluene	ND		0.50	0.34	ug/L			05/29/21 00:00	1
4-Methyl-2-pentanone	ND		5.0	2.2	ug/L			05/29/21 00:00	1
Acetone	ND		8.0	4.0	ug/L			05/29/21 00:00	1
Benzene	ND		0.50	0.27	ug/L			05/29/21 00:00	1
Bromobenzene	ND		0.50	0.26	ug/L			05/29/21 00:00	1
Bromochloromethane	ND		1.0	0.35	ug/L			05/29/21 00:00	1
Bromodichloromethane	ND		0.50	0.22	ug/L			05/29/21 00:00	1
Bromoform	ND		0.50	0.39	ug/L			05/29/21 00:00	1
Bromomethane	ND		1.0	0.93	ug/L			05/29/21 00:00	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			05/29/21 00:00	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			05/29/21 00:00	1
Carbon disulfide	ND		1.0	0.24	ug/L			05/29/21 00:00	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			05/29/21 00:00	1
Chlorobenzene	ND		0.50	0.24	ug/L			05/29/21 00:00	1
Chloroethane	ND		0.50	0.44	ug/L			05/29/21 00:00	1
Chloroform	ND		0.50	0.28	ug/L			05/29/21 00:00	1
Chloromethane	ND		1.0	0.29	ug/L			05/29/21 00:00	1
Dibromochloromethane	ND		0.50	0.27	ug/L			05/29/21 00:00	1
Dibromomethane	ND		0.50	0.23	ug/L			05/29/21 00:00	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			05/29/21 00:00	1
Ethylbenzene	ND		0.50	0.36	ug/L			05/29/21 00:00	1
Isopropylbenzene	ND		0.50	0.38	ug/L			05/29/21 00:00	1
Methylene Chloride	ND		1.0	0.48	ug/L			05/29/21 00:00	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.21	ug/L			05/29/21 00:00	1

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60241-1

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

Client Sample ID: TB-05252021B

Date Collected: 05/25/21 08:00

Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			05/29/21 00:00	1
n-Butylbenzene	ND		0.50	0.29	ug/L			05/29/21 00:00	1
N-Propylbenzene	ND		0.50	0.39	ug/L			05/29/21 00:00	1
o-Xylene	ND		0.50	0.35	ug/L			05/29/21 00:00	1
m,p-Xylene	ND		1.0	0.78	ug/L			05/29/21 00:00	1
p-Isopropyltoluene	ND		0.50	0.28	ug/L			05/29/21 00:00	1
sec-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 00:00	1
Styrene	ND		0.50	0.28	ug/L			05/29/21 00:00	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			05/29/21 00:00	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			05/29/21 00:00	1
tert-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 00:00	1
Tetrachloroethene	ND		0.50	0.29	ug/L			05/29/21 00:00	1
Toluene	ND		0.50	0.33	ug/L			05/29/21 00:00	1
Trichloroethene	ND		0.50	0.29	ug/L			05/29/21 00:00	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			05/29/21 00:00	1
Vinyl acetate	ND		5.0	3.1	ug/L			05/29/21 00:00	1
Vinyl chloride	ND		0.50	0.40	ug/L			05/29/21 00:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		68 - 135		05/29/21 00:00	1
4-Bromofluorobenzene (Surr)	97		71 - 120		05/29/21 00:00	1
Dibromofluoromethane	96		80 - 120		05/29/21 00:00	1
Toluene-d8 (Surr)	104		80 - 120		05/29/21 00:00	1

Client Sample ID: MW-30B

Date Collected: 05/25/21 09:40

Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			05/29/21 05:56	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			05/29/21 05:56	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			05/29/21 05:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.2		0.50	0.25	ug/L			05/29/21 05:56	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			05/29/21 05:56	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			05/29/21 05:56	1
1,1-Dichloroethene	18		0.50	0.39	ug/L			05/29/21 05:56	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			05/29/21 05:56	1
1,2,3-Trichlorobenzene	ND		0.50	0.28	ug/L			05/29/21 05:56	1
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			05/29/21 05:56	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			05/29/21 05:56	1
1,2,4-Trimethylbenzene	ND		0.50	0.29	ug/L			05/29/21 05:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			05/29/21 05:56	1
1,2-Dibromoethane	ND		0.50	0.14	ug/L			05/29/21 05:56	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			05/29/21 05:56	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			05/29/21 05:56	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			05/29/21 05:56	1
1,3,5-Trimethylbenzene	ND		0.50	0.28	ug/L			05/29/21 05:56	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			05/29/21 05:56	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			05/29/21 05:56	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			05/29/21 05:56	1

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60241-1

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

Client Sample ID: MW-30B
Date Collected: 05/25/21 09:40
Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		0.50	0.40	ug/L			05/29/21 05:56	1
2-Butanone	ND		5.0	3.0	ug/L			05/29/21 05:56	1
2-Chlorotoluene	ND		0.50	0.31	ug/L			05/29/21 05:56	1
2-Hexanone	ND		6.0	4.3	ug/L			05/29/21 05:56	1
4-Chlorotoluene	ND		0.50	0.34	ug/L			05/29/21 05:56	1
4-Methyl-2-pentanone	ND		5.0	2.2	ug/L			05/29/21 05:56	1
Acetone	ND		8.0	4.0	ug/L			05/29/21 05:56	1
Benzene	ND		0.50	0.27	ug/L			05/29/21 05:56	1
Bromobenzene	ND		0.50	0.26	ug/L			05/29/21 05:56	1
Bromochloromethane	ND		1.0	0.35	ug/L			05/29/21 05:56	1
Bromodichloromethane	ND		0.50	0.22	ug/L			05/29/21 05:56	1
Bromoform	ND		0.50	0.39	ug/L			05/29/21 05:56	1
Bromomethane	ND		1.0	0.93	ug/L			05/29/21 05:56	1
cis-1,2-Dichloroethene	4.5		0.50	0.30	ug/L			05/29/21 05:56	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			05/29/21 05:56	1
Carbon disulfide	ND		1.0	0.24	ug/L			05/29/21 05:56	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			05/29/21 05:56	1
Chlorobenzene	ND		0.50	0.24	ug/L			05/29/21 05:56	1
Chloroethane	ND		0.50	0.44	ug/L			05/29/21 05:56	1
Chloroform	0.37	J	0.50	0.28	ug/L			05/29/21 05:56	1
Chloromethane	ND		1.0	0.29	ug/L			05/29/21 05:56	1
Dibromochloromethane	ND		0.50	0.27	ug/L			05/29/21 05:56	1
Dibromomethane	ND		0.50	0.23	ug/L			05/29/21 05:56	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			05/29/21 05:56	1
Ethylbenzene	ND		0.50	0.36	ug/L			05/29/21 05:56	1
Isopropylbenzene	ND		0.50	0.38	ug/L			05/29/21 05:56	1
Methylene Chloride	ND		1.0	0.48	ug/L			05/29/21 05:56	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.21	ug/L			05/29/21 05:56	1
Naphthalene	ND		1.0	0.32	ug/L			05/29/21 05:56	1
n-Butylbenzene	ND		0.50	0.29	ug/L			05/29/21 05:56	1
N-Propylbenzene	ND		0.50	0.39	ug/L			05/29/21 05:56	1
o-Xylene	ND		0.50	0.35	ug/L			05/29/21 05:56	1
m,p-Xylene	ND		1.0	0.78	ug/L			05/29/21 05:56	1
p-Isopropyltoluene	ND		0.50	0.28	ug/L			05/29/21 05:56	1
sec-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 05:56	1
Styrene	ND		0.50	0.28	ug/L			05/29/21 05:56	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			05/29/21 05:56	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			05/29/21 05:56	1
tert-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 05:56	1
Tetrachloroethene	ND		0.50	0.29	ug/L			05/29/21 05:56	1
Toluene	ND		0.50	0.33	ug/L			05/29/21 05:56	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			05/29/21 05:56	1
Vinyl acetate	ND		5.0	3.1	ug/L			05/29/21 05:56	1
Vinyl chloride	ND		0.50	0.40	ug/L			05/29/21 05:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		68 - 135		05/29/21 05:56	1
4-Bromofluorobenzene (Surr)	98		71 - 120		05/29/21 05:56	1
Dibromofluoromethane	91		80 - 120		05/29/21 05:56	1
Toluene-d8 (Surr)	107		80 - 120		05/29/21 05:56	1

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60241-1

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

Client Sample ID: MW-41
Date Collected: 05/26/21 16:10
Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.26	ug/L			05/29/21 06:25	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			05/29/21 06:25	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			05/29/21 06:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			05/29/21 06:25	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			05/29/21 06:25	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			05/29/21 06:25	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			05/29/21 06:25	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			05/29/21 06:25	1
1,2,3-Trichlorobenzene	ND		0.50	0.28	ug/L			05/29/21 06:25	1
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			05/29/21 06:25	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			05/29/21 06:25	1
1,2,4-Trimethylbenzene	ND		0.50	0.29	ug/L			05/29/21 06:25	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			05/29/21 06:25	1
1,2-Dibromoethane	ND		0.50	0.14	ug/L			05/29/21 06:25	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			05/29/21 06:25	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			05/29/21 06:25	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			05/29/21 06:25	1
1,3,5-Trimethylbenzene	ND		0.50	0.28	ug/L			05/29/21 06:25	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			05/29/21 06:25	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			05/29/21 06:25	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			05/29/21 06:25	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			05/29/21 06:25	1
2-Butanone	ND		5.0	3.0	ug/L			05/29/21 06:25	1
2-Chlorotoluene	ND		0.50	0.31	ug/L			05/29/21 06:25	1
2-Hexanone	ND		6.0	4.3	ug/L			05/29/21 06:25	1
4-Chlorotoluene	ND		0.50	0.34	ug/L			05/29/21 06:25	1
4-Methyl-2-pentanone	ND		5.0	2.2	ug/L			05/29/21 06:25	1
Acetone	ND		8.0	4.0	ug/L			05/29/21 06:25	1
Benzene	ND		0.50	0.27	ug/L			05/29/21 06:25	1
Bromobenzene	ND		0.50	0.26	ug/L			05/29/21 06:25	1
Bromochloromethane	ND		1.0	0.35	ug/L			05/29/21 06:25	1
Bromodichloromethane	ND		0.50	0.22	ug/L			05/29/21 06:25	1
Bromoform	ND		0.50	0.39	ug/L			05/29/21 06:25	1
Bromomethane	ND		1.0	0.93	ug/L			05/29/21 06:25	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			05/29/21 06:25	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			05/29/21 06:25	1
Carbon disulfide	ND		1.0	0.24	ug/L			05/29/21 06:25	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			05/29/21 06:25	1
Chlorobenzene	ND		0.50	0.24	ug/L			05/29/21 06:25	1
Chloroethane	ND		0.50	0.44	ug/L			05/29/21 06:25	1
Chloroform	0.50		0.50	0.28	ug/L			05/29/21 06:25	1
Chloromethane	ND		1.0	0.29	ug/L			05/29/21 06:25	1
Dibromochloromethane	ND		0.50	0.27	ug/L			05/29/21 06:25	1
Dibromomethane	ND		0.50	0.23	ug/L			05/29/21 06:25	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			05/29/21 06:25	1
Ethylbenzene	ND		0.50	0.36	ug/L			05/29/21 06:25	1
Isopropylbenzene	ND		0.50	0.38	ug/L			05/29/21 06:25	1
Methylene Chloride	ND		1.0	0.48	ug/L			05/29/21 06:25	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.21	ug/L			05/29/21 06:25	1

Eurofins Calscience LLC

Client Sample Results

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

Job ID: 570-60241-1

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

Client Sample ID: MW-41

Date Collected: 05/26/21 16:10

Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.32	ug/L			05/29/21 06:25	1
n-Butylbenzene	ND		0.50	0.29	ug/L			05/29/21 06:25	1
N-Propylbenzene	ND		0.50	0.39	ug/L			05/29/21 06:25	1
o-Xylene	ND		0.50	0.35	ug/L			05/29/21 06:25	1
m,p-Xylene	ND		1.0	0.78	ug/L			05/29/21 06:25	1
p-Isopropyltoluene	ND		0.50	0.28	ug/L			05/29/21 06:25	1
sec-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 06:25	1
Styrene	ND		0.50	0.28	ug/L			05/29/21 06:25	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			05/29/21 06:25	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			05/29/21 06:25	1
tert-Butylbenzene	ND		0.50	0.34	ug/L			05/29/21 06:25	1
Tetrachloroethene	ND		0.50	0.29	ug/L			05/29/21 06:25	1
Toluene	ND		0.50	0.33	ug/L			05/29/21 06:25	1
Trichloroethene	ND		0.50	0.29	ug/L			05/29/21 06:25	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			05/29/21 06:25	1
Vinyl acetate	ND		5.0	3.1	ug/L			05/29/21 06:25	1
Vinyl chloride	ND		0.50	0.40	ug/L			05/29/21 06:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		68 - 135		05/29/21 06:25	1
4-Bromofluorobenzene (Surr)	98		71 - 120		05/29/21 06:25	1
Dibromofluoromethane	91		80 - 120		05/29/21 06:25	1
Toluene-d8 (Surr)	101		80 - 120		05/29/21 06:25	1

Client Sample Results

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

Job ID: 570-60241-1

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

Client Sample ID: MW-30B
Date Collected: 05/25/21 09:40
Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	100		1.0	0.58	ug/L			05/29/21 23:41	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		68 - 135					05/29/21 23:41	2
4-Bromofluorobenzene (Surr)	95		71 - 120					05/29/21 23:41	2
Dibromofluoromethane	104		80 - 120					05/29/21 23:41	2
Toluene-d8 (Surr)	106		80 - 120					05/29/21 23:41	2

Client Sample Results

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

Job ID: 570-60241-1

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

Client Sample ID: MW-30B
Date Collected: 05/25/21 09:40
Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.2		0.50	0.34	ug/L		05/29/21 09:17	06/02/21 05:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	50		15 - 150				05/29/21 09:17	06/02/21 05:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	113		46 - 128				05/29/21 09:17	06/02/21 05:13	1

Client Sample ID: MW-41
Date Collected: 05/26/21 16:10
Date Received: 05/26/21 17:50

Lab Sample ID: 570-60241-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		05/29/21 09:17	06/04/21 02:40	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	58		15 - 150				05/29/21 09:17	06/04/21 02:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	132	S1+	46 - 128				05/29/21 09:17	06/04/21 02:40	1

Surrogate Summary

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

Job ID: 570-60241-1

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 (68-135)	BFB (71-120)	DBFM (80-120)	TOL (80-120)
570-60241-1	TB-05252021B	99	97	96	104
570-60241-2	MW-30B	93	98	91	107
570-60241-2 - DL	MW-30B	107	95	104	106
570-60241-3	MW-41	91	98	91	101
LCS 570-153915/4	Lab Control Sample	100	107	93	102
LCS 570-154065/4	Lab Control Sample	106	99	103	99
LCSD 570-153915/5	Lab Control Sample Dup	99	106	92	101
LCSD 570-154065/5	Lab Control Sample Dup	105	98	107	100
MB 570-153915/8	Method Blank	97	96	90	106
MB 570-154065/8	Method Blank	105	100	105	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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		NBZ (46-128)			
570-60241-2	MW-30B	113			
570-60241-2 MS	MW-30B	123			
570-60241-2 MSD	MW-30B	115			
570-60241-3	MW-41	132 S1+			
LCS 570-153982/2-A	Lab Control Sample	120			
LCSD 570-153982/3-A	Lab Control Sample Dup	111			
MB 570-153982/1-A	Method Blank	114			

Surrogate Legend

NBZ = Nitrobenzene-d5

Isotope Dilution Summary

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

Job ID: 570-60241-1

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 (15-150)
570-60241-2	MW-30B	50
570-60241-2 MS	MW-30B	44
570-60241-2 MSD	MW-30B	54
570-60241-3	MW-41	58
LCS 570-153982/2-A	Lab Control Sample	46
LCSD 570-153982/3-A	Lab Control Sample Dup	64
MB 570-153982/1-A	Method Blank	52

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

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

Job ID: 570-60241-1

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

Lab Sample ID: MB 570-153915/8

Matrix: Water

Analysis Batch: 153915

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	0.26	ug/L			05/28/21 23:30	1
1,1,1-Trichloroethane	ND		0.50	0.27	ug/L			05/28/21 23:30	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.19	ug/L			05/28/21 23:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50	0.25	ug/L			05/28/21 23:30	1
1,1,2-Trichloroethane	ND		0.50	0.085	ug/L			05/28/21 23:30	1
1,1-Dichloroethane	ND		0.50	0.35	ug/L			05/28/21 23:30	1
1,1-Dichloroethene	ND		0.50	0.39	ug/L			05/28/21 23:30	1
1,1-Dichloropropene	ND		0.50	0.24	ug/L			05/28/21 23:30	1
1,2,3-Trichlorobenzene	ND		0.50	0.28	ug/L			05/28/21 23:30	1
1,2,3-Trichloropropane	ND		0.50	0.32	ug/L			05/28/21 23:30	1
1,2,4-Trichlorobenzene	ND		0.50	0.38	ug/L			05/28/21 23:30	1
1,2,4-Trimethylbenzene	ND		0.50	0.29	ug/L			05/28/21 23:30	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.64	ug/L			05/28/21 23:30	1
1,2-Dibromoethane	ND		0.50	0.14	ug/L			05/28/21 23:30	1
1,2-Dichlorobenzene	ND		0.50	0.23	ug/L			05/28/21 23:30	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			05/28/21 23:30	1
1,2-Dichloropropane	ND		0.50	0.24	ug/L			05/28/21 23:30	1
1,3,5-Trimethylbenzene	ND		0.50	0.28	ug/L			05/28/21 23:30	1
1,3-Dichlorobenzene	ND		0.50	0.26	ug/L			05/28/21 23:30	1
1,3-Dichloropropane	ND		0.50	0.20	ug/L			05/28/21 23:30	1
1,4-Dichlorobenzene	ND		0.50	0.22	ug/L			05/28/21 23:30	1
2,2-Dichloropropane	ND		0.50	0.40	ug/L			05/28/21 23:30	1
2-Butanone	ND		5.0	3.0	ug/L			05/28/21 23:30	1
2-Chlorotoluene	ND		0.50	0.31	ug/L			05/28/21 23:30	1
2-Hexanone	ND		6.0	4.3	ug/L			05/28/21 23:30	1
4-Chlorotoluene	ND		0.50	0.34	ug/L			05/28/21 23:30	1
4-Methyl-2-pentanone	ND		5.0	2.2	ug/L			05/28/21 23:30	1
Acetone	ND		8.0	4.0	ug/L			05/28/21 23:30	1
Benzene	ND		0.50	0.27	ug/L			05/28/21 23:30	1
Bromobenzene	ND		0.50	0.26	ug/L			05/28/21 23:30	1
Bromochloromethane	ND		1.0	0.35	ug/L			05/28/21 23:30	1
Bromodichloromethane	ND		0.50	0.22	ug/L			05/28/21 23:30	1
Bromoform	ND		0.50	0.39	ug/L			05/28/21 23:30	1
Bromomethane	ND		1.0	0.93	ug/L			05/28/21 23:30	1
cis-1,2-Dichloroethene	ND		0.50	0.30	ug/L			05/28/21 23:30	1
cis-1,3-Dichloropropene	ND		0.50	0.19	ug/L			05/28/21 23:30	1
Carbon disulfide	ND		1.0	0.24	ug/L			05/28/21 23:30	1
Carbon tetrachloride	ND		0.50	0.27	ug/L			05/28/21 23:30	1
Chlorobenzene	ND		0.50	0.24	ug/L			05/28/21 23:30	1
Chloroethane	ND		0.50	0.44	ug/L			05/28/21 23:30	1
Chloroform	ND		0.50	0.28	ug/L			05/28/21 23:30	1
Chloromethane	ND		1.0	0.29	ug/L			05/28/21 23:30	1
Dibromochloromethane	ND		0.50	0.27	ug/L			05/28/21 23:30	1
Dibromomethane	ND		0.50	0.23	ug/L			05/28/21 23:30	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			05/28/21 23:30	1
Ethylbenzene	ND		0.50	0.36	ug/L			05/28/21 23:30	1
Isopropylbenzene	ND		0.50	0.38	ug/L			05/28/21 23:30	1
Methylene Chloride	ND		1.0	0.48	ug/L			05/28/21 23:30	1

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60241-1

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

Lab Sample ID: MB 570-153915/8

Matrix: Water

Analysis Batch: 153915

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	0.21	ug/L			05/28/21 23:30	1
Naphthalene	ND		1.0	0.32	ug/L			05/28/21 23:30	1
n-Butylbenzene	ND		0.50	0.29	ug/L			05/28/21 23:30	1
N-Propylbenzene	ND		0.50	0.39	ug/L			05/28/21 23:30	1
o-Xylene	ND		0.50	0.35	ug/L			05/28/21 23:30	1
m,p-Xylene	ND		1.0	0.78	ug/L			05/28/21 23:30	1
p-Isopropyltoluene	ND		0.50	0.28	ug/L			05/28/21 23:30	1
sec-Butylbenzene	ND		0.50	0.34	ug/L			05/28/21 23:30	1
Styrene	ND		0.50	0.28	ug/L			05/28/21 23:30	1
trans-1,2-Dichloroethene	ND		0.50	0.36	ug/L			05/28/21 23:30	1
trans-1,3-Dichloropropene	ND		0.50	0.17	ug/L			05/28/21 23:30	1
tert-Butylbenzene	ND		0.50	0.34	ug/L			05/28/21 23:30	1
Tetrachloroethene	ND		0.50	0.29	ug/L			05/28/21 23:30	1
Toluene	ND		0.50	0.33	ug/L			05/28/21 23:30	1
Trichloroethene	ND		0.50	0.29	ug/L			05/28/21 23:30	1
Trichlorofluoromethane	ND		0.50	0.30	ug/L			05/28/21 23:30	1
Vinyl acetate	ND		5.0	3.1	ug/L			05/28/21 23:30	1
Vinyl chloride	ND		0.50	0.40	ug/L			05/28/21 23:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		68 - 135		05/28/21 23:30	1
4-Bromofluorobenzene (Surr)	96		71 - 120		05/28/21 23:30	1
Dibromofluoromethane	90		80 - 120		05/28/21 23:30	1
Toluene-d8 (Surr)	106		80 - 120		05/28/21 23:30	1

Lab Sample ID: LCS 570-153915/4

Matrix: Water

Analysis Batch: 153915

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	10.30		ug/L		103	76 - 143
1,1,1-Trichloroethane	10.0	9.026		ug/L		90	75 - 128
1,1,2,2-Tetrachloroethane	10.0	9.489		ug/L		95	73 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.789		ug/L		88	50 - 120
1,1,2-Trichloroethane	10.0	9.718		ug/L		97	80 - 120
1,1-Dichloroethane	10.0	8.280		ug/L		83	76 - 120
1,1-Dichloroethene	10.0	8.029		ug/L		80	72 - 120
1,1-Dichloropropene	10.0	8.425		ug/L		84	76 - 120
1,2,3-Trichlorobenzene	10.0	10.26		ug/L		103	80 - 125
1,2,3-Trichloropropane	10.0	9.897		ug/L		99	66 - 131
1,2,4-Trichlorobenzene	10.0	9.658		ug/L		97	80 - 123
1,2,4-Trimethylbenzene	10.0	9.052		ug/L		91	78 - 125
1,2-Dibromo-3-Chloropropane	10.0	10.28		ug/L		103	77 - 120
1,2-Dibromoethane	10.0	9.207		ug/L		92	80 - 120
1,2-Dichlorobenzene	10.0	9.712		ug/L		97	79 - 123
1,2-Dichloroethane	10.0	11.02		ug/L		110	71 - 137
1,2-Dichloropropane	10.0	8.637		ug/L		86	80 - 120
1,3,5-Trimethylbenzene	10.0	9.666		ug/L		97	77 - 133

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60241-1

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

Lab Sample ID: LCS 570-153915/4

Matrix: Water

Analysis Batch: 153915

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	9.478		ug/L		95	79 - 123
1,3-Dichloropropane	10.0	10.06		ug/L		101	80 - 123
1,4-Dichlorobenzene	10.0	9.215		ug/L		92	75 - 123
2,2-Dichloropropane	10.0	8.455		ug/L		85	78 - 133
2-Butanone	10.0	7.146		ug/L		71	32 - 133
2-Chlorotoluene	10.0	9.823		ug/L		98	80 - 120
2-Hexanone	10.0	8.287		ug/L		83	57 - 127
4-Chlorotoluene	10.0	9.268		ug/L		93	78 - 120
4-Methyl-2-pentanone	10.0	9.080		ug/L		91	68 - 120
Acetone	10.0	7.721	J	ug/L		77	57 - 133
Benzene	10.0	9.054		ug/L		91	80 - 120
Bromobenzene	10.0	10.15		ug/L		102	80 - 124
Bromochloromethane	10.0	9.405		ug/L		94	76 - 125
Bromodichloromethane	10.0	10.34		ug/L		103	77 - 141
Bromoform	10.0	8.939		ug/L		89	46 - 178
Bromomethane	10.0	9.240		ug/L		92	52 - 162
cis-1,2-Dichloroethene	10.0	8.796		ug/L		88	76 - 122
cis-1,3-Dichloropropene	10.0	9.531		ug/L		95	80 - 122
Carbon disulfide	10.0	7.939		ug/L		79	66 - 125
Carbon tetrachloride	10.0	9.317		ug/L		93	69 - 145
Chlorobenzene	10.0	9.778		ug/L		98	80 - 120
Chloroethane	10.0	9.448		ug/L		94	73 - 139
Chloroform	10.0	8.916		ug/L		89	80 - 120
Chloromethane	10.0	6.132		ug/L		61	35 - 159
Dibromochloromethane	10.0	11.22		ug/L		112	63 - 151
Dibromomethane	10.0	10.62		ug/L		106	80 - 121
Dichlorodifluoromethane	10.0	7.814		ug/L		78	59 - 139
Ethylbenzene	10.0	9.373		ug/L		94	80 - 120
Isopropylbenzene	10.0	9.363		ug/L		94	80 - 124
Methylene Chloride	10.0	8.519		ug/L		85	70 - 120
Methyl-t-Butyl Ether (MTBE)	10.0	8.925		ug/L		89	72 - 120
Naphthalene	10.0	10.84		ug/L		108	75 - 120
n-Butylbenzene	10.0	9.212		ug/L		92	76 - 124
N-Propylbenzene	10.0	9.703		ug/L		97	80 - 122
o-Xylene	10.0	9.960		ug/L		100	80 - 122
m,p-Xylene	20.0	19.30		ug/L		96	80 - 122
p-Isopropyltoluene	10.0	9.597		ug/L		96	77 - 127
sec-Butylbenzene	10.0	8.873		ug/L		89	75 - 123
Styrene	10.0	9.817		ug/L		98	80 - 121
trans-1,2-Dichloroethene	10.0	8.607		ug/L		86	67 - 123
trans-1,3-Dichloropropene	10.0	9.168		ug/L		92	78 - 140
tert-Butylbenzene	10.0	9.074		ug/L		91	72 - 128
Tetrachloroethene	10.0	9.910		ug/L		99	80 - 128
Toluene	10.0	9.549		ug/L		95	80 - 120
Trichloroethene	10.0	9.689		ug/L		97	80 - 123
Trichlorofluoromethane	10.0	8.859		ug/L		89	64 - 168
Vinyl acetate	10.0	8.524		ug/L		85	75 - 144
Vinyl chloride	10.0	7.975		ug/L		80	74 - 130

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60241-1

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

Lab Sample ID: LCS 570-153915/4

Matrix: Water

Analysis Batch: 153915

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		68 - 135
4-Bromofluorobenzene (Surr)	107		71 - 120
Dibromofluoromethane	93		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: LCSD 570-153915/5

Matrix: Water

Analysis Batch: 153915

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	10.30		ug/L		103	76 - 143	0	20
1,1,1-Trichloroethane	10.0	9.727		ug/L		97	75 - 128	7	20
1,1,2,2-Tetrachloroethane	10.0	9.548		ug/L		95	73 - 126	1	21
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.459		ug/L		95	50 - 120	7	20
1,1,2-Trichloroethane	10.0	9.770		ug/L		98	80 - 120	1	20
1,1-Dichloroethane	10.0	8.698		ug/L		87	76 - 120	5	20
1,1-Dichloroethene	10.0	8.791		ug/L		88	72 - 120	9	20
1,1-Dichloropropene	10.0	9.132		ug/L		91	76 - 120	8	20
1,2,3-Trichlorobenzene	10.0	9.506		ug/L		95	80 - 125	8	22
1,2,3-Trichloropropane	10.0	8.769		ug/L		88	66 - 131	12	20
1,2,4-Trichlorobenzene	10.0	9.571		ug/L		96	80 - 123	1	20
1,2,4-Trimethylbenzene	10.0	9.523		ug/L		95	78 - 125	5	22
1,2-Dibromo-3-Chloropropane	10.0	9.592		ug/L		96	77 - 120	7	21
1,2-Dibromoethane	10.0	9.402		ug/L		94	80 - 120	2	20
1,2-Dichlorobenzene	10.0	10.02		ug/L		100	79 - 123	3	20
1,2-Dichloroethane	10.0	11.20		ug/L		112	71 - 137	2	20
1,2-Dichloropropane	10.0	8.966		ug/L		90	80 - 120	4	20
1,3,5-Trimethylbenzene	10.0	10.37		ug/L		104	77 - 133	7	20
1,3-Dichlorobenzene	10.0	9.508		ug/L		95	79 - 123	0	20
1,3-Dichloropropane	10.0	10.22		ug/L		102	80 - 123	2	20
1,4-Dichlorobenzene	10.0	9.549		ug/L		95	75 - 123	4	22
2,2-Dichloropropane	10.0	9.118		ug/L		91	78 - 133	8	20
2-Butanone	10.0	7.351		ug/L		74	32 - 133	3	26
2-Chlorotoluene	10.0	10.16		ug/L		102	80 - 120	3	20
2-Hexanone	10.0	8.209		ug/L		82	57 - 127	1	21
4-Chlorotoluene	10.0	9.486		ug/L		95	78 - 120	2	21
4-Methyl-2-pentanone	10.0	8.505		ug/L		85	68 - 120	7	20
Acetone	10.0	7.408	J	ug/L		74	57 - 133	4	28
Benzene	10.0	9.522		ug/L		95	80 - 120	5	20
Bromobenzene	10.0	10.61		ug/L		106	80 - 124	4	20
Bromochloromethane	10.0	9.155		ug/L		92	76 - 125	3	20
Bromodichloromethane	10.0	10.65		ug/L		106	77 - 141	3	20
Bromoform	10.0	8.876		ug/L		89	46 - 178	1	23
Bromomethane	10.0	9.292		ug/L		93	52 - 162	1	20
cis-1,2-Dichloroethene	10.0	9.272		ug/L		93	76 - 122	5	20
cis-1,3-Dichloropropene	10.0	9.720		ug/L		97	80 - 122	2	20
Carbon disulfide	10.0	8.788		ug/L		88	66 - 125	10	20
Carbon tetrachloride	10.0	10.05		ug/L		100	69 - 145	8	20

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60241-1

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

Lab Sample ID: LCSD 570-153915/5

Matrix: Water

Analysis Batch: 153915

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	10.32		ug/L		103	80 - 120	5	20
Chloroethane	10.0	10.04		ug/L		100	73 - 139	6	20
Chloroform	10.0	9.306		ug/L		93	80 - 120	4	20
Chloromethane	10.0	6.428		ug/L		64	35 - 159	5	20
Dibromochloromethane	10.0	11.16		ug/L		112	63 - 151	1	20
Dibromomethane	10.0	10.65		ug/L		106	80 - 121	0	20
Dichlorodifluoromethane	10.0	8.589		ug/L		86	59 - 139	9	20
Ethylbenzene	10.0	10.24		ug/L		102	80 - 120	9	20
Isopropylbenzene	10.0	9.932		ug/L		99	80 - 124	6	20
Methylene Chloride	10.0	8.818		ug/L		88	70 - 120	3	20
Methyl-t-Butyl Ether (MTBE)	10.0	8.931		ug/L		89	72 - 120	0	20
Naphthalene	10.0	10.59		ug/L		106	75 - 120	2	22
n-Butylbenzene	10.0	9.623		ug/L		96	76 - 124	4	23
N-Propylbenzene	10.0	10.32		ug/L		103	80 - 122	6	20
o-Xylene	10.0	10.40		ug/L		104	80 - 122	4	20
m,p-Xylene	20.0	20.57		ug/L		103	80 - 122	6	20
p-Isopropyltoluene	10.0	9.862		ug/L		99	77 - 127	3	21
sec-Butylbenzene	10.0	9.311		ug/L		93	75 - 123	5	21
Styrene	10.0	10.05		ug/L		100	80 - 121	2	20
trans-1,2-Dichloroethene	10.0	9.009		ug/L		90	67 - 123	5	20
trans-1,3-Dichloropropene	10.0	9.333		ug/L		93	78 - 140	2	20
tert-Butylbenzene	10.0	9.677		ug/L		97	72 - 128	6	22
Tetrachloroethene	10.0	10.01		ug/L		100	80 - 128	1	20
Toluene	10.0	9.899		ug/L		99	80 - 120	4	20
Trichloroethene	10.0	10.11		ug/L		101	80 - 123	4	20
Trichlorofluoromethane	10.0	9.621		ug/L		96	64 - 168	8	20
Vinyl acetate	10.0	9.919		ug/L		99	75 - 144	15	25
Vinyl chloride	10.0	8.762		ug/L		88	74 - 130	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		68 - 135
4-Bromofluorobenzene (Surr)	106		71 - 120
Dibromofluoromethane	92		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: MB 570-154065/8

Matrix: Water

Analysis Batch: 154065

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.50	0.29	ug/L			05/29/21 20:15	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		68 - 135					05/29/21 20:15	1
4-Bromofluorobenzene (Surr)	100		71 - 120					05/29/21 20:15	1
Dibromofluoromethane	105		80 - 120					05/29/21 20:15	1
Toluene-d8 (Surr)	98		80 - 120					05/29/21 20:15	1

Eurofins Calscience LLC

QC Sample Results

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

Job ID: 570-60241-1

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

Lab Sample ID: LCS 570-154065/4

Matrix: Water

Analysis Batch: 154065

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	10.0	10.18		ug/L		102	80 - 123
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	106		68 - 135				
4-Bromofluorobenzene (Surr)	99		71 - 120				
Dibromofluoromethane	103		80 - 120				
Toluene-d8 (Surr)	99		80 - 120				

Lab Sample ID: LCSD 570-154065/5

Matrix: Water

Analysis Batch: 154065

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
Trichloroethene	10.0	11.04		ug/L		110	80 - 123	8	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	105		68 - 135						
4-Bromofluorobenzene (Surr)	98		71 - 120						
Dibromofluoromethane	107		80 - 120						
Toluene-d8 (Surr)	100		80 - 120						

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

Lab Sample ID: MB 570-153982/1-A

Matrix: Water

Analysis Batch: 154354

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 153982

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	0.34	ug/L		05/29/21 09:17	06/02/21 03:59	1
Isotope Dilution	%Recovery	MB Qualifier	Limits						
1,4-Dioxane-d8	52		15 - 150						
Surrogate	%Recovery	MB Qualifier	Limits						
Nitrobenzene-d5	114		46 - 128						

Lab Sample ID: LCS 570-153982/2-A

Matrix: Water

Analysis Batch: 154354

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 153982

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	22.52		ug/L		113	57 - 136
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	46		15 - 150				

QC Sample Results

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

Job ID: 570-60241-1

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

Lab Sample ID: LCS 570-153982/2-A
Matrix: Water
Analysis Batch: 154354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153982

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	120		46 - 128

Lab Sample ID: LCSD 570-153982/3-A
Matrix: Water
Analysis Batch: 154354

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153982

Analyte	LCSD %Recovery	LCSD Qualifier	Limits	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane				20.0	21.20		ug/L		106	57 - 136	6	20
Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits									
1,4-Dioxane-d8	64		15 - 150									
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits									
Nitrobenzene-d5	111		46 - 128									

Lab Sample ID: 570-60241-2 MS
Matrix: Water
Analysis Batch: 154354

Client Sample ID: MW-30B
Prep Type: Total/NA
Prep Batch: 153982

Analyte	Sample Result	Sample Qualifier	Limits	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	1.2			20.0	22.79		ug/L		108	45 - 139		
Isotope Dilution	MS %Recovery	MS Qualifier	Limits									
1,4-Dioxane-d8	44		15 - 150									
Surrogate	MS %Recovery	MS Qualifier	Limits									
Nitrobenzene-d5	123		46 - 128									

Lab Sample ID: 570-60241-2 MSD
Matrix: Water
Analysis Batch: 154354

Client Sample ID: MW-30B
Prep Type: Total/NA
Prep Batch: 153982

Analyte	Sample Result	Sample Qualifier	Limits	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	1.2			20.0	21.95		ug/L		104	45 - 139	4	17
Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits									
1,4-Dioxane-d8	54		15 - 150									
Surrogate	MSD %Recovery	MSD Qualifier	Limits									
Nitrobenzene-d5	115		46 - 128									

QC Association Summary

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

Job ID: 570-60241-1

GC/MS VOA

Analysis Batch: 153915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60241-1	TB-05252021B	Total/NA	Water	8260B	
570-60241-2	MW-30B	Total/NA	Water	8260B	
570-60241-3	MW-41	Total/NA	Water	8260B	
MB 570-153915/8	Method Blank	Total/NA	Water	8260B	
LCS 570-153915/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-153915/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 154065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60241-2 - DL	MW-30B	Total/NA	Water	8260B	
MB 570-154065/8	Method Blank	Total/NA	Water	8260B	
LCS 570-154065/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 570-154065/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 153982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60241-2	MW-30B	Total/NA	Water	3510C	
570-60241-3	MW-41	Total/NA	Water	3510C	
MB 570-153982/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-153982/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-153982/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-60241-2 MS	MW-30B	Total/NA	Water	3510C	
570-60241-2 MSD	MW-30B	Total/NA	Water	3510C	

Analysis Batch: 154354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60241-2	MW-30B	Total/NA	Water	8270C SIM ID	153982
MB 570-153982/1-A	Method Blank	Total/NA	Water	8270C SIM ID	153982
LCS 570-153982/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	153982
LCSD 570-153982/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	153982
570-60241-2 MS	MW-30B	Total/NA	Water	8270C SIM ID	153982
570-60241-2 MSD	MW-30B	Total/NA	Water	8270C SIM ID	153982

Analysis Batch: 154982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60241-3	MW-41	Total/NA	Water	8270C SIM ID	153982

Lab Chronicle

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

Job ID: 570-60241-1

Client Sample ID: TB-05252021B

Lab Sample ID: 570-60241-1

Date Collected: 05/25/21 08:00

Matrix: Water

Date Received: 05/26/21 17:50

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	153915	05/29/21 00:00	OH1	ECL 2
Instrument ID: GCMSWW										

Client Sample ID: MW-30B

Lab Sample ID: 570-60241-2

Date Collected: 05/25/21 09:40

Matrix: Water

Date Received: 05/26/21 17:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	2	20 mL	20 mL	154065	05/29/21 23:41	OH1	ECL 2
Instrument ID: GCMSVV										
Total/NA	Analysis	8260B		1	20 mL	20 mL	153915	05/29/21 05:56	OH1	ECL 2
Instrument ID: GCMSWW										
Total/NA	Prep	3510C			100.0 mL	10 mL	153982	05/29/21 09:17	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			154354	06/02/21 05:13	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Client Sample ID: MW-41

Lab Sample ID: 570-60241-3

Date Collected: 05/26/21 16:10

Matrix: Water

Date Received: 05/26/21 17:50

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	153915	05/29/21 06:25	OH1	ECL 2
Instrument ID: GCMSWW										
Total/NA	Prep	3510C			100.0 mL	10 mL	153982	05/29/21 09:17	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			154982	06/04/21 02:40	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

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

Job ID: 570-60241-1

Laboratory: Eurofins Calscience LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0161	11-19-21
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	SCAQMD LAP	17LA0919	11-30-21
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20 *
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-30-22
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Calscience LLC

Method Summary

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

Job ID: 570-60241-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

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

Job ID: 570-60241-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-60241-1	TB-05252021B	Water	05/25/21 08:00	05/26/21 17:50	
570-60241-2	MW-30B	Water	05/25/21 09:40	05/26/21 17:50	
570-60241-3	MW-41	Water	05/26/21 16:10	05/26/21 17:50	

Login Sample Receipt Checklist

Client: Hargis + Associates, Inc.

Job Number: 570-60241-1

Login Number: 60241

List Source: Eurofins Calscience LLC

List Number: 1

Creator: Vitente, Precy

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	



June 15, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2101198
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on May 26, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amy Leung', with the word 'For' written below it.

Amy Leung
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-05262021	2101198-01	Water	5/26/21 8:00	5/26/21 17:05
MW-30A	2101198-02	Groundwater	5/26/21 8:52	5/26/21 17:05
MW-30B	2101198-03	Groundwater	5/26/21 9:40	5/26/21 17:05
MW-3000B	2101198-04	Groundwater	5/26/21 11:15	5/26/21 17:05
MW-32B	2101198-05	Groundwater	5/26/21 11:05	5/26/21 17:05
MW-34B	2101198-06	Groundwater	5/26/21 13:06	5/26/21 17:05
MW-40	2101198-07	Groundwater	5/26/21 8:59	5/26/21 17:05
EW-01	2101198-08	Groundwater	5/26/21 10:20	5/26/21 17:05
MW-21	2101198-09	Groundwater	5/26/21 10:47	5/26/21 17:05
MW-36	2101198-10	Groundwater	5/26/21 14:03	5/26/21 17:05



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: TB-05262021

Lab ID: 2101198-01

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	B1F0006	06/01/2021	06/01/21 21:12	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 21:12	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0006	06/01/2021	06/01/21 21:12	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0006	06/01/2021	06/01/21 21:12	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:12	
1,1-Dichloroethene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 21:12	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 21:12	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 21:12	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 21:12	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0006	06/01/2021	06/01/21 21:12	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0006	06/01/2021	06/01/21 21:12	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:12	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 21:12	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:12	
Benzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
Bromobenzene	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 21:12	
Bromodichloromethane	ND	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 21:12	
Bromoform	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 21:12	
Bromomethane	ND	0.50	0.40	1	B1F0006	06/01/2021	06/01/21 21:12	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:12	
Chlorobenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
Chloroethane	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 21:12	
Chloroform	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:12	
Chloromethane	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 21:12	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 21:12	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
Dibromochloromethane	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 21:12	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: TB-05262021

Lab ID: 2101198-01

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
Dibromomethane	ND	0.50	0.19	1	B1F0006	06/01/2021	06/01/21 21:12	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0006	06/01/2021	06/01/21 21:12	
Ethylbenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 21:12	
Isopropylbenzene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:12	
m,p-Xylene	ND	1.0	0.19	1	B1F0006	06/01/2021	06/01/21 21:12	
Methylene chloride	ND	1.0	0.71	1	B1F0006	06/01/2021	06/01/21 21:12	
n-Butylbenzene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:12	
n-Propylbenzene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:12	
Naphthalene	ND	0.50	0.41	1	B1F0006	06/01/2021	06/01/21 21:12	
o-Xylene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:12	
Styrene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:12	
Tetrachloroethene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:12	
Toluene	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 21:12	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:12	
Trichloroethene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:12	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0006	06/01/2021	06/01/21 21:12	
Vinyl chloride	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:12	
Surrogate: 1,2-Dichloroethane-d4	88.8 %		64 - 155		B1F0006	06/01/2021	06/01/21 21:12	
Surrogate: 4-Bromofluorobenzene	88.8 %		73 - 124		B1F0006	06/01/2021	06/01/21 21:12	
Surrogate: Dibromofluoromethane	90.4 %		78 - 129		B1F0006	06/01/2021	06/01/21 21:12	
Surrogate: Toluene-d8	101 %		84 - 117		B1F0006	06/01/2021	06/01/21 21:12	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-30A

Lab ID: 2101198-02

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	B1F0006	06/02/2021	06/02/21 02:12	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 02:12	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0006	06/02/2021	06/02/21 02:12	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0006	06/02/2021	06/02/21 02:12	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:12	
1,1-Dichloroethene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 02:12	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 02:12	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 02:12	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 02:12	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0006	06/02/2021	06/02/21 02:12	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0006	06/02/2021	06/02/21 02:12	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:12	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 02:12	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:12	
Benzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
Bromobenzene	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 02:12	
Bromodichloromethane	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 02:12	
Bromoform	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 02:12	
Bromomethane	ND	0.50	0.40	1	B1F0006	06/02/2021	06/02/21 02:12	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:12	
Chlorobenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
Chloroethane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 02:12	
Chloroform	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:12	
Chloromethane	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 02:12	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 02:12	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
Dibromochloromethane	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 02:12	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-30A

Lab ID: 2101198-02

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
Dibromomethane	ND	0.50	0.19	1	B1F0006	06/02/2021	06/02/21 02:12	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 02:12	
Ethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 02:12	
Isopropylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:12	
m,p-Xylene	ND	1.0	0.19	1	B1F0006	06/02/2021	06/02/21 02:12	
Methylene chloride	ND	1.0	0.71	1	B1F0006	06/02/2021	06/02/21 02:12	
n-Butylbenzene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:12	
n-Propylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:12	
Naphthalene	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 02:12	
o-Xylene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:12	
Styrene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:12	
Tetrachloroethene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:12	
Toluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 02:12	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:12	
Trichloroethene	0.64	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:12	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0006	06/02/2021	06/02/21 02:12	
Vinyl chloride	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:12	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>86.4 %</i>		<i>64 - 155</i>		B1F0006	06/02/2021	<i>06/02/21 02:12</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.5 %</i>		<i>73 - 124</i>		B1F0006	06/02/2021	<i>06/02/21 02:12</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.2 %</i>		<i>78 - 129</i>		B1F0006	06/02/2021	<i>06/02/21 02:12</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.3 %</i>		<i>84 - 117</i>		B1F0006	06/02/2021	<i>06/02/21 02:12</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-30B

Lab ID: 2101198-03

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	B1F0006	06/02/2021	06/02/21 02:36	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 02:36	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0006	06/02/2021	06/02/21 02:36	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0006	06/02/2021	06/02/21 02:36	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:36	
1,1-Dichloroethene	31	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 02:36	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 02:36	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 02:36	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 02:36	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0006	06/02/2021	06/02/21 02:36	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0006	06/02/2021	06/02/21 02:36	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:36	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 02:36	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:36	
Benzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
Bromobenzene	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 02:36	
Bromodichloromethane	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 02:36	
Bromoform	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 02:36	
Bromomethane	ND	0.50	0.40	1	B1F0006	06/02/2021	06/02/21 02:36	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:36	
Chlorobenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
Chloroethane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 02:36	
Chloroform	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:36	
Chloromethane	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 02:36	
cis-1,2-Dichloroethene	4.8	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 02:36	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
Dibromochloromethane	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 02:36	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-30B

Lab ID: 2101198-03

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
Dibromomethane	ND	0.50	0.19	1	B1F0006	06/02/2021	06/02/21 02:36	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 02:36	
Ethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 02:36	
Isopropylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:36	
m,p-Xylene	ND	1.0	0.19	1	B1F0006	06/02/2021	06/02/21 02:36	
Methylene chloride	ND	1.0	0.71	1	B1F0006	06/02/2021	06/02/21 02:36	
n-Butylbenzene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 02:36	
n-Propylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:36	
Naphthalene	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 02:36	
o-Xylene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:36	
Styrene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:36	
Tetrachloroethene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:36	
Toluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 02:36	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 02:36	
Trichloroethene	97	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 02:36	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0006	06/02/2021	06/02/21 02:36	
Vinyl chloride	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 02:36	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>86.2 %</i>		<i>64 - 155</i>		B1F0006	06/02/2021	<i>06/02/21 02:36</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86.8 %</i>		<i>73 - 124</i>		B1F0006	06/02/2021	<i>06/02/21 02:36</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.7 %</i>		<i>78 - 129</i>		B1F0006	06/02/2021	<i>06/02/21 02:36</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.1 %</i>		<i>84 - 117</i>		B1F0006	06/02/2021	<i>06/02/21 02:36</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-3000B

Lab ID: 2101198-04

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	B1F0006	06/02/2021	06/02/21 03:01	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 03:01	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0006	06/02/2021	06/02/21 03:01	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0006	06/02/2021	06/02/21 03:01	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 03:01	
1,1-Dichloroethene	23	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 03:01	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 03:01	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 03:01	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 03:01	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0006	06/02/2021	06/02/21 03:01	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0006	06/02/2021	06/02/21 03:01	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 03:01	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 03:01	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 03:01	
Benzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
Bromobenzene	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 03:01	
Bromodichloromethane	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 03:01	
Bromoform	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 03:01	
Bromomethane	ND	0.50	0.40	1	B1F0006	06/02/2021	06/02/21 03:01	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 03:01	
Chlorobenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
Chloroethane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 03:01	
Chloroform	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 03:01	
Chloromethane	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 03:01	
cis-1,2-Dichloroethene	4.6	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 03:01	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
Dibromochloromethane	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 03:01	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-3000B

Lab ID: 2101198-04

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
Dibromomethane	ND	0.50	0.19	1	B1F0006	06/02/2021	06/02/21 03:01	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 03:01	
Ethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 03:01	
Isopropylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 03:01	
m,p-Xylene	ND	1.0	0.19	1	B1F0006	06/02/2021	06/02/21 03:01	
Methylene chloride	ND	1.0	0.71	1	B1F0006	06/02/2021	06/02/21 03:01	
n-Butylbenzene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 03:01	
n-Propylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 03:01	
Naphthalene	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 03:01	
o-Xylene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 03:01	
Styrene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 03:01	
Tetrachloroethene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 03:01	
Toluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 03:01	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 03:01	
Trichloroethene	84	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 03:01	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0006	06/02/2021	06/02/21 03:01	
Vinyl chloride	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 03:01	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.7 %</i>		<i>64 - 155</i>		B1F0006	06/02/2021	<i>06/02/21 03:01</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.7 %</i>		<i>73 - 124</i>		B1F0006	06/02/2021	<i>06/02/21 03:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.8 %</i>		<i>78 - 129</i>		B1F0006	06/02/2021	<i>06/02/21 03:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.0 %</i>		<i>84 - 117</i>		B1F0006	06/02/2021	<i>06/02/21 03:01</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-32B

Lab ID: 2101198-05

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	B1F0024	06/02/2021	06/02/21 10:05	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:05	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0024	06/02/2021	06/02/21 10:05	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0024	06/02/2021	06/02/21 10:05	
1,1-Dichloroethane	0.61	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:05	
1,1-Dichloroethene	110	2.5	0.66	5	B1F0040	06/02/2021	06/02/21 20:41	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:05	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:05	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:05	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:05	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0024	06/02/2021	06/02/21 10:05	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0024	06/02/2021	06/02/21 10:05	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:05	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:05	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:05	
Benzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
Bromobenzene	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:05	
Bromodichloromethane	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:05	
Bromoform	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:05	
Bromomethane	ND	0.50	0.40	1	B1F0024	06/02/2021	06/02/21 10:05	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:05	
Chlorobenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
Chloroethane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:05	
Chloroform	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:05	
Chloromethane	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:05	
cis-1,2-Dichloroethene	2.1	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:05	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
Dibromochloromethane	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:05	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-32B

Lab ID: 2101198-05

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
Dibromomethane	ND	0.50	0.19	1	B1F0024	06/02/2021	06/02/21 10:05	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 10:05	
Ethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:05	
Isopropylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:05	
m,p-Xylene	ND	1.0	0.19	1	B1F0024	06/02/2021	06/02/21 10:05	
Methylene chloride	ND	1.0	0.71	1	B1F0024	06/02/2021	06/02/21 10:05	
n-Butylbenzene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:05	
n-Propylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:05	
Naphthalene	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 10:05	
o-Xylene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:05	
Styrene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:05	
Tetrachloroethene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:05	
Toluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:05	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:05	
Trichloroethene	20	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:05	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0024	06/02/2021	06/02/21 10:05	
Vinyl chloride	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:05	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>88.4 %</i>		<i>64 - 155</i>		B1F0024	06/02/2021	<i>06/02/21 10:05</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>90.4 %</i>		<i>64 - 155</i>		B1F0040	06/02/2021	<i>06/02/21 20:41</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.1 %</i>		<i>73 - 124</i>		B1F0024	06/02/2021	<i>06/02/21 10:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.1 %</i>		<i>73 - 124</i>		B1F0040	06/02/2021	<i>06/02/21 20:41</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>91.0 %</i>		<i>78 - 129</i>		B1F0024	06/02/2021	<i>06/02/21 10:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.0 %</i>		<i>78 - 129</i>		B1F0040	06/02/2021	<i>06/02/21 20:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.6 %</i>		<i>84 - 117</i>		B1F0024	06/02/2021	<i>06/02/21 10:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.4 %</i>		<i>84 - 117</i>		B1F0040	06/02/2021	<i>06/02/21 20:41</i>	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-34B

Lab ID: 2101198-06

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	B1F0024	06/02/2021	06/02/21 10:30	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:30	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0024	06/02/2021	06/02/21 10:30	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0024	06/02/2021	06/02/21 10:30	
1,1-Dichloroethane	0.80	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:30	
1,1-Dichloroethene	93	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:30	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:30	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:30	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:30	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0024	06/02/2021	06/02/21 10:30	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0024	06/02/2021	06/02/21 10:30	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:30	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:30	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:30	
Benzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
Bromobenzene	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:30	
Bromodichloromethane	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:30	
Bromoform	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:30	
Bromomethane	ND	0.50	0.40	1	B1F0024	06/02/2021	06/02/21 10:30	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:30	
Chlorobenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
Chloroethane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:30	
Chloroform	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:30	
Chloromethane	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:30	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:30	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
Dibromochloromethane	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:30	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-34B

Lab ID: 2101198-06

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
Dibromomethane	ND	0.50	0.19	1	B1F0024	06/02/2021	06/02/21 10:30	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 10:30	
Ethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:30	
Isopropylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:30	
m,p-Xylene	ND	1.0	0.19	1	B1F0024	06/02/2021	06/02/21 10:30	
Methylene chloride	ND	1.0	0.71	1	B1F0024	06/02/2021	06/02/21 10:30	
n-Butylbenzene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:30	
n-Propylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:30	
Naphthalene	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 10:30	
o-Xylene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:30	
Styrene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:30	
Tetrachloroethene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:30	
Toluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:30	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:30	
Trichloroethene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:30	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0024	06/02/2021	06/02/21 10:30	
Vinyl chloride	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:30	
Surrogate: 1,2-Dichloroethane-d4	90.8 %		64 - 155		B1F0024	06/02/2021	06/02/21 10:30	
Surrogate: 4-Bromofluorobenzene	87.1 %		73 - 124		B1F0024	06/02/2021	06/02/21 10:30	
Surrogate: Dibromofluoromethane	91.2 %		78 - 129		B1F0024	06/02/2021	06/02/21 10:30	
Surrogate: Toluene-d8	100 %		84 - 117		B1F0024	06/02/2021	06/02/21 10:30	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-40

Lab ID: 2101198-07

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	B1F0006	06/02/2021	06/02/21 01:47	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 01:47	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0006	06/02/2021	06/02/21 01:47	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0006	06/02/2021	06/02/21 01:47	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 01:47	
1,1-Dichloroethene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 01:47	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 01:47	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 01:47	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 01:47	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0006	06/02/2021	06/02/21 01:47	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0006	06/02/2021	06/02/21 01:47	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 01:47	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 01:47	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 01:47	
Benzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
Bromobenzene	ND	0.50	0.21	1	B1F0006	06/02/2021	06/02/21 01:47	
Bromodichloromethane	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 01:47	
Bromoform	ND	0.50	0.20	1	B1F0006	06/02/2021	06/02/21 01:47	
Bromomethane	ND	0.50	0.40	1	B1F0006	06/02/2021	06/02/21 01:47	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 01:47	
Chlorobenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
Chloroethane	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 01:47	
Chloroform	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 01:47	
Chloromethane	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 01:47	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0006	06/02/2021	06/02/21 01:47	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
Dibromochloromethane	ND	0.50	0.16	1	B1F0006	06/02/2021	06/02/21 01:47	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-40

Lab ID: 2101198-07

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
Dibromomethane	ND	0.50	0.19	1	B1F0006	06/02/2021	06/02/21 01:47	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0006	06/02/2021	06/02/21 01:47	
Ethylbenzene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0006	06/02/2021	06/02/21 01:47	
Isopropylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 01:47	
m,p-Xylene	ND	1.0	0.19	1	B1F0006	06/02/2021	06/02/21 01:47	
Methylene chloride	ND	1.0	0.71	1	B1F0006	06/02/2021	06/02/21 01:47	
n-Butylbenzene	ND	0.50	0.11	1	B1F0006	06/02/2021	06/02/21 01:47	
n-Propylbenzene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 01:47	
Naphthalene	ND	0.50	0.41	1	B1F0006	06/02/2021	06/02/21 01:47	
o-Xylene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 01:47	
Styrene	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 01:47	
Tetrachloroethene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 01:47	
Toluene	ND	0.50	0.12	1	B1F0006	06/02/2021	06/02/21 01:47	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0006	06/02/2021	06/02/21 01:47	
Trichloroethene	ND	0.50	0.10	1	B1F0006	06/02/2021	06/02/21 01:47	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0006	06/02/2021	06/02/21 01:47	
Vinyl chloride	ND	0.50	0.13	1	B1F0006	06/02/2021	06/02/21 01:47	
Surrogate: 1,2-Dichloroethane-d4	87.5 %		64 - 155		B1F0006	06/02/2021	06/02/21 01:47	
Surrogate: 4-Bromofluorobenzene	88.6 %		73 - 124		B1F0006	06/02/2021	06/02/21 01:47	
Surrogate: Dibromofluoromethane	92.5 %		78 - 129		B1F0006	06/02/2021	06/02/21 01:47	
Surrogate: Toluene-d8	97.4 %		84 - 117		B1F0006	06/02/2021	06/02/21 01:47	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: EW-01

Lab ID: 2101198-08

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	B1F0024	06/02/2021	06/02/21 10:55	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:55	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0024	06/02/2021	06/02/21 10:55	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0024	06/02/2021	06/02/21 10:55	
1,1-Dichloroethane	0.53	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:55	
1,1-Dichloroethene	56	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:55	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:55	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:55	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:55	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0024	06/02/2021	06/02/21 10:55	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0024	06/02/2021	06/02/21 10:55	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:55	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:55	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:55	
Benzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
Bromobenzene	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 10:55	
Bromodichloromethane	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:55	
Bromoform	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 10:55	
Bromomethane	ND	0.50	0.40	1	B1F0024	06/02/2021	06/02/21 10:55	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:55	
Chlorobenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
Chloroethane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:55	
Chloroform	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:55	
Chloromethane	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:55	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 10:55	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
Dibromochloromethane	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 10:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: EW-01

Lab ID: 2101198-08

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
Dibromomethane	ND	0.50	0.19	1	B1F0024	06/02/2021	06/02/21 10:55	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 10:55	
Ethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 10:55	
Isopropylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:55	
m,p-Xylene	ND	1.0	0.19	1	B1F0024	06/02/2021	06/02/21 10:55	
Methylene chloride	ND	1.0	0.71	1	B1F0024	06/02/2021	06/02/21 10:55	
n-Butylbenzene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 10:55	
n-Propylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:55	
Naphthalene	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 10:55	
o-Xylene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:55	
Styrene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:55	
Tetrachloroethene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:55	
Toluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 10:55	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 10:55	
Trichloroethene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 10:55	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0024	06/02/2021	06/02/21 10:55	
Vinyl chloride	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 10:55	
Surrogate: 1,2-Dichloroethane-d4	90.1 %		64 - 155		B1F0024	06/02/2021	06/02/21 10:55	
Surrogate: 4-Bromofluorobenzene	85.6 %		73 - 124		B1F0024	06/02/2021	06/02/21 10:55	
Surrogate: Dibromofluoromethane	91.9 %		78 - 129		B1F0024	06/02/2021	06/02/21 10:55	
Surrogate: Toluene-d8	99.8 %		84 - 117		B1F0024	06/02/2021	06/02/21 10:55	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-21

Lab ID: 2101198-09

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	B1F0024	06/02/2021	06/02/21 11:20	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 11:20	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0024	06/02/2021	06/02/21 11:20	
1,1,2-Trichloroethane	9.9	0.50	0.25	1	B1F0024	06/02/2021	06/02/21 11:20	
1,1-Dichloroethane	18	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 11:20	
1,1-Dichloroethene	1800	25	6.6	50	B1F0024	06/02/2021	06/02/21 11:45	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2-Dichloroethane	3.7	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 11:20	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 11:20	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 11:20	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 11:20	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0024	06/02/2021	06/02/21 11:20	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0024	06/02/2021	06/02/21 11:20	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 11:20	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 11:20	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 11:20	
Benzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
Bromobenzene	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 11:20	
Bromodichloromethane	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 11:20	
Bromoform	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 11:20	
Bromomethane	ND	0.50	0.40	1	B1F0024	06/02/2021	06/02/21 11:20	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 11:20	
Chlorobenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
Chloroethane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 11:20	
Chloroform	1.3	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 11:20	
Chloromethane	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 11:20	
cis-1,2-Dichloroethene	1.4	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 11:20	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
Dibromochloromethane	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 11:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-21

Lab ID: 2101198-09

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
Dibromomethane	ND	0.50	0.19	1	B1F0024	06/02/2021	06/02/21 11:20	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 11:20	
Ethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 11:20	
Isopropylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 11:20	
m,p-Xylene	ND	1.0	0.19	1	B1F0024	06/02/2021	06/02/21 11:20	
Methylene chloride	ND	1.0	0.71	1	B1F0024	06/02/2021	06/02/21 11:20	
n-Butylbenzene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 11:20	
n-Propylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 11:20	
Naphthalene	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 11:20	
o-Xylene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 11:20	
Styrene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 11:20	
Tetrachloroethene	3.7	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 11:20	
Toluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 11:20	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 11:20	
Trichloroethene	18	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 11:20	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0024	06/02/2021	06/02/21 11:20	
Vinyl chloride	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 11:20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>87.1 %</i>		<i>64 - 155</i>		B1F0024	06/02/2021	<i>06/02/21 11:20</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.9 %</i>		<i>64 - 155</i>		B1F0024	06/02/2021	<i>06/02/21 11:45</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.2 %</i>		<i>73 - 124</i>		B1F0024	06/02/2021	<i>06/02/21 11:20</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.5 %</i>		<i>73 - 124</i>		B1F0024	06/02/2021	<i>06/02/21 11:45</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>89.9 %</i>		<i>78 - 129</i>		B1F0024	06/02/2021	<i>06/02/21 11:20</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.2 %</i>		<i>78 - 129</i>		B1F0024	06/02/2021	<i>06/02/21 11:45</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.2 %</i>		<i>84 - 117</i>		B1F0024	06/02/2021	<i>06/02/21 11:20</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.5 %</i>		<i>84 - 117</i>		B1F0024	06/02/2021	<i>06/02/21 11:45</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-36

Lab ID: 2101198-10

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	B1F0024	06/02/2021	06/02/21 12:10	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 12:10	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0024	06/02/2021	06/02/21 12:10	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0024	06/02/2021	06/02/21 12:10	
1,1-Dichloroethane	0.72	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 12:10	
1,1-Dichloroethene	110	2.5	0.66	5	B1F0040	06/02/2021	06/02/21 21:06	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 12:10	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 12:10	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 12:10	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 12:10	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0024	06/02/2021	06/02/21 12:10	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0024	06/02/2021	06/02/21 12:10	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 12:10	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 12:10	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 12:10	
Benzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
Bromobenzene	ND	0.50	0.21	1	B1F0024	06/02/2021	06/02/21 12:10	
Bromodichloromethane	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 12:10	
Bromoform	ND	0.50	0.20	1	B1F0024	06/02/2021	06/02/21 12:10	
Bromomethane	ND	0.50	0.40	1	B1F0024	06/02/2021	06/02/21 12:10	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 12:10	
Chlorobenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
Chloroethane	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 12:10	
Chloroform	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 12:10	
Chloromethane	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 12:10	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0024	06/02/2021	06/02/21 12:10	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
Dibromochloromethane	ND	0.50	0.16	1	B1F0024	06/02/2021	06/02/21 12:10	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-36

Lab ID: 2101198-10

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
Dibromomethane	ND	0.50	0.19	1	B1F0024	06/02/2021	06/02/21 12:10	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0024	06/02/2021	06/02/21 12:10	
Ethylbenzene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0024	06/02/2021	06/02/21 12:10	
Isopropylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 12:10	
m,p-Xylene	ND	1.0	0.19	1	B1F0024	06/02/2021	06/02/21 12:10	
Methylene chloride	ND	1.0	0.71	1	B1F0024	06/02/2021	06/02/21 12:10	
n-Butylbenzene	ND	0.50	0.11	1	B1F0024	06/02/2021	06/02/21 12:10	
n-Propylbenzene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 12:10	
Naphthalene	ND	0.50	0.41	1	B1F0024	06/02/2021	06/02/21 12:10	
o-Xylene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 12:10	
Styrene	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 12:10	
Tetrachloroethene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 12:10	
Toluene	ND	0.50	0.12	1	B1F0024	06/02/2021	06/02/21 12:10	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0024	06/02/2021	06/02/21 12:10	
Trichloroethene	ND	0.50	0.10	1	B1F0024	06/02/2021	06/02/21 12:10	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0024	06/02/2021	06/02/21 12:10	
Vinyl chloride	ND	0.50	0.13	1	B1F0024	06/02/2021	06/02/21 12:10	
Surrogate: 1,2-Dichloroethane-d4	88.5 %		64 - 155		B1F0024	06/02/2021	06/02/21 12:10	
Surrogate: 1,2-Dichloroethane-d4	91.2 %		64 - 155		B1F0040	06/02/2021	06/02/21 21:06	
Surrogate: 4-Bromofluorobenzene	86.8 %		73 - 124		B1F0024	06/02/2021	06/02/21 12:10	
Surrogate: 4-Bromofluorobenzene	86.8 %		73 - 124		B1F0040	06/02/2021	06/02/21 21:06	
Surrogate: Dibromofluoromethane	91.2 %		78 - 129		B1F0040	06/02/2021	06/02/21 21:06	
Surrogate: Dibromofluoromethane	92.3 %		78 - 129		B1F0024	06/02/2021	06/02/21 12:10	
Surrogate: Toluene-d8	97.5 %		84 - 117		B1F0040	06/02/2021	06/02/21 21:06	
Surrogate: Toluene-d8	99.4 %		84 - 117		B1F0024	06/02/2021	06/02/21 12:10	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

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 B1F0006 - MSVOA_LL_W

Blank (B1F0006-BLK1)

Prepared: 6/1/2021 Analyzed: 6/1/2021

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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 B1F0006 - MSVOA_LL_W (continued)

Blank (B1F0006-BLK1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

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
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	22.34		25.0000	89.4	64 - 155
Surrogate: 4-Bromofluorobenzene	22.45		25.0000	89.8	73 - 124
Surrogate: Dibromofluoromethane	22.87		25.0000	91.5	78 - 129
Surrogate: Toluene-d8	24.59		25.0000	98.4	84 - 117

LCS (B1F0006-BS1)

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	17.1300	0.50	0.11	20.0000	85.6	79 - 116
1,1,1-Trichloroethane	17.0000	0.50	0.21	20.0000	85.0	73 - 130
1,1,2,2-Tetrachloroethane	15.7000	0.50	0.36	20.0000	78.5	71 - 122
1,1,2-Trichloroethane	16.9400	0.50	0.25	20.0000	84.7	70 - 124
1,1-Dichloroethane	16.4300	0.50	0.09	20.0000	82.2	69 - 128
1,1-Dichloroethene	20.0900	0.50	0.13	20.0000	100	65 - 137
1,1-Dichloropropene	18.0700	0.50	0.13	20.0000	90.4	74 - 129
1,2,3-Trichloropropane	15.3800	0.50	0.39	20.0000	76.9	74 - 123
1,2,3-Trichlorobenzene	17.3900	0.50	0.18	20.0000	87.0	59 - 130
1,2,4-Trichlorobenzene	16.4200	0.50	0.16	20.0000	82.1	65 - 125
1,2,4-Trimethylbenzene	16.9400	0.50	0.14	20.0000	84.7	88 - 124
1,2-Dibromo-3-chloropropane	17.1900	0.50	0.41	20.0000	86.0	61 - 127
1,2-Dibromoethane	18.0000	0.50	0.24	20.0000	90.0	72 - 125
1,2-Dichlorobenzene	16.8500	0.50	0.20	20.0000	84.2	84 - 113
1,2-Dichloroethane	16.1700	0.50	0.20	20.0000	80.8	68 - 130
1,2-Dichloropropane	16.3900	0.50	0.15	20.0000	82.0	77 - 121
1,3,5-Trimethylbenzene	17.0000	0.50	0.13	20.0000	85.0	83 - 124

L3



Certificate of Analysis

Hargis & Associates, Inc.

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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 Limits	RPD	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

LCS (B1F0006-BS1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,3-Dichlorobenzene	16.5700	0.50	0.16	20.0000		82.8	83 - 112		L3
1,3-Dichloropropane	15.8400	0.50	0.21	20.0000		79.2	77 - 119		
1,4-Dichlorobenzene	16.7300	0.50	0.17	20.0000		83.6	79 - 115		
2,2-Dichloropropane	16.6000	0.50	0.38	20.0000		83.0	67 - 149		
2-Chlorotoluene	15.8700	0.50	0.11	20.0000		79.4	81 - 119		L3
4-Chlorotoluene	15.7600	0.50	0.12	20.0000		78.8	86 - 117		L3
4-Isopropyltoluene	17.0700	0.50	0.11	20.0000		85.4	82 - 131		
Benzene	16.8600	0.50	0.13	20.0000		84.3	75 - 124		
Bromobenzene	16.3300	0.50	0.21	20.0000		81.6	82 - 108		L3
Bromodichloromethane	16.8000	0.50	0.14	20.0000		84.0	80 - 120		
Bromoform	17.5300	0.50	0.20	20.0000		87.6	70 - 123		
Bromomethane	28.8200	0.50	0.40	20.0000		144	44 - 151		
Carbon tetrachloride	18.4400	0.50	0.09	20.0000		92.2	62 - 140		
Chlorobenzene	16.9300	0.50	0.13	20.0000		84.6	80 - 112		
Chloroethane	18.9400	0.50	0.15	20.0000		94.7	42 - 167		
Chloroform	16.5100	0.50	0.11	20.0000		82.6	77 - 122		
Chloromethane	21.1600	0.50	0.12	20.0000		106	33 - 153		
cis-1,2-Dichloroethene	16.3400	0.50	0.14	20.0000		81.7	75 - 121		
cis-1,3-Dichloropropene	16.8800	0.50	0.13	20.0000		84.4	73 - 127		
Dibromochloromethane	17.3900	0.50	0.16	20.0000		87.0	77 - 122		
Dibromomethane	16.6300	0.50	0.19	20.0000		83.2	75 - 121		
Dichlorodifluoromethane	35.5500	0.50	0.18	20.0000		178	0 - 171		L5
Ethylbenzene	17.0600	0.50	0.13	20.0000		85.3	82 - 119		
Hexachlorobutadiene	17.2400	0.50	0.15	20.0000		86.2	71 - 131		
Isopropylbenzene	16.5400	0.50	0.10	20.0000		82.7	75 - 126		
m,p-Xylene	34.6500	1.0	0.19	40.0000		86.6	86 - 119		
Methylene chloride	18.7300	1.0	0.71	20.0000		93.6	76 - 125		
n-Butylbenzene	16.2600	0.50	0.11	20.0000		81.3	81 - 125		
n-Propylbenzene	16.4200	0.50	0.10	20.0000		82.1	78 - 130		
Naphthalene	16.8500	0.50	0.41	20.0000		84.2	47 - 128		
o-Xylene	16.9500	0.50	0.13	20.0000		84.8	85 - 119		L3
sec-Butylbenzene	17.1300	0.50	0.09	20.0000		85.6	78 - 130		
Styrene	18.6000	0.50	0.13	20.0000		93.0	62 - 148		
tert-Butylbenzene	16.6700	0.50	0.09	20.0000		83.4	77 - 125		
Tetrachloroethene	18.1200	0.50	0.10	20.0000		90.6	73 - 120		
Toluene	17.9800	0.50	0.12	20.0000		89.9	79 - 119		
trans-1,2-Dichloroethene	17.4400	0.50	0.09	20.0000		87.2	70 - 129		
Trichloroethene	17.6800	0.50	0.10	20.0000		88.4	73 - 117		
Trichlorofluoromethane	21.9700	0.50	0.23	20.0000		110	59 - 135		
Vinyl chloride	20.1200	0.50	0.13	20.0000		101	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	22.05			25.0000		88.2	64 - 155		



Certificate of Analysis

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San Diego , CA 92122

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Reported : 06/15/2021

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

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

Batch B1F0006 - MSVOA_LL_W (continued)

LCS (B1F0006-BS1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

Surrogate: 4-Bromofluorobenzene	23.71		25.0000		94.8	73 - 124			
Surrogate: Dibromofluoromethane	22.88		25.0000		91.5	78 - 129			
Surrogate: Toluene-d8	24.82		25.0000		99.3	84 - 117			

LCS Dup (B1F0006-BS1)

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	17.1200	0.50	0.11	20.0000	85.6	79 - 116	0.0584	20	
1,1,1-Trichloroethane	16.9100	0.50	0.21	20.0000	84.6	73 - 130	0.531	20	
1,1,2,2-Tetrachloroethane	16.0700	0.50	0.36	20.0000	80.4	71 - 122	2.33	20	
1,1,2-Trichloroethane	17.2200	0.50	0.25	20.0000	86.1	70 - 124	1.64	20	
1,1-Dichloroethane	15.6800	0.50	0.09	20.0000	78.4	69 - 128	4.67	20	
1,1-Dichloroethene	19.4100	0.50	0.13	20.0000	97.0	65 - 137	3.44	20	
1,1-Dichloropropene	17.4500	0.50	0.13	20.0000	87.2	74 - 129	3.49	20	
1,2,3-Trichloropropane	15.3200	0.50	0.39	20.0000	76.6	74 - 123	0.391	20	
1,2,3-Trichlorobenzene	17.0500	0.50	0.18	20.0000	85.2	59 - 130	1.97	20	
1,2,4-Trichlorobenzene	16.2400	0.50	0.16	20.0000	81.2	65 - 125	1.10	20	
1,2,4-Trimethylbenzene	16.5900	0.50	0.14	20.0000	83.0	88 - 124	2.09	20	L3
1,2-Dibromo-3-chloropropane	16.8100	0.50	0.41	20.0000	84.0	61 - 127	2.24	20	
1,2-Dibromoethane	17.8100	0.50	0.24	20.0000	89.0	72 - 125	1.06	20	
1,2-Dichlorobenzene	16.9500	0.50	0.20	20.0000	84.8	84 - 113	0.592	20	
1,2-Dichloroethane	16.0800	0.50	0.20	20.0000	80.4	68 - 130	0.558	20	
1,2-Dichloropropane	16.5100	0.50	0.15	20.0000	82.6	77 - 121	0.729	20	
1,3,5-Trimethylbenzene	16.3300	0.50	0.13	20.0000	81.6	83 - 124	4.02	20	L3
1,3-Dichlorobenzene	16.6800	0.50	0.16	20.0000	83.4	83 - 112	0.662	20	
1,3-Dichloropropane	16.3500	0.50	0.21	20.0000	81.8	77 - 119	3.17	20	
1,4-Dichlorobenzene	16.3200	0.50	0.17	20.0000	81.6	79 - 115	2.48	20	
2,2-Dichloropropane	15.6100	0.50	0.38	20.0000	78.0	67 - 149	6.15	20	
2-Chlorotoluene	15.6500	0.50	0.11	20.0000	78.2	81 - 119	1.40	20	L3
4-Chlorotoluene	15.7200	0.50	0.12	20.0000	78.6	86 - 117	0.254	20	L3
4-Isopropyltoluene	16.6200	0.50	0.11	20.0000	83.1	82 - 131	2.67	20	
Benzene	16.5800	0.50	0.13	20.0000	82.9	75 - 124	1.67	20	
Bromobenzene	16.2400	0.50	0.21	20.0000	81.2	82 - 108	0.553	20	L3
Bromodichloromethane	16.6500	0.50	0.14	20.0000	83.2	80 - 120	0.897	20	
Bromoform	18.3200	0.50	0.20	20.0000	91.6	70 - 123	4.41	20	
Bromomethane	27.4700	0.50	0.40	20.0000	137	44 - 151	4.80	20	
Carbon tetrachloride	17.4300	0.50	0.09	20.0000	87.2	62 - 140	5.63	20	
Chlorobenzene	16.7400	0.50	0.13	20.0000	83.7	80 - 112	1.13	20	
Chloroethane	18.4500	0.50	0.15	20.0000	92.2	42 - 167	2.62	20	
Chloroform	16.0000	0.50	0.11	20.0000	80.0	77 - 122	3.14	20	
Chloromethane	20.2200	0.50	0.12	20.0000	101	33 - 153	4.54	20	
cis-1,2-Dichloroethene	15.8200	0.50	0.14	20.0000	79.1	75 - 121	3.23	20	
cis-1,3-Dichloropropene	16.1700	0.50	0.13	20.0000	80.8	73 - 127	4.30	20	
Dibromochloromethane	17.0800	0.50	0.16	20.0000	85.4	77 - 122	1.80	20	



Certificate of Analysis

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Reported : 06/15/2021

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 B1F0006 - MSVOA_LL_W (continued)

LCS Dup (B1F0006-BSD1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

Dibromomethane	16.8700	0.50	0.19	20.0000		84.4	75 - 121	1.43	20	
Dichlorodifluoromethane	34.0600	0.50	0.18	20.0000		170	0 - 171	4.28	20	
Ethylbenzene	16.9000	0.50	0.13	20.0000		84.5	82 - 119	0.942	20	
Hexachlorobutadiene	16.3500	0.50	0.15	20.0000		81.8	71 - 131	5.30	20	
Isopropylbenzene	16.0500	0.50	0.10	20.0000		80.2	75 - 126	3.01	20	
m,p-Xylene	34.6600	1.0	0.19	40.0000		86.6	86 - 119	0.0289	20	
Methylene chloride	18.5200	1.0	0.71	20.0000		92.6	76 - 125	1.13	20	
n-Butylbenzene	15.7900	0.50	0.11	20.0000		79.0	81 - 125	2.93	20	L3
n-Propylbenzene	16.0300	0.50	0.10	20.0000		80.2	78 - 130	2.40	20	
Naphthalene	16.6400	0.50	0.41	20.0000		83.2	47 - 128	1.25	20	
o-Xylene	16.6700	0.50	0.13	20.0000		83.4	85 - 119	1.67	20	L3
sec-Butylbenzene	16.5700	0.50	0.09	20.0000		82.8	78 - 130	3.32	20	
Styrene	18.8300	0.50	0.13	20.0000		94.2	62 - 148	1.23	20	
tert-Butylbenzene	16.3200	0.50	0.09	20.0000		81.6	77 - 125	2.12	20	
Tetrachloroethene	17.9600	0.50	0.10	20.0000		89.8	73 - 120	0.887	20	
Toluene	17.6400	0.50	0.12	20.0000		88.2	79 - 119	1.91	20	
trans-1,2-Dichloroethene	16.9600	0.50	0.09	20.0000		84.8	70 - 129	2.79	20	
Trichloroethene	16.5100	0.50	0.10	20.0000		82.6	73 - 117	6.84	20	
Trichlorofluoromethane	21.1800	0.50	0.23	20.0000		106	59 - 135	3.66	20	
Vinyl chloride	18.7700	0.50	0.13	20.0000		93.8	58 - 132	6.94	20	
Surrogate: 1,2-Dichloroethane-d4	21.92			25.0000		87.7	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.00			25.0000		96.0	73 - 124			
Surrogate: Dibromofluoromethane	22.49			25.0000		90.0	78 - 129			
Surrogate: Toluene-d8	24.92			25.0000		99.7	84 - 117			

Matrix Spike (B1F0006-MS1)

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	18.2400	0.50	0.11	20.0000	ND	91.2	81 - 133			
1,1,1-Trichloroethane	19.0600	0.50	0.21	20.0000	ND	95.3	93 - 149			
1,1,2,2-Tetrachloroethane	15.6200	0.50	0.36	20.0000	ND	78.1	69 - 151			
1,1,2-Trichloroethane	18.4100	0.50	0.25	20.0000	ND	92.0	78 - 130			
1,1-Dichloroethane	17.6100	0.50	0.09	20.0000	ND	88.0	68 - 135			
1,1-Dichloroethene	22.2100	0.50	0.13	20.0000	ND	111	77 - 134			
1,1-Dichloropropene	20.5900	0.50	0.13	20.0000	ND	103	91 - 138			
1,2,3-Trichloropropane	15.6500	0.50	0.39	20.0000	ND	78.2	77 - 136			
1,2,3-Trichlorobenzene	17.8400	0.50	0.18	20.0000	ND	89.2	72 - 129			
1,2,4-Trichlorobenzene	17.2800	0.50	0.16	20.0000	ND	86.4	64 - 135			
1,2,4-Trimethylbenzene	18.5200	0.50	0.14	20.0000	ND	92.6	10 - 179			
1,2-Dibromo-3-chloropropane	17.0600	0.50	0.41	20.0000	ND	85.3	62 - 153			
1,2-Dibromoethane	18.3000	0.50	0.24	20.0000	ND	91.5	80 - 132			
1,2-Dichlorobenzene	17.9900	0.50	0.20	20.0000	ND	90.0	81 - 131			
1,2-Dichloroethane	17.3100	0.50	0.20	20.0000	ND	86.6	68 - 146			



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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	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

Matrix Spike (B1F0006-MS1) - Continued

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,2-Dichloropropane	17.4900	0.50	0.15	20.0000	ND	87.4	74 - 136		
1,3,5-Trimethylbenzene	17.8900	0.50	0.13	20.0000	ND	89.4	66 - 149		
1,3-Dichlorobenzene	18.0200	0.50	0.16	20.0000	ND	90.1	79 - 128		
1,3-Dichloropropane	16.7300	0.50	0.21	20.0000	ND	83.6	80 - 129		
1,4-Dichlorobenzene	17.6500	0.50	0.17	20.0000	ND	88.2	84 - 121		
2,2-Dichloropropane	18.3700	0.50	0.38	20.0000	ND	91.8	63 - 179		
2-Chlorotoluene	16.9900	0.50	0.11	20.0000	ND	85.0	76 - 142		
4-Chlorotoluene	17.4700	0.50	0.12	20.0000	ND	87.4	72 - 152		
4-Isopropyltoluene	18.6900	0.50	0.11	20.0000	ND	93.4	84 - 141		
Benzene	18.5000	0.50	0.13	20.0000	ND	92.5	79 - 131		
Bromobenzene	17.5600	0.50	0.21	20.0000	ND	87.8	82 - 121		
Bromodichloromethane	17.5500	0.50	0.14	20.0000	ND	87.8	86 - 138		
Bromoform	18.4700	0.50	0.20	20.0000	ND	92.4	80 - 136		
Bromomethane	31.6100	0.50	0.40	20.0000	ND	158	35 - 194		
Carbon tetrachloride	20.6300	0.50	0.09	20.0000	ND	103	73 - 176		
Chlorobenzene	17.8400	0.50	0.13	20.0000	ND	89.2	81 - 124		
Chloroethane	21.9600	0.50	0.15	20.0000	ND	110	0 - 257		
Chloroform	17.1500	0.50	0.11	20.0000	ND	85.8	76 - 139		
Chloromethane	24.5300	0.50	0.12	20.0000	ND	123	27 - 144		
cis-1,2-Dichloroethene	17.8200	0.50	0.14	20.0000	ND	89.1	69 - 139		
cis-1,3-Dichloropropene	18.2400	0.50	0.13	20.0000	ND	91.2	67 - 149		
Dibromochloromethane	17.6300	0.50	0.16	20.0000	ND	88.2	91 - 131		M2
Dibromomethane	17.4700	0.50	0.19	20.0000	ND	87.4	70 - 134		
Dichlorodifluoromethane	42.0500	0.50	0.18	20.0000	ND	210	0 - 161		M2
Ethylbenzene	18.4100	0.50	0.13	20.0000	ND	92.0	89 - 134		
Hexachlorobutadiene	18.4000	0.50	0.15	20.0000	ND	92.0	73 - 137		
Isopropylbenzene	18.0100	0.50	0.10	20.0000	ND	90.0	72 - 152		
m,p-Xylene	38.0000	1.0	0.19	40.0000	ND	95.0	82 - 141		
Methylene chloride	18.8000	1.0	0.71	20.0000	ND	94.0	74 - 133		
n-Butylbenzene	17.8900	0.50	0.11	20.0000	ND	89.4	65 - 164		
n-Propylbenzene	17.7100	0.50	0.10	20.0000	ND	88.6	73 - 161		
Naphthalene	16.9200	0.50	0.41	20.0000	ND	84.6	59 - 105		
o-Xylene	18.0900	0.50	0.13	20.0000	ND	90.4	90 - 134		
sec-Butylbenzene	18.7900	0.50	0.09	20.0000	ND	94.0	80 - 157		
Styrene	20.0300	0.50	0.13	20.0000	ND	100	0 - 222		
tert-Butylbenzene	18.2500	0.50	0.09	20.0000	ND	91.2	88 - 141		
Tetrachloroethene	20.1200	0.50	0.10	20.0000	ND	101	75 - 136		
Toluene	19.4100	0.50	0.12	20.0000	ND	97.0	82 - 132		
trans-1,2-Dichloroethene	19.1500	0.50	0.09	20.0000	ND	95.8	65 - 135		
Trichloroethene	19.2200	0.50	0.10	20.0000	ND	96.1	75 - 128		
Trichlorofluoromethane	26.4200	0.50	0.23	20.0000	ND	132	89 - 143		
Vinyl chloride	23.2600	0.50	0.13	20.0000	ND	116	50 - 148		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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

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

Batch B1F0006 - MSVOA_LL_W (continued)

Matrix Spike (B1F0006-MS1) - Continued

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

Surrogate: 1,2-Dichloroethane-d4	21.92		25.0000		87.7	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.93		25.0000		95.7	73 - 124			
Surrogate: Dibromofluoromethane	23.05		25.0000		92.2	78 - 129			
Surrogate: Toluene-d8	24.93		25.0000		99.7	84 - 117			

Matrix Spike Dup (B1F0006-MSD1)

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	17.1300	0.50	0.11	20.0000	ND	85.6	81 - 133	6.28	20	
1,1,1-Trichloroethane	17.0700	0.50	0.21	20.0000	ND	85.4	93 - 149	11.0	20	M2
1,1,2,2-Tetrachloroethane	15.1600	0.50	0.36	20.0000	ND	75.8	69 - 151	2.99	20	
1,1,2-Trichloroethane	17.5700	0.50	0.25	20.0000	ND	87.8	78 - 130	4.67	20	
1,1-Dichloroethane	15.8700	0.50	0.09	20.0000	ND	79.4	68 - 135	10.4	20	
1,1-Dichloroethene	19.6300	0.50	0.13	20.0000	ND	98.2	77 - 134	12.3	20	
1,1-Dichloropropene	18.3700	0.50	0.13	20.0000	ND	91.8	91 - 138	11.4	20	
1,2,3-Trichloropropane	14.8400	0.50	0.39	20.0000	ND	74.2	77 - 136	5.31	20	M2
1,2,3-Trichlorobenzene	17.1400	0.50	0.18	20.0000	ND	85.7	72 - 129	4.00	20	
1,2,4-Trichlorobenzene	16.1700	0.50	0.16	20.0000	ND	80.8	64 - 135	6.64	20	
1,2,4-Trimethylbenzene	17.0300	0.50	0.14	20.0000	ND	85.2	10 - 179	8.38	20	
1,2-Dibromo-3-chloropropane	15.9000	0.50	0.41	20.0000	ND	79.5	62 - 153	7.04	20	
1,2-Dibromoethane	17.0500	0.50	0.24	20.0000	ND	85.2	80 - 132	7.07	20	
1,2-Dichlorobenzene	16.9300	0.50	0.20	20.0000	ND	84.6	81 - 131	6.07	20	
1,2-Dichloroethane	15.9800	0.50	0.20	20.0000	ND	79.9	68 - 146	7.99	20	
1,2-Dichloropropane	16.3800	0.50	0.15	20.0000	ND	81.9	74 - 136	6.55	20	
1,3,5-Trimethylbenzene	16.7000	0.50	0.13	20.0000	ND	83.5	66 - 149	6.88	20	
1,3-Dichlorobenzene	16.7200	0.50	0.16	20.0000	ND	83.6	79 - 128	7.48	20	
1,3-Dichloropropane	15.8800	0.50	0.21	20.0000	ND	79.4	80 - 129	5.21	20	M2
1,4-Dichlorobenzene	16.2500	0.50	0.17	20.0000	ND	81.2	84 - 121	8.26	20	M2
2,2-Dichloropropane	16.3100	0.50	0.38	20.0000	ND	81.6	63 - 179	11.9	20	
2-Chlorotoluene	15.7700	0.50	0.11	20.0000	ND	78.8	76 - 142	7.45	20	
4-Chlorotoluene	15.7500	0.50	0.12	20.0000	ND	78.8	72 - 152	10.4	20	
4-Isopropyltoluene	17.7100	0.50	0.11	20.0000	ND	88.6	84 - 141	5.38	20	
Benzene	16.8200	0.50	0.13	20.0000	ND	84.1	79 - 131	9.51	20	
Bromobenzene	16.5400	0.50	0.21	20.0000	ND	82.7	82 - 121	5.98	20	
Bromodichloromethane	16.3600	0.50	0.14	20.0000	ND	81.8	86 - 138	7.02	20	M2
Bromoform	17.6600	0.50	0.20	20.0000	ND	88.3	80 - 136	4.48	20	
Bromomethane	31.0900	0.50	0.40	20.0000	ND	155	35 - 194	1.66	20	
Carbon tetrachloride	18.9300	0.50	0.09	20.0000	ND	94.6	73 - 176	8.59	20	
Chlorobenzene	16.8500	0.50	0.13	20.0000	ND	84.2	81 - 124	5.71	20	
Chloroethane	22.0900	0.50	0.15	20.0000	ND	110	0 - 257	0.590	20	
Chloroform	15.8300	0.50	0.11	20.0000	ND	79.2	76 - 139	8.00	20	
Chloromethane	24.3400	0.50	0.12	20.0000	ND	122	27 - 144	0.778	20	
cis-1,2-Dichloroethene	16.1800	0.50	0.14	20.0000	ND	80.9	69 - 139	9.65	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	RPD	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

Matrix Spike Dup (B1F0006-MSD1) - Continued

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

cis-1,3-Dichloropropene	16.1000	0.50	0.13	20.0000	ND	80.5	67 - 149	12.5	20	
Dibromochloromethane	16.4000	0.50	0.16	20.0000	ND	82.0	91 - 131	7.23	20	M2
Dibromomethane	16.2400	0.50	0.19	20.0000	ND	81.2	70 - 134	7.30	20	
Dichlorodifluoromethane	41.0600	0.50	0.18	20.0000	ND	205	0 - 161	2.38	20	M2
Ethylbenzene	17.1100	0.50	0.13	20.0000	ND	85.6	89 - 134	7.32	20	M2
Hexachlorobutadiene	18.0200	0.50	0.15	20.0000	ND	90.1	73 - 137	2.09	20	
Isopropylbenzene	16.3500	0.50	0.10	20.0000	ND	81.8	72 - 152	9.66	20	
m,p-Xylene	35.4700	1.0	0.19	40.0000	ND	88.7	82 - 141	6.89	20	
Methylene chloride	17.9600	1.0	0.71	20.0000	ND	89.8	74 - 133	4.57	20	
n-Butylbenzene	16.9900	0.50	0.11	20.0000	ND	85.0	65 - 164	5.16	20	
n-Propylbenzene	16.3400	0.50	0.10	20.0000	ND	81.7	73 - 161	8.05	20	
Naphthalene	15.8700	0.50	0.41	20.0000	ND	79.4	59 - 105	6.40	20	
o-Xylene	17.0500	0.50	0.13	20.0000	ND	85.2	90 - 134	5.92	20	M2
sec-Butylbenzene	17.5000	0.50	0.09	20.0000	ND	87.5	80 - 157	7.11	20	
Styrene	18.9700	0.50	0.13	20.0000	ND	94.8	0 - 222	5.44	20	
tert-Butylbenzene	16.7300	0.50	0.09	20.0000	ND	83.6	88 - 141	8.69	20	M2
Tetrachloroethene	18.4500	0.50	0.10	20.0000	ND	92.2	75 - 136	8.66	20	
Toluene	17.7900	0.50	0.12	20.0000	ND	89.0	82 - 132	8.71	20	
trans-1,2-Dichloroethene	17.4200	0.50	0.09	20.0000	ND	87.1	65 - 135	9.46	20	
Trichloroethene	17.6000	0.50	0.10	20.0000	ND	88.0	75 - 128	8.80	20	
Trichlorofluoromethane	25.9800	0.50	0.23	20.0000	ND	130	89 - 143	1.68	20	
Vinyl chloride	23.2500	0.50	0.13	20.0000	ND	116	50 - 148	0.0430	20	
Surrogate: 1,2-Dichloroethane-d4	21.75			25.0000		87.0	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.20			25.0000		96.8	73 - 124			
Surrogate: Dibromofluoromethane	22.76			25.0000		91.0	78 - 129			
Surrogate: Toluene-d8	25.13			25.0000		101	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 B1F0024 - MSVOA_LL_W

Blank (B1F0024-BLK1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

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



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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	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B1F0024 - MSVOA_LL_W (continued)

Blank (B1F0024-BLK1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

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	22.27	25.0000	89.1	64 - 155
Surrogate: 4-Bromofluorobenzene	22.09	25.0000	88.4	73 - 124
Surrogate: Dibromofluoromethane	23.07	25.0000	92.3	78 - 129
Surrogate: Toluene-d8	24.26	25.0000	97.0	84 - 117

LCS (B1F0024-BS1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	17.6500	0.50	0.11	20.0000	88.2	79 - 116
1,1,1-Trichloroethane	17.3300	0.50	0.21	20.0000	86.6	73 - 130
1,1,2,2-Tetrachloroethane	16.2100	0.50	0.36	20.0000	81.0	71 - 122
1,1,2-Trichloroethane	17.6700	0.50	0.25	20.0000	88.4	70 - 124
1,1-Dichloroethane	16.7900	0.50	0.09	20.0000	84.0	69 - 128
1,1-Dichloroethene	19.9700	0.50	0.13	20.0000	99.8	65 - 137
1,1-Dichloropropene	18.8300	0.50	0.13	20.0000	94.2	74 - 129
1,2,3-Trichloropropane	15.3400	0.50	0.39	20.0000	76.7	74 - 123
1,2,3-Trichlorobenzene	17.3600	0.50	0.18	20.0000	86.8	59 - 130
1,2,4-Trichlorobenzene	16.2800	0.50	0.16	20.0000	81.4	65 - 125
1,2,4-Trimethylbenzene	16.9200	0.50	0.14	20.0000	84.6	88 - 124
1,2-Dibromo-3-chloropropane	17.1200	0.50	0.41	20.0000	85.6	61 - 127
1,2-Dibromoethane	17.8800	0.50	0.24	20.0000	89.4	72 - 125
1,2-Dichlorobenzene	17.2800	0.50	0.20	20.0000	86.4	84 - 113
1,2-Dichloroethane	17.0200	0.50	0.20	20.0000	85.1	68 - 130
1,2-Dichloropropane	17.1700	0.50	0.15	20.0000	85.8	77 - 121
1,3,5-Trimethylbenzene	16.9300	0.50	0.13	20.0000	84.6	83 - 124
1,3-Dichlorobenzene	17.4500	0.50	0.16	20.0000	87.2	83 - 112
1,3-Dichloropropane	16.3500	0.50	0.21	20.0000	81.8	77 - 119

L3



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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	RPD Limit	Notes

Batch B1F0024 - MSVOA_LL_W (continued)

LCS (B1F0024-BS1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,4-Dichlorobenzene	16.8600	0.50	0.17	20.0000		84.3	79 - 115		
2,2-Dichloropropane	12.9700	0.50	0.38	20.0000		64.8	67 - 149		L4
2-Chlorotoluene	15.9000	0.50	0.11	20.0000		79.5	81 - 119		L3
4-Chlorotoluene	16.4300	0.50	0.12	20.0000		82.2	86 - 117		L3
4-Isopropyltoluene	17.0900	0.50	0.11	20.0000		85.4	82 - 131		
Benzene	17.2200	0.50	0.13	20.0000		86.1	75 - 124		
Bromobenzene	17.2900	0.50	0.21	20.0000		86.4	82 - 108		
Bromodichloromethane	17.1500	0.50	0.14	20.0000		85.8	80 - 120		
Bromoform	17.8500	0.50	0.20	20.0000		89.2	70 - 123		
Bromomethane	27.8300	0.50	0.40	20.0000		139	44 - 151		
Carbon tetrachloride	18.3800	0.50	0.09	20.0000		91.9	62 - 140		
Chlorobenzene	16.9400	0.50	0.13	20.0000		84.7	80 - 112		
Chloroethane	19.0700	0.50	0.15	20.0000		95.4	42 - 167		
Chloroform	16.4600	0.50	0.11	20.0000		82.3	77 - 122		
Chloromethane	20.8500	0.50	0.12	20.0000		104	33 - 153		
cis-1,2-Dichloroethene	16.6800	0.50	0.14	20.0000		83.4	75 - 121		
cis-1,3-Dichloropropene	16.1800	0.50	0.13	20.0000		80.9	73 - 127		
Dibromochloromethane	17.3300	0.50	0.16	20.0000		86.6	77 - 122		
Dibromomethane	16.5100	0.50	0.19	20.0000		82.6	75 - 121		
Dichlorodifluoromethane	33.5000	0.50	0.18	20.0000		168	0 - 171		
Ethylbenzene	17.0500	0.50	0.13	20.0000		85.2	82 - 119		
Hexachlorobutadiene	16.8900	0.50	0.15	20.0000		84.4	71 - 131		
Isopropylbenzene	16.5700	0.50	0.10	20.0000		82.8	75 - 126		
m,p-Xylene	34.7900	1.0	0.19	40.0000		87.0	86 - 119		
Methylene chloride	18.5100	1.0	0.71	20.0000		92.6	76 - 125		
n-Butylbenzene	15.9000	0.50	0.11	20.0000		79.5	81 - 125		L3
n-Propylbenzene	16.4700	0.50	0.10	20.0000		82.4	78 - 130		
Naphthalene	16.9200	0.50	0.41	20.0000		84.6	47 - 128		
o-Xylene	16.8000	0.50	0.13	20.0000		84.0	85 - 119		L3
sec-Butylbenzene	17.2700	0.50	0.09	20.0000		86.4	78 - 130		
Styrene	18.7900	0.50	0.13	20.0000		94.0	62 - 148		
tert-Butylbenzene	17.2800	0.50	0.09	20.0000		86.4	77 - 125		
Tetrachloroethene	18.6700	0.50	0.10	20.0000		93.4	73 - 120		
Toluene	18.4100	0.50	0.12	20.0000		92.0	79 - 119		
trans-1,2-Dichloroethene	17.7600	0.50	0.09	20.0000		88.8	70 - 129		
Trichloroethene	17.6600	0.50	0.10	20.0000		88.3	73 - 117		
Trichlorofluoromethane	21.4300	0.50	0.23	20.0000		107	59 - 135		
Vinyl chloride	19.2400	0.50	0.13	20.0000		96.2	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	21.62			25.0000		86.5	64 - 155		
Surrogate: 4-Bromofluorobenzene	23.20			25.0000		92.8	73 - 124		
Surrogate: Dibromofluoromethane	22.64			25.0000		90.6	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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0024 - MSVOA_LL_W (continued)

LCS (B1F0024-BS1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

Surrogate: Toluene-d8 25.06 25.0000 100 84 - 117

LCS Dup (B1F0024-BSD1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	16.6800	0.50	0.11	20.0000	83.4	79 - 116	5.65	20	
1,1,1-Trichloroethane	15.9500	0.50	0.21	20.0000	79.8	73 - 130	8.29	20	
1,1,2,2-Tetrachloroethane	15.7700	0.50	0.36	20.0000	78.8	71 - 122	2.75	20	
1,1,2-Trichloroethane	17.2000	0.50	0.25	20.0000	86.0	70 - 124	2.70	20	
1,1-Dichloroethane	15.2700	0.50	0.09	20.0000	76.4	69 - 128	9.48	20	
1,1-Dichloroethene	18.6900	0.50	0.13	20.0000	93.4	65 - 137	6.62	20	
1,1-Dichloropropene	17.7600	0.50	0.13	20.0000	88.8	74 - 129	5.85	20	
1,2,3-Trichloropropane	15.4100	0.50	0.39	20.0000	77.0	74 - 123	0.455	20	
1,2,3-Trichlorobenzene	17.1300	0.50	0.18	20.0000	85.6	59 - 130	1.33	20	
1,2,4-Trichlorobenzene	16.1600	0.50	0.16	20.0000	80.8	65 - 125	0.740	20	
1,2,4-Trimethylbenzene	16.5300	0.50	0.14	20.0000	82.6	88 - 124	2.33	20	L3
1,2-Dibromo-3-chloropropane	16.8900	0.50	0.41	20.0000	84.4	61 - 127	1.35	20	
1,2-Dibromoethane	17.1500	0.50	0.24	20.0000	85.8	72 - 125	4.17	20	
1,2-Dichlorobenzene	16.8600	0.50	0.20	20.0000	84.3	84 - 113	2.46	20	
1,2-Dichloroethane	16.2300	0.50	0.20	20.0000	81.2	68 - 130	4.75	20	
1,2-Dichloropropane	16.0000	0.50	0.15	20.0000	80.0	77 - 121	7.05	20	
1,3,5-Trimethylbenzene	16.2300	0.50	0.13	20.0000	81.2	83 - 124	4.22	20	L3
1,3-Dichlorobenzene	16.6800	0.50	0.16	20.0000	83.4	83 - 112	4.51	20	
1,3-Dichloropropane	15.6900	0.50	0.21	20.0000	78.4	77 - 119	4.12	20	
1,4-Dichlorobenzene	16.3100	0.50	0.17	20.0000	81.6	79 - 115	3.32	20	
2,2-Dichloropropane	12.5800	0.50	0.38	20.0000	62.9	67 - 149	3.05	20	L4
2-Chlorotoluene	15.3600	0.50	0.11	20.0000	76.8	81 - 119	3.45	20	L3
4-Chlorotoluene	15.4900	0.50	0.12	20.0000	77.4	86 - 117	5.89	20	L3
4-Isopropyltoluene	16.2000	0.50	0.11	20.0000	81.0	82 - 131	5.35	20	L3
Benzene	16.3500	0.50	0.13	20.0000	81.8	75 - 124	5.18	20	
Bromobenzene	16.4500	0.50	0.21	20.0000	82.2	82 - 108	4.98	20	
Bromodichloromethane	16.3700	0.50	0.14	20.0000	81.8	80 - 120	4.65	20	
Bromoform	17.6200	0.50	0.20	20.0000	88.1	70 - 123	1.30	20	
Bromomethane	25.7600	0.50	0.40	20.0000	129	44 - 151	7.73	20	
Carbon tetrachloride	17.6800	0.50	0.09	20.0000	88.4	62 - 140	3.88	20	
Chlorobenzene	16.1800	0.50	0.13	20.0000	80.9	80 - 112	4.59	20	
Chloroethane	17.0900	0.50	0.15	20.0000	85.4	42 - 167	11.0	20	
Chloroform	15.6500	0.50	0.11	20.0000	78.2	77 - 122	5.05	20	
Chloromethane	18.9300	0.50	0.12	20.0000	94.6	33 - 153	9.65	20	
cis-1,2-Dichloroethene	15.7600	0.50	0.14	20.0000	78.8	75 - 121	5.67	20	
cis-1,3-Dichloropropene	16.1300	0.50	0.13	20.0000	80.6	73 - 127	0.310	20	
Dibromochloromethane	16.5000	0.50	0.16	20.0000	82.5	77 - 122	4.91	20	
Dibromomethane	16.6200	0.50	0.19	20.0000	83.1	75 - 121	0.664	20	
Dichlorodifluoromethane	30.3400	0.50	0.18	20.0000	152	0 - 171	9.90	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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 B1F0024 - MSVOA_LL_W (continued)

LCS Dup (B1F0024-BSD1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

Ethylbenzene	16.0400	0.50	0.13	20.0000		80.2	82 - 119	6.10	20	L3
Hexachlorobutadiene	16.2800	0.50	0.15	20.0000		81.4	71 - 131	3.68	20	
Isopropylbenzene	15.6500	0.50	0.10	20.0000		78.2	75 - 126	5.71	20	
m,p-Xylene	33.3800	1.0	0.19	40.0000		83.4	86 - 119	4.14	20	L3
Methylene chloride	17.3200	1.0	0.71	20.0000		86.6	76 - 125	6.64	20	
n-Butylbenzene	15.0800	0.50	0.11	20.0000		75.4	81 - 125	5.29	20	L3
n-Propylbenzene	15.6400	0.50	0.10	20.0000		78.2	78 - 130	5.17	20	
Naphthalene	16.9500	0.50	0.41	20.0000		84.8	47 - 128	0.177	20	
o-Xylene	16.2600	0.50	0.13	20.0000		81.3	85 - 119	3.27	20	L3
sec-Butylbenzene	16.4100	0.50	0.09	20.0000		82.0	78 - 130	5.11	20	
Styrene	17.8800	0.50	0.13	20.0000		89.4	62 - 148	4.96	20	
tert-Butylbenzene	16.1400	0.50	0.09	20.0000		80.7	77 - 125	6.82	20	
Tetrachloroethene	16.6000	0.50	0.10	20.0000		83.0	73 - 120	11.7	20	
Toluene	17.1700	0.50	0.12	20.0000		85.8	79 - 119	6.97	20	
trans-1,2-Dichloroethene	16.5700	0.50	0.09	20.0000		82.8	70 - 129	6.93	20	
Trichloroethene	17.2300	0.50	0.10	20.0000		86.2	73 - 117	2.46	20	
Trichlorofluoromethane	20.0800	0.50	0.23	20.0000		100	59 - 135	6.50	20	
Vinyl chloride	17.6100	0.50	0.13	20.0000		88.0	58 - 132	8.85	20	
Surrogate: 1,2-Dichloroethane-d4	21.91			25.0000		87.6	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.48			25.0000		93.9	73 - 124			
Surrogate: Dibromofluoromethane	22.70			25.0000		90.8	78 - 129			
Surrogate: Toluene-d8	25.00			25.0000		100	84 - 117			



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San Diego , CA 92122

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Reported : 06/15/2021

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 B1F0040 - MSVOA_LL_W

Blank (B1F0040-BLK1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

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



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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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0040 - MSVOA_LL_W (continued)

Blank (B1F0040-BLK1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

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	21.71	25.0000	86.8	64 - 155
Surrogate: 4-Bromofluorobenzene	22.01	25.0000	88.0	73 - 124
Surrogate: Dibromofluoromethane	22.03	25.0000	88.1	78 - 129
Surrogate: Toluene-d8	25.16	25.0000	101	84 - 117

LCS (B1F0040-BS1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	17.9100	0.50	0.11	20.0000	89.6	79 - 116
1,1,1-Trichloroethane	17.1200	0.50	0.21	20.0000	85.6	73 - 130
1,1,2,2-Tetrachloroethane	16.0200	0.50	0.36	20.0000	80.1	71 - 122
1,1,2-Trichloroethane	17.8800	0.50	0.25	20.0000	89.4	70 - 124
1,1-Dichloroethane	16.1100	0.50	0.09	20.0000	80.6	69 - 128
1,1-Dichloroethene	20.1700	0.50	0.13	20.0000	101	65 - 137
1,1-Dichloropropene	19.0000	0.50	0.13	20.0000	95.0	74 - 129
1,2,3-Trichloropropane	15.6600	0.50	0.39	20.0000	78.3	74 - 123
1,2,3-Trichlorobenzene	17.7900	0.50	0.18	20.0000	89.0	59 - 130
1,2,4-Trichlorobenzene	17.3000	0.50	0.16	20.0000	86.5	65 - 125
1,2,4-Trimethylbenzene	17.5900	0.50	0.14	20.0000	88.0	88 - 124
1,2-Dibromo-3-chloropropane	17.1200	0.50	0.41	20.0000	85.6	61 - 127
1,2-Dibromoethane	17.4100	0.50	0.24	20.0000	87.0	72 - 125
1,2-Dichlorobenzene	17.8600	0.50	0.20	20.0000	89.3	84 - 113
1,2-Dichloroethane	16.9300	0.50	0.20	20.0000	84.6	68 - 130
1,2-Dichloropropane	16.7300	0.50	0.15	20.0000	83.6	77 - 121
1,3,5-Trimethylbenzene	17.2800	0.50	0.13	20.0000	86.4	83 - 124
1,3-Dichlorobenzene	17.6500	0.50	0.16	20.0000	88.2	83 - 112
1,3-Dichloropropane	16.2500	0.50	0.21	20.0000	81.2	77 - 119

L3



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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	RPD Limit	Notes

Batch B1F0040 - MSVOA_LL_W (continued)

LCS (B1F0040-BS1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,4-Dichlorobenzene	17.5400	0.50	0.17	20.0000		87.7	79 - 115		
2,2-Dichloropropane	16.4500	0.50	0.38	20.0000		82.2	67 - 149		
2-Chlorotoluene	16.4100	0.50	0.11	20.0000		82.0	81 - 119		
4-Chlorotoluene	16.6500	0.50	0.12	20.0000		83.2	86 - 117		
4-Isopropyltoluene	17.5200	0.50	0.11	20.0000		87.6	82 - 131		L3
Benzene	17.0400	0.50	0.13	20.0000		85.2	75 - 124		
Bromobenzene	17.3300	0.50	0.21	20.0000		86.6	82 - 108		
Bromodichloromethane	17.1700	0.50	0.14	20.0000		85.8	80 - 120		
Bromoform	18.3200	0.50	0.20	20.0000		91.6	70 - 123		
Bromomethane	26.7900	0.50	0.40	20.0000		134	44 - 151		
Carbon tetrachloride	18.7400	0.50	0.09	20.0000		93.7	62 - 140		
Chlorobenzene	17.2300	0.50	0.13	20.0000		86.2	80 - 112		
Chloroethane	19.0300	0.50	0.15	20.0000		95.2	42 - 167		
Chloroform	16.4100	0.50	0.11	20.0000		82.0	77 - 122		
Chloromethane	21.3100	0.50	0.12	20.0000		107	33 - 153		
cis-1,2-Dichloroethene	16.4000	0.50	0.14	20.0000		82.0	75 - 121		
cis-1,3-Dichloropropene	16.7300	0.50	0.13	20.0000		83.6	73 - 127		
Dibromochloromethane	16.8900	0.50	0.16	20.0000		84.4	77 - 122		
Dibromomethane	17.0600	0.50	0.19	20.0000		85.3	75 - 121		
Dichlorodifluoromethane	34.4000	0.50	0.18	20.0000		172	0 - 171		L4
Ethylbenzene	17.2100	0.50	0.13	20.0000		86.0	82 - 119		
Hexachlorobutadiene	17.9500	0.50	0.15	20.0000		89.8	71 - 131		
Isopropylbenzene	16.9100	0.50	0.10	20.0000		84.6	75 - 126		
m,p-Xylene	35.3600	1.0	0.19	40.0000		88.4	86 - 119		
Methylene chloride	18.0600	1.0	0.71	20.0000		90.3	76 - 125		
n-Butylbenzene	16.9800	0.50	0.11	20.0000		84.9	81 - 125		
n-Propylbenzene	16.9300	0.50	0.10	20.0000		84.6	78 - 130		
Naphthalene	17.1300	0.50	0.41	20.0000		85.6	47 - 128		
o-Xylene	17.1300	0.50	0.13	20.0000		85.6	85 - 119		
sec-Butylbenzene	17.7200	0.50	0.09	20.0000		88.6	78 - 130		
Styrene	19.0900	0.50	0.13	20.0000		95.4	62 - 148		
tert-Butylbenzene	17.5500	0.50	0.09	20.0000		87.8	77 - 125		
Tetrachloroethene	18.7100	0.50	0.10	20.0000		93.6	73 - 120		
Toluene	18.2600	0.50	0.12	20.0000		91.3	79 - 119		
trans-1,2-Dichloroethene	17.6400	0.50	0.09	20.0000		88.2	70 - 129		
Trichloroethene	18.0400	0.50	0.10	20.0000		90.2	73 - 117		
Trichlorofluoromethane	21.9900	0.50	0.23	20.0000		110	59 - 135		
Vinyl chloride	19.6800	0.50	0.13	20.0000		98.4	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	21.93			25.0000		87.7	64 - 155		
Surrogate: 4-Bromofluorobenzene	23.09			25.0000		92.4	73 - 124		
Surrogate: Dibromofluoromethane	23.09			25.0000		92.4	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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0040 - MSVOA_LL_W (continued)

LCS (B1F0040-BS1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

Surrogate: Toluene-d8 24.83 25.0000 99.3 84 - 117

LCS Dup (B1F0040-BSD1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	17.2100	0.50	0.11	20.0000	86.0	79 - 116	3.99	20	
1,1,1-Trichloroethane	16.7200	0.50	0.21	20.0000	83.6	73 - 130	2.36	20	
1,1,2,2-Tetrachloroethane	15.5300	0.50	0.36	20.0000	77.6	71 - 122	3.11	20	
1,1,2-Trichloroethane	17.2000	0.50	0.25	20.0000	86.0	70 - 124	3.88	20	
1,1-Dichloroethane	16.0000	0.50	0.09	20.0000	80.0	69 - 128	0.685	20	
1,1-Dichloroethene	18.8000	0.50	0.13	20.0000	94.0	65 - 137	7.03	20	
1,1-Dichloropropene	17.5100	0.50	0.13	20.0000	87.6	74 - 129	8.16	20	
1,2,3-Trichloropropane	15.0000	0.50	0.39	20.0000	75.0	74 - 123	4.31	20	
1,2,3-Trichlorobenzene	17.4200	0.50	0.18	20.0000	87.1	59 - 130	2.10	20	
1,2,4-Trichlorobenzene	15.7800	0.50	0.16	20.0000	78.9	65 - 125	9.19	20	
1,2,4-Trimethylbenzene	17.0200	0.50	0.14	20.0000	85.1	88 - 124	3.29	20	L3
1,2-Dibromo-3-chloropropane	15.8300	0.50	0.41	20.0000	79.2	61 - 127	7.83	20	
1,2-Dibromoethane	17.2100	0.50	0.24	20.0000	86.0	72 - 125	1.16	20	
1,2-Dichlorobenzene	17.2000	0.50	0.20	20.0000	86.0	84 - 113	3.76	20	
1,2-Dichloroethane	15.9500	0.50	0.20	20.0000	79.8	68 - 130	5.96	20	
1,2-Dichloropropane	16.2300	0.50	0.15	20.0000	81.2	77 - 121	3.03	20	
1,3,5-Trimethylbenzene	16.7100	0.50	0.13	20.0000	83.6	83 - 124	3.35	20	
1,3-Dichlorobenzene	16.8600	0.50	0.16	20.0000	84.3	83 - 112	4.58	20	
1,3-Dichloropropane	15.9900	0.50	0.21	20.0000	80.0	77 - 119	1.61	20	
1,4-Dichlorobenzene	16.8100	0.50	0.17	20.0000	84.0	79 - 115	4.25	20	
2,2-Dichloropropane	15.4300	0.50	0.38	20.0000	77.2	67 - 149	6.40	20	
2-Chlorotoluene	15.7600	0.50	0.11	20.0000	78.8	81 - 119	4.04	20	L3
4-Chlorotoluene	15.6200	0.50	0.12	20.0000	78.1	86 - 117	6.38	20	L3
4-Isopropyltoluene	16.9500	0.50	0.11	20.0000	84.8	82 - 131	3.31	20	
Benzene	16.3100	0.50	0.13	20.0000	81.6	75 - 124	4.38	20	
Bromobenzene	16.7700	0.50	0.21	20.0000	83.8	82 - 108	3.28	20	
Bromodichloromethane	16.4900	0.50	0.14	20.0000	82.4	80 - 120	4.04	20	
Bromoform	17.8800	0.50	0.20	20.0000	89.4	70 - 123	2.43	20	
Bromomethane	27.4300	0.50	0.40	20.0000	137	44 - 151	2.36	20	
Carbon tetrachloride	17.9300	0.50	0.09	20.0000	89.6	62 - 140	4.42	20	
Chlorobenzene	16.5200	0.50	0.13	20.0000	82.6	80 - 112	4.21	20	
Chloroethane	17.7400	0.50	0.15	20.0000	88.7	42 - 167	7.02	20	
Chloroform	15.8400	0.50	0.11	20.0000	79.2	77 - 122	3.53	20	
Chloromethane	20.2400	0.50	0.12	20.0000	101	33 - 153	5.15	20	
cis-1,2-Dichloroethene	16.1800	0.50	0.14	20.0000	80.9	75 - 121	1.35	20	
cis-1,3-Dichloropropene	15.8100	0.50	0.13	20.0000	79.0	73 - 127	5.65	20	
Dibromochloromethane	16.7400	0.50	0.16	20.0000	83.7	77 - 122	0.892	20	
Dibromomethane	16.3100	0.50	0.19	20.0000	81.6	75 - 121	4.50	20	
Dichlorodifluoromethane	32.7500	0.50	0.18	20.0000	164	0 - 171	4.91	20	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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 B1F0040 - MSVOA_LL_W (continued)

LCS Dup (B1F0040-BSD1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

Ethylbenzene	16.4700	0.50	0.13	20.0000		82.4	82 - 119	4.39	20	
Hexachlorobutadiene	16.7400	0.50	0.15	20.0000		83.7	71 - 131	6.98	20	
Isopropylbenzene	16.3200	0.50	0.10	20.0000		81.6	75 - 126	3.55	20	
m,p-Xylene	33.5900	1.0	0.19	40.0000		84.0	86 - 119	5.13	20	L3
Methylene chloride	18.0100	1.0	0.71	20.0000		90.0	76 - 125	0.277	20	
n-Butylbenzene	15.8600	0.50	0.11	20.0000		79.3	81 - 125	6.82	20	L3
n-Propylbenzene	16.0600	0.50	0.10	20.0000		80.3	78 - 130	5.27	20	
Naphthalene	16.0500	0.50	0.41	20.0000		80.2	47 - 128	6.51	20	
o-Xylene	15.9800	0.50	0.13	20.0000		79.9	85 - 119	6.95	20	L3
sec-Butylbenzene	17.0900	0.50	0.09	20.0000		85.4	78 - 130	3.62	20	
Styrene	17.9700	0.50	0.13	20.0000		89.8	62 - 148	6.04	20	
tert-Butylbenzene	16.6300	0.50	0.09	20.0000		83.2	77 - 125	5.38	20	
Tetrachloroethene	17.9600	0.50	0.10	20.0000		89.8	73 - 120	4.09	20	
Toluene	17.3600	0.50	0.12	20.0000		86.8	79 - 119	5.05	20	
trans-1,2-Dichloroethene	17.1800	0.50	0.09	20.0000		85.9	70 - 129	2.64	20	
Trichloroethene	17.4600	0.50	0.10	20.0000		87.3	73 - 117	3.27	20	
Trichlorofluoromethane	20.8400	0.50	0.23	20.0000		104	59 - 135	5.37	20	
Vinyl chloride	18.8900	0.50	0.13	20.0000		94.4	58 - 132	4.10	20	
Surrogate: 1,2-Dichloroethane-d4	22.59			25.0000		90.4	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.67			25.0000		94.7	73 - 124			
Surrogate: Dibromofluoromethane	23.24			25.0000		93.0	78 - 129			
Surrogate: Toluene-d8	24.83			25.0000		99.3	84 - 117			

Matrix Spike (B1F0040-MS1)

Source: 2101213-16

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	16.9200	0.50	0.11	20.0000	ND	84.6	81 - 133			
1,1,1-Trichloroethane	16.3200	0.50	0.21	20.0000	ND	81.6	93 - 149			M2
1,1,2,2-Tetrachloroethane	15.3500	0.50	0.36	20.0000	ND	76.8	69 - 151			
1,1,2-Trichloroethane	16.9000	0.50	0.25	20.0000	ND	84.5	78 - 130			
1,1-Dichloroethane	15.5900	0.50	0.09	20.0000	ND	78.0	68 - 135			
1,1-Dichloroethene	18.7400	0.50	0.13	20.0000	ND	93.7	77 - 134			
1,1-Dichloropropene	17.8900	0.50	0.13	20.0000	ND	89.4	91 - 138			M2
1,2,3-Trichloropropane	15.7900	0.50	0.39	20.0000	ND	79.0	77 - 136			
1,2,3-Trichlorobenzene	17.7400	0.50	0.18	20.0000	ND	88.7	72 - 129			
1,2,4-Trichlorobenzene	16.5700	0.50	0.16	20.0000	ND	82.8	64 - 135			
1,2,4-Trimethylbenzene	17.1500	0.50	0.14	20.0000	ND	85.8	10 - 179			
1,2-Dibromo-3-chloropropane	15.6100	0.50	0.41	20.0000	ND	78.0	62 - 153			
1,2-Dibromoethane	16.8300	0.50	0.24	20.0000	ND	84.2	80 - 132			
1,2-Dichlorobenzene	17.3000	0.50	0.20	20.0000	ND	86.5	81 - 131			
1,2-Dichloroethane	16.0600	0.50	0.20	20.0000	ND	80.3	68 - 146			
1,2-Dichloropropane	15.8900	0.50	0.15	20.0000	ND	79.4	74 - 136			
1,3,5-Trimethylbenzene	17.0900	0.50	0.13	20.0000	ND	85.4	66 - 149			



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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 B1F0040 - MSVOA_LL_W (continued)

Matrix Spike (B1F0040-MS1) - Continued

Source: 2101213-16

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,3-Dichlorobenzene	16.9000	0.50	0.16	20.0000	ND	84.5	79 - 128		
1,3-Dichloropropane	15.6400	0.50	0.21	20.0000	ND	78.2	80 - 129		M2
1,4-Dichlorobenzene	16.7200	0.50	0.17	20.0000	ND	83.6	84 - 121		M2
2,2-Dichloropropane	15.3400	0.50	0.38	20.0000	ND	76.7	63 - 179		
2-Chlorotoluene	15.9700	0.50	0.11	20.0000	ND	79.8	76 - 142		
4-Chlorotoluene	16.2400	0.50	0.12	20.0000	ND	81.2	72 - 152		
4-Isopropyltoluene	17.7500	0.50	0.11	20.0000	ND	88.8	84 - 141		
Benzene	16.4300	0.50	0.13	20.0000	ND	82.2	79 - 131		
Bromobenzene	16.5800	0.50	0.21	20.0000	ND	82.9	82 - 121		
Bromodichloromethane	16.1900	0.50	0.14	20.0000	ND	81.0	86 - 138		M2
Bromoform	17.3300	0.50	0.20	20.0000	ND	86.6	80 - 136		
Bromomethane	28.7100	0.50	0.40	20.0000	ND	144	35 - 194		
Carbon tetrachloride	17.6900	0.50	0.09	20.0000	ND	88.4	73 - 176		
Chlorobenzene	16.3300	0.50	0.13	20.0000	ND	81.6	81 - 124		
Chloroethane	21.0800	0.50	0.15	20.0000	ND	105	0 - 257		
Chloroform	15.3700	0.50	0.11	20.0000	ND	76.8	76 - 139		
Chloromethane	23.1500	0.50	0.12	20.0000	ND	116	27 - 144		
cis-1,2-Dichloroethene	15.2100	0.50	0.14	20.0000	ND	76.0	69 - 139		
cis-1,3-Dichloropropene	16.2200	0.50	0.13	20.0000	ND	81.1	67 - 149		
Dibromochloromethane	16.2100	0.50	0.16	20.0000	ND	81.0	91 - 131		M2
Dibromomethane	16.2600	0.50	0.19	20.0000	ND	81.3	70 - 134		
Dichlorodifluoromethane	37.1100	0.50	0.18	20.0000	ND	186	0 - 161		M2
Ethylbenzene	16.6900	0.50	0.13	20.0000	ND	83.4	89 - 134		M2
Hexachlorobutadiene	17.8200	0.50	0.15	20.0000	ND	89.1	73 - 137		
Isopropylbenzene	16.3500	0.50	0.10	20.0000	ND	81.8	72 - 152		
m,p-Xylene	34.0700	1.0	0.19	40.0000	ND	85.2	82 - 141		
Methylene chloride	17.3600	1.0	0.71	20.0000	ND	86.8	74 - 133		
n-Butylbenzene	16.5100	0.50	0.11	20.0000	ND	82.6	65 - 164		
n-Propylbenzene	16.6000	0.50	0.10	20.0000	ND	83.0	73 - 161		
Naphthalene	17.3500	0.50	0.41	20.0000	0.690000	83.3	59 - 105		
o-Xylene	16.4100	0.50	0.13	20.0000	ND	82.0	90 - 134		M2
sec-Butylbenzene	17.6800	0.50	0.09	20.0000	ND	88.4	80 - 157		
Styrene	15.3800	0.50	0.13	20.0000	ND	76.9	0 - 222		
tert-Butylbenzene	17.0100	0.50	0.09	20.0000	ND	85.0	88 - 141		M2
Tetrachloroethene	17.9800	0.50	0.10	20.0000	ND	89.9	75 - 136		
Toluene	17.5500	0.50	0.12	20.0000	ND	87.8	82 - 132		
trans-1,2-Dichloroethene	16.8500	0.50	0.09	20.0000	ND	84.2	65 - 135		
Trichloroethene	17.3400	0.50	0.10	20.0000	ND	86.7	75 - 128		
Trichlorofluoromethane	24.8200	0.50	0.23	20.0000	ND	124	89 - 143		
Vinyl chloride	22.5800	0.50	0.13	20.0000	ND	113	50 - 148		

Surrogate: 1,2-Dichloroethane-d4 21.63 25.0000 86.5 64 - 155



Certificate of Analysis

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Report To : Steve Netto

Reported : 06/15/2021

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

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

Batch B1F0040 - MSVOA_LL_W (continued)

Matrix Spike (B1F0040-MS1) - Continued

Source: 2101213-16

Prepared: 6/2/2021 Analyzed: 6/2/2021

Surrogate: 4-Bromofluorobenzene	23.38		25.0000		93.5	73 - 124			
Surrogate: Dibromofluoromethane	22.21		25.0000		88.8	78 - 129			
Surrogate: Toluene-d8	25.12		25.0000		100	84 - 117			

Matrix Spike Dup (B1F0040-MSD1)

Source: 2101213-16

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	17.8800	0.50	0.11	20.0000	ND	89.4	81 - 133	5.52	20	
1,1,1-Trichloroethane	17.9000	0.50	0.21	20.0000	ND	89.5	93 - 149	9.23	20	M2
1,1,2,2-Tetrachloroethane	15.9300	0.50	0.36	20.0000	ND	79.6	69 - 151	3.71	20	
1,1,2-Trichloroethane	17.8100	0.50	0.25	20.0000	ND	89.0	78 - 130	5.24	20	
1,1-Dichloroethane	16.9600	0.50	0.09	20.0000	ND	84.8	68 - 135	8.42	20	
1,1-Dichloroethene	20.5800	0.50	0.13	20.0000	ND	103	77 - 134	9.36	20	
1,1-Dichloropropene	18.5200	0.50	0.13	20.0000	ND	92.6	91 - 138	3.46	20	
1,2,3-Trichloropropane	15.7000	0.50	0.39	20.0000	ND	78.5	77 - 136	0.572	20	
1,2,3-Trichlorobenzene	18.4900	0.50	0.18	20.0000	ND	92.4	72 - 129	4.14	20	
1,2,4-Trichlorobenzene	17.1000	0.50	0.16	20.0000	ND	85.5	64 - 135	3.15	20	
1,2,4-Trimethylbenzene	17.5200	0.50	0.14	20.0000	ND	87.6	10 - 179	2.13	20	
1,2-Dibromo-3-chloropropane	18.0600	0.50	0.41	20.0000	ND	90.3	62 - 153	14.6	20	
1,2-Dibromoethane	17.5400	0.50	0.24	20.0000	ND	87.7	80 - 132	4.13	20	
1,2-Dichlorobenzene	18.0200	0.50	0.20	20.0000	ND	90.1	81 - 131	4.08	20	
1,2-Dichloroethane	16.9000	0.50	0.20	20.0000	ND	84.5	68 - 146	5.10	20	
1,2-Dichloropropane	16.9000	0.50	0.15	20.0000	ND	84.5	74 - 136	6.16	20	
1,3,5-Trimethylbenzene	17.1900	0.50	0.13	20.0000	ND	86.0	66 - 149	0.583	20	
1,3-Dichlorobenzene	17.3100	0.50	0.16	20.0000	ND	86.6	79 - 128	2.40	20	
1,3-Dichloropropane	16.4900	0.50	0.21	20.0000	ND	82.4	80 - 129	5.29	20	
1,4-Dichlorobenzene	17.1400	0.50	0.17	20.0000	ND	85.7	84 - 121	2.48	20	
2,2-Dichloropropane	16.7500	0.50	0.38	20.0000	ND	83.8	63 - 179	8.79	20	
2-Chlorotoluene	16.3500	0.50	0.11	20.0000	ND	81.8	76 - 142	2.35	20	
4-Chlorotoluene	16.5500	0.50	0.12	20.0000	ND	82.8	72 - 152	1.89	20	
4-Isopropyltoluene	17.9000	0.50	0.11	20.0000	ND	89.5	84 - 141	0.842	20	
Benzene	17.2000	0.50	0.13	20.0000	ND	86.0	79 - 131	4.58	20	
Bromobenzene	17.0200	0.50	0.21	20.0000	ND	85.1	82 - 121	2.62	20	
Bromodichloromethane	16.6900	0.50	0.14	20.0000	ND	83.4	86 - 138	3.04	20	M2
Bromoform	18.3900	0.50	0.20	20.0000	ND	92.0	80 - 136	5.94	20	
Bromomethane	31.2100	0.50	0.40	20.0000	ND	156	35 - 194	8.34	20	
Carbon tetrachloride	18.6900	0.50	0.09	20.0000	ND	93.4	73 - 176	5.50	20	
Chlorobenzene	17.4900	0.50	0.13	20.0000	ND	87.4	81 - 124	6.86	20	
Chloroethane	21.9300	0.50	0.15	20.0000	ND	110	0 - 257	3.95	20	
Chloroform	16.3600	0.50	0.11	20.0000	ND	81.8	76 - 139	6.24	20	
Chloromethane	25.1300	0.50	0.12	20.0000	ND	126	27 - 144	8.20	20	
cis-1,2-Dichloroethene	17.4400	0.50	0.14	20.0000	ND	87.2	69 - 139	13.7	20	
cis-1,3-Dichloropropene	17.3400	0.50	0.13	20.0000	ND	86.7	67 - 149	6.67	20	
Dibromochloromethane	17.3700	0.50	0.16	20.0000	ND	86.8	91 - 131	6.91	20	M2



Certificate of Analysis

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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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0040 - MSVOA_LL_W (continued)

Matrix Spike Dup (B1F0040-MSD1) - Continued

Source: 2101213-16

Prepared: 6/2/2021 Analyzed: 6/2/2021

Dibromomethane	16.8700	0.50	0.19	20.0000	ND	84.4	70 - 134	3.68	20	
Dichlorodifluoromethane	38.9200	0.50	0.18	20.0000	ND	195	0 - 161	4.76	20	M2
Ethylbenzene	17.7200	0.50	0.13	20.0000	ND	88.6	89 - 134	5.99	20	M2
Hexachlorobutadiene	18.1000	0.50	0.15	20.0000	ND	90.5	73 - 137	1.56	20	
Isopropylbenzene	17.1900	0.50	0.10	20.0000	ND	86.0	72 - 152	5.01	20	
m,p-Xylene	36.4400	1.0	0.19	40.0000	ND	91.1	82 - 141	6.72	20	
Methylene chloride	19.0700	1.0	0.71	20.0000	ND	95.4	74 - 133	9.39	20	
n-Butylbenzene	17.1400	0.50	0.11	20.0000	ND	85.7	65 - 164	3.74	20	
n-Propylbenzene	16.9000	0.50	0.10	20.0000	ND	84.5	73 - 161	1.79	20	
Naphthalene	17.4400	0.50	0.41	20.0000	0.690000	83.8	59 - 105	0.517	20	
o-Xylene	17.8200	0.50	0.13	20.0000	ND	89.1	90 - 134	8.24	20	M2
sec-Butylbenzene	18.1000	0.50	0.09	20.0000	ND	90.5	80 - 157	2.35	20	
Styrene	16.1800	0.50	0.13	20.0000	ND	80.9	0 - 222	5.07	20	
tert-Butylbenzene	17.5300	0.50	0.09	20.0000	ND	87.6	88 - 141	3.01	20	M2
Tetrachloroethene	18.6700	0.50	0.10	20.0000	ND	93.4	75 - 136	3.77	20	
Toluene	18.5600	0.50	0.12	20.0000	ND	92.8	82 - 132	5.59	20	
trans-1,2-Dichloroethene	18.2300	0.50	0.09	20.0000	ND	91.2	65 - 135	7.87	20	
Trichloroethene	18.5300	0.50	0.10	20.0000	ND	92.6	75 - 128	6.64	20	
Trichlorofluoromethane	25.3500	0.50	0.23	20.0000	ND	127	89 - 143	2.11	20	
Vinyl chloride	23.6300	0.50	0.13	20.0000	ND	118	50 - 148	4.54	20	
Surrogate: 1,2-Dichloroethane-d4	22.45			25.0000		89.8	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.71			25.0000		94.8	73 - 124			
Surrogate: Dibromofluoromethane	23.01			25.0000		92.0	78 - 129			
Surrogate: Toluene-d8	25.43			25.0000		102	84 - 117			



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Notes and Definitions

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.
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.

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																ANALYSIS REQUESTED																Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING				Laboratory
D. Scario																																												ATL
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	NaOH/AlCl3	NaOH/Zn	Ice	40-ml VOA	1 L Amber	250-ml poly	250-ml Amber	VOCs by EPA 8260B	1,4 Dioxane 8270 SIM	1,4-Dioxane 8270 MOD	CO2 by SM4500	Dissolved Sulfide by SM4500 S2-d	Total Sulfide by SM-4500 S2-d	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															
	TB-05262021	05.26.21	0800	X	X				X	3				X							X										Report J Flags													
	MW-30A		0852	X	X				X	3				X							X																							
	↓		↓	X							1				X								X																					
	MW-30B		0940	X	X					3				X									X																					
	↓		↓	X							1				X																													
	MW-3000B		1115	X	X					3				X									X																					
	↓		↓	X							1				X																													
	MW-32B		1105	X	X					3				X									X																					
	↓		↓	X							1				X																													
	MW-34B		1306	X	X					3				X									X																					
	↓		↓	X							1					X																												
Total number of containers per analysis:																																								Total No. of Containers:				
Relinquished By: / Company:				Date / Time				Received By: / Company				Date / Time																				Total No. of Containers:												
J. Sam / H&A				05.26.21 17:05				Max Rothacker				5/26/21 17:05																																
Relinquished By: / Company:				Date / Time				Received By: / Company				Date / Time																																
Max Rothacker				5/26/21 17:55				Jani Carter				5/26/21 17:55																																

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

Send Results to:
Steve Netto
 9171 Towne Centre Drive
 Suite 375
 San Diego, CA 92122
 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.

4.6 Temperature on receipt



Fax 858.455.6533

Date: 5/26/21
Page 2 of 2

[illegible]

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.

4.6 Temperature on receipt

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-60588-1
Client Project/Site: 2101198

For:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, California 90807

Attn: Rahul Nair



Authorized for release by:
6/10/2021 10:01:25 AM

Lori Thompson, Project Manager I
(714)895-5494
Lori.Thompson@eurofinset.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: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

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: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

Job ID: 570-60588-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative
570-60588-1

Comments

No additional comments.

Receipt

The samples were received on 6/1/2021 6:00 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 3.4° C.

GC/MS Semi VOA

Method 8270C SIM ID: Results for sample 2101198-09/MW-21 (570-60588-8) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

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.

Detection Summary

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

Client Sample ID: 2101198-05/MW-32B

Lab Sample ID: 570-60588-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.7		0.50	ug/L	1		8270C SIM ID	Total/NA

Client Sample ID: 2101198-06/MW-34B

Lab Sample ID: 570-60588-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	23		0.50	ug/L	1		8270C SIM ID	Total/NA

Client Sample ID: 2101198-07/MW-40

Lab Sample ID: 570-60588-6

No Detections.

Client Sample ID: 2101198-08/EW-01

Lab Sample ID: 570-60588-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	34		0.50	ug/L	1		8270C SIM ID	Total/NA

Client Sample ID: 2101198-09/MW-21

Lab Sample ID: 570-60588-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane - DL	590		10	ug/L	20		8270C SIM ID	Total/NA

Client Sample ID: 2101198-10/MW-36

Lab Sample ID: 570-60588-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	6.9		0.50	ug/L	1		8270C SIM ID	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

Client Sample Results

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

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

Client Sample ID: 2101198-05/MW-32B

Date Collected: 05/26/21 11:05

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60588-4

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.7		0.50	ug/L		06/02/21 07:42	06/04/21 19:15	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	42		15 - 150			06/02/21 07:42	06/04/21 19:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	112		46 - 128			06/02/21 07:42	06/04/21 19:15	1

Client Sample ID: 2101198-06/MW-34B

Date Collected: 05/26/21 13:06

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60588-5

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	23		0.50	ug/L		06/02/21 07:42	06/04/21 19:30	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	54		15 - 150			06/02/21 07:42	06/04/21 19:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	115		46 - 128			06/02/21 07:42	06/04/21 19:30	1

Client Sample ID: 2101198-07/MW-40

Date Collected: 05/26/21 08:59

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60588-6

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	ug/L		06/02/21 07:42	06/04/21 14:07	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	52		15 - 150			06/02/21 07:42	06/04/21 14:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	103		46 - 128			06/02/21 07:42	06/04/21 14:07	1

Client Sample ID: 2101198-08/EW-01

Date Collected: 05/26/21 10:20

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60588-7

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	34		0.50	ug/L		06/02/21 07:42	06/04/21 19:44	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	34		15 - 150			06/02/21 07:42	06/04/21 19:44	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	116		46 - 128			06/02/21 07:42	06/04/21 19:44	1

Client Sample ID: 2101198-10/MW-36

Date Collected: 05/26/21 14:03

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60588-9

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	6.9		0.50	ug/L		06/02/21 07:42	06/04/21 20:13	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	52		15 - 150			06/02/21 07:42	06/04/21 20:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	106		46 - 128			06/02/21 07:42	06/04/21 20:13	1

Eurofins Calscience LLC

Client Sample Results

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

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

Client Sample ID: 2101198-09/MW-21

Date Collected: 05/26/21 10:47

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60588-8

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	590		10	ug/L		06/02/21 07:42	06/08/21 11:09	20
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	52		15 - 150			06/02/21 07:42	06/08/21 11:09	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	78		46 - 128			06/02/21 07:42	06/08/21 11:09	20

Surrogate Summary

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

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 (46-128)
570-60588-4	2101198-05/MW-32B	112
570-60588-5	2101198-06/MW-34B	115
570-60588-6	2101198-07/MW-40	103
570-60588-6 MS	2101198-07/MW-40	114
570-60588-6 MSD	2101198-07/MW-40	120
570-60588-7	2101198-08/EW-01	116
570-60588-8 - DL	2101198-09/MW-21	78
570-60588-9	2101198-10/MW-36	106
LCS 570-154440/2-A	Lab Control Sample	107
LCSD 570-154440/3-A	Lab Control Sample Dup	98
MB 570-154440/1-A	Method Blank	120

Surrogate Legend
NBZ = Nitrobenzene-d5 (Surr)

Isotope Dilution Summary

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

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	
		(15-150)	
570-60588-4	2101198-05/MW-32B	42	
570-60588-5	2101198-06/MW-34B	54	
570-60588-6	2101198-07/MW-40	52	
570-60588-6 MS	2101198-07/MW-40	54	
570-60588-6 MSD	2101198-07/MW-40	37	
570-60588-7	2101198-08/EW-01	34	
570-60588-8 - DL	2101198-09/MW-21	52	
570-60588-9	2101198-10/MW-36	52	
LCS 570-154440/2-A	Lab Control Sample	55	
LCSD 570-154440/3-A	Lab Control Sample Dup	59	
MB 570-154440/1-A	Method Blank	52	

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

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

Lab Sample ID: MB 570-154440/1-A

Matrix: Water

Analysis Batch: 155146

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 154440

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	ug/L		06/02/21 07:42	06/04/21 12:54	1
Isotope Dilution	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	52		15 - 150			06/02/21 07:42	06/04/21 12:54	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	120		46 - 128			06/02/21 07:42	06/04/21 12:54	1

Lab Sample ID: LCS 570-154440/2-A

Matrix: Water

Analysis Batch: 155146

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	21.23		ug/L		106	57 - 136
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	55		15 - 150				
Surrogate	%Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5 (Surr)	107		46 - 128				

Lab Sample ID: LCSD 570-154440/3-A

Matrix: Water

Analysis Batch: 155146

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	20.0	21.84		ug/L		109	57 - 136	3	20
Isotope Dilution	%Recovery	LCSD Qualifier	Limits						
1,4-Dioxane-d8	59		15 - 150						
Surrogate	%Recovery	LCSD Qualifier	Limits						
Nitrobenzene-d5 (Surr)	98		46 - 128						

Lab Sample ID: 570-60588-6 MS

Matrix: Water

Analysis Batch: 155146

Client Sample ID: 2101198-07/MW-40

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	ND		20.0	22.35		ug/L		112	45 - 139
Isotope Dilution	%Recovery	MS Qualifier	Limits						
1,4-Dioxane-d8	54		15 - 150						
Surrogate	%Recovery	MS Qualifier	Limits						
Nitrobenzene-d5 (Surr)	114		46 - 128						

Eurofins Calscience LLC

QC Sample Results

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

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

Lab Sample ID: 570-60588-6 MSD

Matrix: Water

Analysis Batch: 155146

Client Sample ID: 2101198-07/MW-40

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	22.43		ug/L		112	45 - 139	0	17
	MSD	MSD									
Isotope Dilution	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8	37		15 - 150								
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5 (Surr)	120		46 - 128								

QC Association Summary

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

GC/MS Semi VOA

Prep Batch: 154440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60588-4	2101198-05/MW-32B	Total/NA	Water	3510C	
570-60588-5	2101198-06/MW-34B	Total/NA	Water	3510C	
570-60588-6	2101198-07/MW-40	Total/NA	Water	3510C	
570-60588-7	2101198-08/EW-01	Total/NA	Water	3510C	
570-60588-8 - DL	2101198-09/MW-21	Total/NA	Water	3510C	
570-60588-9	2101198-10/MW-36	Total/NA	Water	3510C	
MB 570-154440/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-154440/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-154440/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-60588-6 MS	2101198-07/MW-40	Total/NA	Water	3510C	
570-60588-6 MSD	2101198-07/MW-40	Total/NA	Water	3510C	

Analysis Batch: 155146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60588-4	2101198-05/MW-32B	Total/NA	Water	8270C SIM ID	154440
570-60588-5	2101198-06/MW-34B	Total/NA	Water	8270C SIM ID	154440
570-60588-6	2101198-07/MW-40	Total/NA	Water	8270C SIM ID	154440
570-60588-7	2101198-08/EW-01	Total/NA	Water	8270C SIM ID	154440
570-60588-9	2101198-10/MW-36	Total/NA	Water	8270C SIM ID	154440
MB 570-154440/1-A	Method Blank	Total/NA	Water	8270C SIM ID	154440
LCS 570-154440/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	154440
LCSD 570-154440/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	154440
570-60588-6 MS	2101198-07/MW-40	Total/NA	Water	8270C SIM ID	154440
570-60588-6 MSD	2101198-07/MW-40	Total/NA	Water	8270C SIM ID	154440

Analysis Batch: 155794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60588-8 - DL	2101198-09/MW-21	Total/NA	Water	8270C SIM ID	154440

Lab Chronicle

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

Client Sample ID: 2101198-05/MW-32B

Lab Sample ID: 570-60588-4

Date Collected: 05/26/21 11:05

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 19:15	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Client Sample ID: 2101198-06/MW-34B

Lab Sample ID: 570-60588-5

Date Collected: 05/26/21 13:06

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 19:30	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Client Sample ID: 2101198-07/MW-40

Lab Sample ID: 570-60588-6

Date Collected: 05/26/21 08:59

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 14:07	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Client Sample ID: 2101198-08/EW-01

Lab Sample ID: 570-60588-7

Date Collected: 05/26/21 10:20

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 19:44	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Client Sample ID: 2101198-09/MW-21

Lab Sample ID: 570-60588-8

Date Collected: 05/26/21 10:47

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C	DL		100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID	DL	20			155794	06/08/21 11:09	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Lab Chronicle

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

Client Sample ID: 2101198-10/MW-36

Lab Sample ID: 570-60588-9

Date Collected: 05/26/21 14:03

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 20:13	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

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Accreditation/Certification Summary

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

Laboratory: Eurofins Calscience LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2944	09-30-21
Oregon	NELAP	CA300001	01-30-22

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Method Summary

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

Method	Method Description	Protocol	Laboratory
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Advanced Technology Laboratories
Project/Site: 2101198

Job ID: 570-60588-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-60588-4	2101198-05/MW-32B	Water	05/26/21 11:05	06/01/21 18:00	
570-60588-5	2101198-06/MW-34B	Water	05/26/21 13:06	06/01/21 18:00	
570-60588-6	2101198-07/MW-40	Water	05/26/21 08:59	06/01/21 18:00	
570-60588-7	2101198-08/EW-01	Water	05/26/21 10:20	06/01/21 18:00	
570-60588-8	2101198-09/MW-21	Water	05/26/21 10:47	06/01/21 18:00	
570-60588-9	2101198-10/MW-36	Water	05/26/21 14:03	06/01/21 18:00	

18509

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2101198

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562 989 4045
Fax: 562 989 6348
Project Manager: Rahul Nair
(Rahul.Nair@atlglobal.com)
Sampler: D SEALEE

RECEIVING LABORATORY:

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone: (714) 895-5494
Fax: (714) 894-7501
PO# SC15235-Standard TAT

IMPORTANT : Please include Work Order # and PO # in
your invoice.

QC Requirements

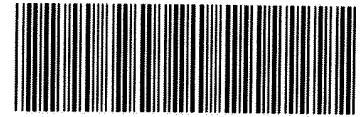
☒ Routine ☐ RWQCB
☐ Caltrans ☐ Level IV*
☐ Legal ☐ Other: _____

* All Level IV sample containers (including
empty ones) must be returned to ATL 30 days
after receipt

EDD Requirements

☐ Standard Excel
☐ Geotracker EDF
☐ Other

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 2101198-02 / MW-30A		Groundwater	05/26/21 08:52	Please Run MS/MSD on sample 2101198-07
8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 1- Amber Unpres - 1000mL	06/08/21 17:00	06/02/21 08 52		
ATL Lab#: 2101198-03 / MW-30B		Groundwater	05/26/21 09:40	
8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 1- Amber Unpres - 1000mL	06/08/21 17:00	06/02/21 09 40		
ATL Lab#: 2101198-04 / MW-3000B		Groundwater	05/26/21 11:15	
8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 1- Amber Unpres - 1000mL	06/08/21 17:00	06/02/21 11 15		



570-60588 Chain of Custody

Approved by.

ATL Project Manager

Released By ATL Sample Control

Released By Courier

Date

Date

Date

17:29

Time

18 00

Time

Received By Courier

Received By Subcontract
Laboratory

Date

Date

Time

Time

Max Rathash 6/1/21 17 30

Danny E 6/1/21 18:00

Released By

Date

Time

Received By

Date

Time

78509

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2101198

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 2101198-05 / MW-32B 8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 1- Amber Unpres - 1000mL	06/08/21 17:00	Groundwater 06/02/21 11 05	05/26/21 11:05	
ATL Lab#: 2101198-06 / MW-34B 8270_Dioxane [1,4-Dioxane by GC/MS Isotope Dilution Technique] 1- Amber Unpres - 1000mL	06/08/21 17:00	Groundwater 06/02/21 13 06	05/26/21 13:06	
ATL Lab#: 2101198-07 / MW-40 8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 3- Amber Unpres - 1000mL	06/08/21 17:00	Groundwater 06/02/21 08 59	05/26/21 08:59	
ATL Lab#: 2101198-08 / EW-01 8270_Dioxane [1,4-Dioxane by GC/MS Isotope Dilution Technique] 1- Amber Unpres - 1000mL	06/08/21 17:00	Groundwater 06/02/21 10 20	05/26/21 10:20	
ATL Lab#: 2101198-09 / MW-21 8270_Dioxane [1,4-Dioxane by GC/MS Isotope Dilution Technique] 1- Amber Unpres - 1000mL	06/08/21 17:00	Groundwater 06/02/21 10 47	05/26/21 10:47	
ATL Lab#: 2101198-10 / MW-36 8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 1- Amber Unpres - 1000mL	06/08/21 17:00	Groundwater 06/02/21 14 03	05/26/21 14:03	

Approved by

ATL Project Manager

Released By ATL Sample Control

Released By Courier

Date

Date

Date

Time

Time

Released By

Date

Time

Received By Courier

Received By Subcontract
Laboratory

Date

Date

Received By

Date

Time

Time

Time

Login Sample Receipt Checklist

Client: Advanced Technology Laboratories

Job Number: 570-60588-1

Login Number: 60588

List Source: Eurofins Calscience LLC

List Number: 1

Creator: Patel, Jayesh

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	



June 15, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2101222
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on May 28, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amy Leung', with the word 'For' written below it.

Amy Leung
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-05272021	2101222-01	Water	5/27/21 8:00	5/28/21 13:00
MW-43	2101222-02	Water	5/27/21 9:05	5/28/21 13:00
MW-33	2101222-03	Water	5/27/21 14:15	5/28/21 13:00
MW-3300	2101222-04	Water	5/27/21 15:00	5/28/21 13:00



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: TB-05272021

Lab ID: 2101222-01

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	B1F0070	06/07/2021	06/07/21 12:55	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 12:55	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0070	06/07/2021	06/07/21 12:55	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0070	06/07/2021	06/07/21 12:55	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 12:55	
1,1-Dichloroethene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 12:55	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 12:55	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 12:55	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 12:55	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0070	06/07/2021	06/07/21 12:55	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0070	06/07/2021	06/07/21 12:55	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 12:55	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 12:55	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 12:55	
Benzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
Bromobenzene	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 12:55	
Bromodichloromethane	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 12:55	
Bromoform	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 12:55	
Bromomethane	ND	0.50	0.40	1	B1F0070	06/07/2021	06/07/21 12:55	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 12:55	
Chlorobenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
Chloroethane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 12:55	
Chloroform	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 12:55	
Chloromethane	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 12:55	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 12:55	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
Dibromochloromethane	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 12:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: TB-05272021

Lab ID: 2101222-01

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
Dibromomethane	ND	0.50	0.19	1	B1F0070	06/07/2021	06/07/21 12:55	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 12:55	
Ethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 12:55	
Isopropylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 12:55	
m,p-Xylene	ND	1.0	0.19	1	B1F0070	06/07/2021	06/07/21 12:55	
Methylene chloride	ND	1.0	0.71	1	B1F0070	06/07/2021	06/07/21 12:55	
n-Butylbenzene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 12:55	
n-Propylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 12:55	
Naphthalene	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 12:55	
o-Xylene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 12:55	
Styrene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 12:55	
Tetrachloroethene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 12:55	
Toluene	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 12:55	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 12:55	
Trichloroethene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 12:55	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0070	06/07/2021	06/07/21 12:55	
Vinyl chloride	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 12:55	
Surrogate: 1,2-Dichloroethane-d4	89.9 %		64 - 155		B1F0070	06/07/2021	06/07/21 12:55	
Surrogate: 4-Bromofluorobenzene	88.7 %		73 - 124		B1F0070	06/07/2021	06/07/21 12:55	
Surrogate: Dibromofluoromethane	90.4 %		78 - 129		B1F0070	06/07/2021	06/07/21 12:55	
Surrogate: Toluene-d8	99.4 %		84 - 117		B1F0070	06/07/2021	06/07/21 12:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-43

Lab ID: 2101222-02

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	B1F0070	06/07/2021	06/07/21 13:20	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 13:20	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0070	06/07/2021	06/07/21 13:20	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0070	06/07/2021	06/07/21 13:20	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:20	
1,1-Dichloroethene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 13:20	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 13:20	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 13:20	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 13:20	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0070	06/07/2021	06/07/21 13:20	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0070	06/07/2021	06/07/21 13:20	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:20	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 13:20	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:20	
Benzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
Bromobenzene	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 13:20	
Bromodichloromethane	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 13:20	
Bromoform	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 13:20	
Bromomethane	ND	0.50	0.40	1	B1F0070	06/07/2021	06/07/21 13:20	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:20	
Chlorobenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
Chloroethane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 13:20	
Chloroform	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:20	
Chloromethane	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 13:20	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 13:20	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
Dibromochloromethane	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 13:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-43

Lab ID: 2101222-02

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
Dibromomethane	ND	0.50	0.19	1	B1F0070	06/07/2021	06/07/21 13:20	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 13:20	
Ethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 13:20	
Isopropylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:20	
m,p-Xylene	ND	1.0	0.19	1	B1F0070	06/07/2021	06/07/21 13:20	
Methylene chloride	ND	1.0	0.71	1	B1F0070	06/07/2021	06/07/21 13:20	
n-Butylbenzene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:20	
n-Propylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:20	
Naphthalene	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 13:20	
o-Xylene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:20	
Styrene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:20	
Tetrachloroethene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:20	
Toluene	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 13:20	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:20	
Trichloroethene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:20	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0070	06/07/2021	06/07/21 13:20	
Vinyl chloride	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:20	
Surrogate: 1,2-Dichloroethane-d4	89.0 %		64 - 155		B1F0070	06/07/2021	06/07/21 13:20	
Surrogate: 4-Bromofluorobenzene	89.4 %		73 - 124		B1F0070	06/07/2021	06/07/21 13:20	
Surrogate: Dibromofluoromethane	91.4 %		78 - 129		B1F0070	06/07/2021	06/07/21 13:20	
Surrogate: Toluene-d8	97.7 %		84 - 117		B1F0070	06/07/2021	06/07/21 13:20	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-33

Lab ID: 2101222-03

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	B1F0070	06/07/2021	06/07/21 13:45	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 13:45	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0070	06/07/2021	06/07/21 13:45	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0070	06/07/2021	06/07/21 13:45	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:45	
1,1-Dichloroethene	5.8	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 13:45	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 13:45	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 13:45	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 13:45	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0070	06/07/2021	06/07/21 13:45	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0070	06/07/2021	06/07/21 13:45	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:45	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 13:45	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:45	
Benzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
Bromobenzene	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 13:45	
Bromodichloromethane	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 13:45	
Bromoform	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 13:45	
Bromomethane	ND	0.50	0.40	1	B1F0070	06/07/2021	06/07/21 13:45	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:45	
Chlorobenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
Chloroethane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 13:45	
Chloroform	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:45	
Chloromethane	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 13:45	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 13:45	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
Dibromochloromethane	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 13:45	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

Client Sample ID: MW-33

Lab ID: 2101222-03

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
Dibromomethane	ND	0.50	0.19	1	B1F0070	06/07/2021	06/07/21 13:45	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 13:45	
Ethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 13:45	
Isopropylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:45	
m,p-Xylene	ND	1.0	0.19	1	B1F0070	06/07/2021	06/07/21 13:45	
Methylene chloride	ND	1.0	0.71	1	B1F0070	06/07/2021	06/07/21 13:45	
n-Butylbenzene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 13:45	
n-Propylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:45	
Naphthalene	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 13:45	
o-Xylene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:45	
Styrene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:45	
Tetrachloroethene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:45	
Toluene	1.4	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 13:45	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 13:45	
Trichloroethene	0.67	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 13:45	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0070	06/07/2021	06/07/21 13:45	
Vinyl chloride	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 13:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>87.5 %</i>		<i>64 - 155</i>		B1F0070	06/07/2021	<i>06/07/21 13:45</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.8 %</i>		<i>73 - 124</i>		B1F0070	06/07/2021	<i>06/07/21 13:45</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>91.5 %</i>		<i>78 - 129</i>		B1F0070	06/07/2021	<i>06/07/21 13:45</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.8 %</i>		<i>84 - 117</i>		B1F0070	06/07/2021	<i>06/07/21 13:45</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-3300

Lab ID: 2101222-04

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	B1F0070	06/07/2021	06/07/21 14:10	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 14:10	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0070	06/07/2021	06/07/21 14:10	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0070	06/07/2021	06/07/21 14:10	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 14:10	
1,1-Dichloroethene	5.9	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 14:10	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 14:10	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 14:10	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 14:10	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0070	06/07/2021	06/07/21 14:10	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0070	06/07/2021	06/07/21 14:10	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 14:10	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 14:10	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 14:10	
Benzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
Bromobenzene	ND	0.50	0.21	1	B1F0070	06/07/2021	06/07/21 14:10	
Bromodichloromethane	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 14:10	
Bromoform	ND	0.50	0.20	1	B1F0070	06/07/2021	06/07/21 14:10	
Bromomethane	ND	0.50	0.40	1	B1F0070	06/07/2021	06/07/21 14:10	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 14:10	
Chlorobenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
Chloroethane	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 14:10	
Chloroform	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 14:10	
Chloromethane	ND	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 14:10	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1F0070	06/07/2021	06/07/21 14:10	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
Dibromochloromethane	ND	0.50	0.16	1	B1F0070	06/07/2021	06/07/21 14:10	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Client Sample ID: MW-3300

Lab ID: 2101222-04

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
Dibromomethane	ND	0.50	0.19	1	B1F0070	06/07/2021	06/07/21 14:10	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0070	06/07/2021	06/07/21 14:10	
Ethylbenzene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0070	06/07/2021	06/07/21 14:10	
Isopropylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 14:10	
m,p-Xylene	ND	1.0	0.19	1	B1F0070	06/07/2021	06/07/21 14:10	
Methylene chloride	ND	1.0	0.71	1	B1F0070	06/07/2021	06/07/21 14:10	
n-Butylbenzene	ND	0.50	0.11	1	B1F0070	06/07/2021	06/07/21 14:10	
n-Propylbenzene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 14:10	
Naphthalene	ND	0.50	0.41	1	B1F0070	06/07/2021	06/07/21 14:10	
o-Xylene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 14:10	
Styrene	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 14:10	
Tetrachloroethene	ND	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 14:10	
Toluene	1.2	0.50	0.12	1	B1F0070	06/07/2021	06/07/21 14:10	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0070	06/07/2021	06/07/21 14:10	
Trichloroethene	0.59	0.50	0.10	1	B1F0070	06/07/2021	06/07/21 14:10	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0070	06/07/2021	06/07/21 14:10	
Vinyl chloride	ND	0.50	0.13	1	B1F0070	06/07/2021	06/07/21 14:10	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>88.1 %</i>		<i>64 - 155</i>		B1F0070	06/07/2021	<i>06/07/21 14:10</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.7 %</i>		<i>73 - 124</i>		B1F0070	06/07/2021	<i>06/07/21 14:10</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>91.9 %</i>		<i>78 - 129</i>		B1F0070	06/07/2021	<i>06/07/21 14:10</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>		<i>84 - 117</i>		B1F0070	06/07/2021	<i>06/07/21 14:10</i>	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/15/2021

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 B1F0070 - MSVOA_LL_W

Blank (B1F0070-BLK1)

Prepared: 6/7/2021 Analyzed: 6/7/2021

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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 B1F0070 - MSVOA_LL_W (continued)

Blank (B1F0070-BLK1) - Continued

Prepared: 6/7/2021 Analyzed: 6/7/2021

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
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	22.33		25.0000	89.3	64 - 155
Surrogate: 4-Bromofluorobenzene	23.06		25.0000	92.2	73 - 124
Surrogate: Dibromofluoromethane	22.54		25.0000	90.2	78 - 129
Surrogate: Toluene-d8	25.10		25.0000	100	84 - 117

LCS (B1F0070-BS1)

Prepared: 6/7/2021 Analyzed: 6/7/2021

1,1,1,2-Tetrachloroethane	17.7800	0.50	0.11	20.0000	88.9	79 - 116
1,1,1-Trichloroethane	16.7100	0.50	0.21	20.0000	83.6	73 - 130
1,1,2,2-Tetrachloroethane	15.0400	0.50	0.36	20.0000	75.2	71 - 122
1,1,2-Trichloroethane	17.2700	0.50	0.25	20.0000	86.4	70 - 124
1,1-Dichloroethane	15.6500	0.50	0.09	20.0000	78.2	69 - 128
1,1-Dichloroethene	17.8200	0.50	0.13	20.0000	89.1	65 - 137
1,1-Dichloropropene	17.1000	0.50	0.13	20.0000	85.5	74 - 129
1,2,3-Trichloropropane	15.1900	0.50	0.39	20.0000	76.0	74 - 123
1,2,3-Trichlorobenzene	17.6400	0.50	0.18	20.0000	88.2	59 - 130
1,2,4-Trichlorobenzene	17.1700	0.50	0.16	20.0000	85.8	65 - 125
1,2,4-Trimethylbenzene	17.1000	0.50	0.14	20.0000	85.5	88 - 124
1,2-Dibromo-3-chloropropane	16.5100	0.50	0.41	20.0000	82.6	61 - 127
1,2-Dibromoethane	17.0900	0.50	0.24	20.0000	85.4	72 - 125
1,2-Dichlorobenzene	17.3800	0.50	0.20	20.0000	86.9	84 - 113
1,2-Dichloroethane	16.0500	0.50	0.20	20.0000	80.2	68 - 130
1,2-Dichloropropane	15.7900	0.50	0.15	20.0000	79.0	77 - 121
1,3,5-Trimethylbenzene	16.7500	0.50	0.13	20.0000	83.8	83 - 124

L3



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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 B1F0070 - MSVOA_LL_W (continued)

LCS (B1F0070-BS1) - Continued

Prepared: 6/7/2021 Analyzed: 6/7/2021

1,3-Dichlorobenzene	17.2000	0.50	0.16	20.0000		86.0	83 - 112		
1,3-Dichloropropane	16.0600	0.50	0.21	20.0000		80.3	77 - 119		
1,4-Dichlorobenzene	17.0500	0.50	0.17	20.0000		85.2	79 - 115		
2,2-Dichloropropane	17.0700	0.50	0.38	20.0000		85.4	67 - 149		
2-Chlorotoluene	15.7800	0.50	0.11	20.0000		78.9	81 - 119		L3
4-Chlorotoluene	16.0100	0.50	0.12	20.0000		80.0	86 - 117		L3
4-Isopropyltoluene	17.2600	0.50	0.11	20.0000		86.3	82 - 131		
Benzene	16.0500	0.50	0.13	20.0000		80.2	75 - 124		
Bromobenzene	16.6600	0.50	0.21	20.0000		83.3	82 - 108		
Bromodichloromethane	16.8800	0.50	0.14	20.0000		84.4	80 - 120		
Bromoform	18.9100	0.50	0.20	20.0000		94.6	70 - 123		
Bromomethane	21.0900	0.50	0.40	20.0000		105	44 - 151		
Carbon tetrachloride	17.9300	0.50	0.09	20.0000		89.6	62 - 140		
Chlorobenzene	16.9500	0.50	0.13	20.0000		84.8	80 - 112		
Chloroethane	17.2500	0.50	0.15	20.0000		86.2	42 - 167		
Chloroform	16.0400	0.50	0.11	20.0000		80.2	77 - 122		
Chloromethane	17.5400	0.50	0.12	20.0000		87.7	33 - 153		
cis-1,2-Dichloroethene	15.9200	0.50	0.14	20.0000		79.6	75 - 121		
cis-1,3-Dichloropropene	16.7200	0.50	0.13	20.0000		83.6	73 - 127		
Dibromochloromethane	17.4300	0.50	0.16	20.0000		87.2	77 - 122		
Dibromomethane	16.7900	0.50	0.19	20.0000		84.0	75 - 121		
Dichlorodifluoromethane	28.2300	0.50	0.18	20.0000		141	0 - 171		
Ethylbenzene	17.0800	0.50	0.13	20.0000		85.4	82 - 119		
Hexachlorobutadiene	17.1700	0.50	0.15	20.0000		85.8	71 - 131		
Isopropylbenzene	16.2400	0.50	0.10	20.0000		81.2	75 - 126		
m,p-Xylene	35.4200	1.0	0.19	40.0000		88.6	86 - 119		
Methylene chloride	17.3900	1.0	0.71	20.0000		87.0	76 - 125		
n-Butylbenzene	16.2900	0.50	0.11	20.0000		81.4	81 - 125		
n-Propylbenzene	16.0800	0.50	0.10	20.0000		80.4	78 - 130		
Naphthalene	17.0700	0.50	0.41	20.0000		85.4	47 - 128		
o-Xylene	17.1900	0.50	0.13	20.0000		86.0	85 - 119		
sec-Butylbenzene	16.9900	0.50	0.09	20.0000		85.0	78 - 130		
Styrene	18.9500	0.50	0.13	20.0000		94.8	62 - 148		
tert-Butylbenzene	16.5300	0.50	0.09	20.0000		82.6	77 - 125		
Tetrachloroethene	18.5000	0.50	0.10	20.0000		92.5	73 - 120		
Toluene	17.5800	0.50	0.12	20.0000		87.9	79 - 119		
trans-1,2-Dichloroethene	16.9600	0.50	0.09	20.0000		84.8	70 - 129		
Trichloroethene	17.2500	0.50	0.10	20.0000		86.2	73 - 117		
Trichlorofluoromethane	20.6000	0.50	0.23	20.0000		103	59 - 135		
Vinyl chloride	17.5500	0.50	0.13	20.0000		87.8	58 - 132		

Surrogate: 1,2-Dichloroethane-d4 21.80 25.0000 87.2 64 - 155



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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

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

Batch B1F0070 - MSVOA_LL_W (continued)

LCS (B1F0070-BS1) - Continued

Prepared: 6/7/2021 Analyzed: 6/7/2021

Surrogate: 4-Bromofluorobenzene	24.02		25.0000		96.1	73 - 124			
Surrogate: Dibromofluoromethane	22.47		25.0000		89.9	78 - 129			
Surrogate: Toluene-d8	24.83		25.0000		99.3	84 - 117			

LCS Dup (B1F0070-BSD1)

Prepared: 6/7/2021 Analyzed: 6/7/2021

1,1,1,2-Tetrachloroethane	17.1300	0.50	0.11	20.0000	85.6	79 - 116	3.72	20	
1,1,1-Trichloroethane	16.3100	0.50	0.21	20.0000	81.6	73 - 130	2.42	20	
1,1,2,2-Tetrachloroethane	14.9500	0.50	0.36	20.0000	74.8	71 - 122	0.600	20	
1,1,2-Trichloroethane	17.5000	0.50	0.25	20.0000	87.5	70 - 124	1.32	20	
1,1-Dichloroethane	15.0400	0.50	0.09	20.0000	75.2	69 - 128	3.98	20	
1,1-Dichloroethene	17.9500	0.50	0.13	20.0000	89.8	65 - 137	0.727	20	
1,1-Dichloropropene	16.7600	0.50	0.13	20.0000	83.8	74 - 129	2.01	20	
1,2,3-Trichloropropane	14.5500	0.50	0.39	20.0000	72.8	74 - 123	4.30	20	L3
1,2,3-Trichlorobenzene	16.9400	0.50	0.18	20.0000	84.7	59 - 130	4.05	20	
1,2,4-Trichlorobenzene	16.1400	0.50	0.16	20.0000	80.7	65 - 125	6.18	20	
1,2,4-Trimethylbenzene	16.0000	0.50	0.14	20.0000	80.0	88 - 124	6.65	20	L3
1,2-Dibromo-3-chloropropane	17.0700	0.50	0.41	20.0000	85.4	61 - 127	3.34	20	
1,2-Dibromoethane	17.3000	0.50	0.24	20.0000	86.5	72 - 125	1.22	20	
1,2-Dichlorobenzene	16.6600	0.50	0.20	20.0000	83.3	84 - 113	4.23	20	L3
1,2-Dichloroethane	16.5600	0.50	0.20	20.0000	82.8	68 - 130	3.13	20	
1,2-Dichloropropane	15.6100	0.50	0.15	20.0000	78.0	77 - 121	1.15	20	
1,3,5-Trimethylbenzene	15.7500	0.50	0.13	20.0000	78.8	83 - 124	6.15	20	L3
1,3-Dichlorobenzene	16.1000	0.50	0.16	20.0000	80.5	83 - 112	6.61	20	L3
1,3-Dichloropropane	15.2500	0.50	0.21	20.0000	76.2	77 - 119	5.17	20	L3
1,4-Dichlorobenzene	16.1000	0.50	0.17	20.0000	80.5	79 - 115	5.73	20	
2,2-Dichloropropane	15.8000	0.50	0.38	20.0000	79.0	67 - 149	7.73	20	
2-Chlorotoluene	14.9500	0.50	0.11	20.0000	74.8	81 - 119	5.40	20	L3
4-Chlorotoluene	15.0300	0.50	0.12	20.0000	75.2	86 - 117	6.31	20	L3
4-Isopropyltoluene	16.1700	0.50	0.11	20.0000	80.8	82 - 131	6.52	20	L3
Benzene	15.7400	0.50	0.13	20.0000	78.7	75 - 124	1.95	20	
Bromobenzene	16.1200	0.50	0.21	20.0000	80.6	82 - 108	3.29	20	L3
Bromodichloromethane	16.5300	0.50	0.14	20.0000	82.6	80 - 120	2.10	20	
Bromoform	18.2600	0.50	0.20	20.0000	91.3	70 - 123	3.50	20	
Bromomethane	20.2300	0.50	0.40	20.0000	101	44 - 151	4.16	20	
Carbon tetrachloride	17.6600	0.50	0.09	20.0000	88.3	62 - 140	1.52	20	
Chlorobenzene	16.0000	0.50	0.13	20.0000	80.0	80 - 112	5.77	20	
Chloroethane	16.6500	0.50	0.15	20.0000	83.2	42 - 167	3.54	20	
Chloroform	15.1600	0.50	0.11	20.0000	75.8	77 - 122	5.64	20	L3
Chloromethane	17.2900	0.50	0.12	20.0000	86.4	33 - 153	1.44	20	
cis-1,2-Dichloroethene	15.4600	0.50	0.14	20.0000	77.3	75 - 121	2.93	20	
cis-1,3-Dichloropropene	16.5600	0.50	0.13	20.0000	82.8	73 - 127	0.962	20	
Dibromochloromethane	16.5500	0.50	0.16	20.0000	82.8	77 - 122	5.18	20	



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Reported : 06/15/2021

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 B1F0070 - MSVOA_LL_W (continued)

LCS Dup (B1F0070-BSD1) - Continued

Prepared: 6/7/2021 Analyzed: 6/7/2021

Dibromomethane	16.3100	0.50	0.19	20.0000		81.6	75 - 121	2.90	20	
Dichlorodifluoromethane	26.9200	0.50	0.18	20.0000		135	0 - 171	4.75	20	
Ethylbenzene	16.0000	0.50	0.13	20.0000		80.0	82 - 119	6.53	20	L3
Hexachlorobutadiene	16.0400	0.50	0.15	20.0000		80.2	71 - 131	6.81	20	
Isopropylbenzene	15.0500	0.50	0.10	20.0000		75.2	75 - 126	7.61	20	
m,p-Xylene	32.9800	1.0	0.19	40.0000		82.4	86 - 119	7.13	20	L3
Methylene chloride	16.8500	1.0	0.71	20.0000		84.2	76 - 125	3.15	20	
n-Butylbenzene	15.0800	0.50	0.11	20.0000		75.4	81 - 125	7.71	20	L3
n-Propylbenzene	14.8800	0.50	0.10	20.0000		74.4	78 - 130	7.75	20	L3
Naphthalene	16.1100	0.50	0.41	20.0000		80.6	47 - 128	5.79	20	
o-Xylene	16.0400	0.50	0.13	20.0000		80.2	85 - 119	6.92	20	L3
sec-Butylbenzene	15.8700	0.50	0.09	20.0000		79.4	78 - 130	6.82	20	
Styrene	17.6700	0.50	0.13	20.0000		88.4	62 - 148	6.99	20	
tert-Butylbenzene	15.5300	0.50	0.09	20.0000		77.6	77 - 125	6.24	20	
Tetrachloroethene	17.2400	0.50	0.10	20.0000		86.2	73 - 120	7.05	20	
Toluene	17.2100	0.50	0.12	20.0000		86.0	79 - 119	2.13	20	
trans-1,2-Dichloroethene	15.4100	0.50	0.09	20.0000		77.0	70 - 129	9.58	20	
Trichloroethene	16.7900	0.50	0.10	20.0000		84.0	73 - 117	2.70	20	
Trichlorofluoromethane	20.1300	0.50	0.23	20.0000		101	59 - 135	2.31	20	
Vinyl chloride	16.5100	0.50	0.13	20.0000		82.6	58 - 132	6.11	20	
Surrogate: 1,2-Dichloroethane-d4	22.20			25.0000		88.8	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.56			25.0000		94.2	73 - 124			
Surrogate: Dibromofluoromethane	22.73			25.0000		90.9	78 - 129			
Surrogate: Toluene-d8	25.41			25.0000		102	84 - 117			

Matrix Spike (B1F0070-MS1)

Source: 2101222-02

Prepared: 6/7/2021 Analyzed: 6/7/2021

1,1,1,2-Tetrachloroethane	15.7200	0.50	0.11	20.0000	ND	78.6	81 - 133		M2
1,1,1-Trichloroethane	15.7100	0.50	0.21	20.0000	ND	78.6	93 - 149		M2
1,1,2,2-Tetrachloroethane	12.4100	0.50	0.36	20.0000	ND	62.0	69 - 151		M2
1,1,2-Trichloroethane	15.0000	0.50	0.25	20.0000	ND	75.0	78 - 130		M2
1,1-Dichloroethane	14.1200	0.50	0.09	20.0000	ND	70.6	68 - 135		
1,1-Dichloroethene	17.4200	0.50	0.13	20.0000	ND	87.1	77 - 134		
1,1-Dichloropropene	17.3600	0.50	0.13	20.0000	ND	86.8	91 - 138		M2
1,2,3-Trichloropropane	12.1300	0.50	0.39	20.0000	ND	60.6	77 - 136		M2
1,2,3-Trichlorobenzene	14.2800	0.50	0.18	20.0000	ND	71.4	72 - 129		M2
1,2,4-Trichlorobenzene	14.3500	0.50	0.16	20.0000	ND	71.8	64 - 135		
1,2,4-Trimethylbenzene	15.1500	0.50	0.14	20.0000	ND	75.8	10 - 179		
1,2-Dibromo-3-chloropropane	13.7700	0.50	0.41	20.0000	ND	68.8	62 - 153		
1,2-Dibromoethane	14.4200	0.50	0.24	20.0000	ND	72.1	80 - 132		M2
1,2-Dichlorobenzene	15.1300	0.50	0.20	20.0000	ND	75.6	81 - 131		M2
1,2-Dichloroethane	14.2600	0.50	0.20	20.0000	ND	71.3	68 - 146		



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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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0070 - MSVOA_LL_W (continued)

Matrix Spike (B1F0070-MS1) - Continued

Source: 2101222-02

Prepared: 6/7/2021 Analyzed: 6/7/2021

1,2-Dichloropropane	14.1100	0.50	0.15	20.0000	ND	70.6	74 - 136			M2
1,3,5-Trimethylbenzene	14.6900	0.50	0.13	20.0000	ND	73.4	66 - 149			
1,3-Dichlorobenzene	15.1900	0.50	0.16	20.0000	ND	76.0	79 - 128			M2
1,3-Dichloropropane	13.1600	0.50	0.21	20.0000	ND	65.8	80 - 129			M2
1,4-Dichlorobenzene	14.9000	0.50	0.17	20.0000	ND	74.5	84 - 121			M2
2,2-Dichloropropane	15.8700	0.50	0.38	20.0000	ND	79.4	63 - 179			
2-Chlorotoluene	14.1200	0.50	0.11	20.0000	ND	70.6	76 - 142			M2
4-Chlorotoluene	14.3600	0.50	0.12	20.0000	ND	71.8	72 - 152			M2
4-Isopropyltoluene	15.0600	0.50	0.11	20.0000	ND	75.3	84 - 141			M2
Benzene	14.8300	0.50	0.13	20.0000	ND	74.2	79 - 131			M2
Bromobenzene	14.7900	0.50	0.21	20.0000	ND	74.0	82 - 121			M2
Bromodichloromethane	14.8400	0.50	0.14	20.0000	ND	74.2	86 - 138			M2
Bromoform	14.9000	0.50	0.20	20.0000	ND	74.5	80 - 136			M2
Bromomethane	22.9000	0.50	0.40	20.0000	ND	114	35 - 194			
Carbon tetrachloride	17.2300	0.50	0.09	20.0000	ND	86.2	73 - 176			
Chlorobenzene	15.1900	0.50	0.13	20.0000	ND	76.0	81 - 124			M2
Chloroethane	19.1900	0.50	0.15	20.0000	ND	96.0	0 - 257			
Chloroform	14.1200	0.50	0.11	20.0000	ND	70.6	76 - 139			M2
Chloromethane	20.5300	0.50	0.12	20.0000	ND	103	27 - 144			
cis-1,2-Dichloroethene	14.7800	0.50	0.14	20.0000	ND	73.9	69 - 139			
cis-1,3-Dichloropropene	14.6300	0.50	0.13	20.0000	ND	73.2	67 - 149			
Dibromochloromethane	14.6300	0.50	0.16	20.0000	ND	73.2	91 - 131			M2
Dibromomethane	14.3100	0.50	0.19	20.0000	ND	71.6	70 - 134			
Dichlorodifluoromethane	33.3500	0.50	0.18	20.0000	ND	167	0 - 161			M2
Ethylbenzene	15.2700	0.50	0.13	20.0000	ND	76.4	89 - 134			M2
Hexachlorobutadiene	15.3100	0.50	0.15	20.0000	ND	76.6	73 - 137			
Isopropylbenzene	14.6200	0.50	0.10	20.0000	ND	73.1	72 - 152			
m,p-Xylene	31.3900	1.0	0.19	40.0000	ND	78.5	82 - 141			M2
Methylene chloride	15.7700	1.0	0.71	20.0000	ND	78.8	74 - 133			
n-Butylbenzene	14.0700	0.50	0.11	20.0000	ND	70.4	65 - 164			
n-Propylbenzene	14.4400	0.50	0.10	20.0000	ND	72.2	73 - 161			M2
Naphthalene	13.4500	0.50	0.41	20.0000	ND	67.2	59 - 105			
o-Xylene	15.1200	0.50	0.13	20.0000	ND	75.6	90 - 134			M2
sec-Butylbenzene	15.2400	0.50	0.09	20.0000	ND	76.2	80 - 157			M2
Styrene	16.7000	0.50	0.13	20.0000	ND	83.5	0 - 222			
tert-Butylbenzene	14.9300	0.50	0.09	20.0000	ND	74.6	88 - 141			M2
Tetrachloroethene	17.1700	0.50	0.10	20.0000	ND	85.8	75 - 136			
Toluene	16.3600	0.50	0.12	20.0000	ND	81.8	82 - 132			M2
trans-1,2-Dichloroethene	15.9200	0.50	0.09	20.0000	ND	79.6	65 - 135			
Trichloroethene	15.7200	0.50	0.10	20.0000	ND	78.6	75 - 128			
Trichlorofluoromethane	24.4000	0.50	0.23	20.0000	ND	122	89 - 143			
Vinyl chloride	20.2800	0.50	0.13	20.0000	ND	101	50 - 148			



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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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0070 - MSVOA_LL_W (continued)

Matrix Spike (B1F0070-MS1) - Continued

Source: 2101222-02

Prepared: 6/7/2021 Analyzed: 6/7/2021

Surrogate: 1,2-Dichloroethane-d4	21.64		25.0000		86.6	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.44		25.0000		93.8	73 - 124			
Surrogate: Dibromofluoromethane	22.64		25.0000		90.6	78 - 129			
Surrogate: Toluene-d8	24.79		25.0000		99.2	84 - 117			

Matrix Spike Dup (B1F0070-MSD1)

Source: 2101222-02

Prepared: 6/7/2021 Analyzed: 6/7/2021

1,1,1,2-Tetrachloroethane	16.7500	0.50	0.11	20.0000	ND	83.8	81 - 133	6.34	20	
1,1,1-Trichloroethane	16.2800	0.50	0.21	20.0000	ND	81.4	93 - 149	3.56	20	M2
1,1,2,2-Tetrachloroethane	14.2700	0.50	0.36	20.0000	ND	71.4	69 - 151	13.9	20	
1,1,2-Trichloroethane	16.2200	0.50	0.25	20.0000	ND	81.1	78 - 130	7.82	20	
1,1-Dichloroethane	14.9600	0.50	0.09	20.0000	ND	74.8	68 - 135	5.78	20	
1,1-Dichloroethene	18.2300	0.50	0.13	20.0000	ND	91.2	77 - 134	4.54	20	
1,1-Dichloropropene	17.6100	0.50	0.13	20.0000	ND	88.0	91 - 138	1.43	20	M2
1,2,3-Trichloropropane	13.6900	0.50	0.39	20.0000	ND	68.4	77 - 136	12.1	20	M2
1,2,3-Trichlorobenzene	16.1500	0.50	0.18	20.0000	ND	80.8	72 - 129	12.3	20	
1,2,4-Trichlorobenzene	15.3100	0.50	0.16	20.0000	ND	76.6	64 - 135	6.47	20	
1,2,4-Trimethylbenzene	16.0600	0.50	0.14	20.0000	ND	80.3	10 - 179	5.83	20	
1,2-Dibromo-3-chloropropane	15.1800	0.50	0.41	20.0000	ND	75.9	62 - 153	9.74	20	
1,2-Dibromoethane	16.4300	0.50	0.24	20.0000	ND	82.2	80 - 132	13.0	20	
1,2-Dichlorobenzene	16.3400	0.50	0.20	20.0000	ND	81.7	81 - 131	7.69	20	
1,2-Dichloroethane	15.5000	0.50	0.20	20.0000	ND	77.5	68 - 146	8.33	20	
1,2-Dichloropropane	15.1300	0.50	0.15	20.0000	ND	75.6	74 - 136	6.98	20	
1,3,5-Trimethylbenzene	15.3900	0.50	0.13	20.0000	ND	77.0	66 - 149	4.65	20	
1,3-Dichlorobenzene	15.8200	0.50	0.16	20.0000	ND	79.1	79 - 128	4.06	20	
1,3-Dichloropropane	15.0000	0.50	0.21	20.0000	ND	75.0	80 - 129	13.1	20	M2
1,4-Dichlorobenzene	16.2300	0.50	0.17	20.0000	ND	81.2	84 - 121	8.54	20	M2
2,2-Dichloropropane	16.6900	0.50	0.38	20.0000	ND	83.4	63 - 179	5.04	20	
2-Chlorotoluene	14.6700	0.50	0.11	20.0000	ND	73.4	76 - 142	3.82	20	M2
4-Chlorotoluene	14.5600	0.50	0.12	20.0000	ND	72.8	72 - 152	1.38	20	
4-Isopropyltoluene	16.3600	0.50	0.11	20.0000	ND	81.8	84 - 141	8.27	20	M2
Benzene	15.7100	0.50	0.13	20.0000	ND	78.6	79 - 131	5.76	20	M2
Bromobenzene	15.2100	0.50	0.21	20.0000	ND	76.0	82 - 121	2.80	20	M2
Bromodichloromethane	15.6700	0.50	0.14	20.0000	ND	78.4	86 - 138	5.44	20	M2
Bromoform	17.6200	0.50	0.20	20.0000	ND	88.1	80 - 136	16.7	20	
Bromomethane	25.2000	0.50	0.40	20.0000	ND	126	35 - 194	9.56	20	
Carbon tetrachloride	18.1300	0.50	0.09	20.0000	ND	90.6	73 - 176	5.09	20	
Chlorobenzene	16.2100	0.50	0.13	20.0000	ND	81.0	81 - 124	6.50	20	
Chloroethane	20.0200	0.50	0.15	20.0000	ND	100	0 - 257	4.23	20	
Chloroform	15.3100	0.50	0.11	20.0000	ND	76.6	76 - 139	8.09	20	
Chloromethane	22.0000	0.50	0.12	20.0000	ND	110	27 - 144	6.91	20	
cis-1,2-Dichloroethene	15.4100	0.50	0.14	20.0000	ND	77.0	69 - 139	4.17	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0070 - MSVOA_LL_W (continued)

Matrix Spike Dup (B1F0070-MSD1) - Continued

Source: 2101222-02

Prepared: 6/7/2021 Analyzed: 6/7/2021

cis-1,3-Dichloropropene	15.7800	0.50	0.13	20.0000	ND	78.9	67 - 149	7.56	20	
Dibromochloromethane	15.9100	0.50	0.16	20.0000	ND	79.6	91 - 131	8.38	20	M2
Dibromomethane	15.0800	0.50	0.19	20.0000	ND	75.4	70 - 134	5.24	20	
Dichlorodifluoromethane	34.9700	0.50	0.18	20.0000	ND	175	0 - 161	4.74	20	M2
Ethylbenzene	16.0500	0.50	0.13	20.0000	ND	80.2	89 - 134	4.98	20	M2
Hexachlorobutadiene	16.5500	0.50	0.15	20.0000	ND	82.8	73 - 137	7.78	20	
Isopropylbenzene	15.1500	0.50	0.10	20.0000	ND	75.8	72 - 152	3.56	20	
m,p-Xylene	33.6200	1.0	0.19	40.0000	ND	84.0	82 - 141	6.86	20	
Methylene chloride	16.4200	1.0	0.71	20.0000	ND	82.1	74 - 133	4.04	20	
n-Butylbenzene	15.5900	0.50	0.11	20.0000	ND	78.0	65 - 164	10.2	20	
n-Propylbenzene	15.0600	0.50	0.10	20.0000	ND	75.3	73 - 161	4.20	20	
Naphthalene	15.3600	0.50	0.41	20.0000	ND	76.8	59 - 105	13.3	20	
o-Xylene	15.9300	0.50	0.13	20.0000	ND	79.6	90 - 134	5.22	20	M2
sec-Butylbenzene	16.2100	0.50	0.09	20.0000	ND	81.0	80 - 157	6.17	20	
Styrene	17.7800	0.50	0.13	20.0000	ND	88.9	0 - 222	6.26	20	
tert-Butylbenzene	15.5800	0.50	0.09	20.0000	ND	77.9	88 - 141	4.26	20	M2
Tetrachloroethene	17.7100	0.50	0.10	20.0000	ND	88.6	75 - 136	3.10	20	
Toluene	17.1600	0.50	0.12	20.0000	ND	85.8	82 - 132	4.77	20	
trans-1,2-Dichloroethene	16.1300	0.50	0.09	20.0000	ND	80.6	65 - 135	1.31	20	
Trichloroethene	16.7600	0.50	0.10	20.0000	ND	83.8	75 - 128	6.40	20	
Trichlorofluoromethane	25.7600	0.50	0.23	20.0000	ND	129	89 - 143	5.42	20	
Vinyl chloride	21.3300	0.50	0.13	20.0000	ND	107	50 - 148	5.05	20	
Surrogate: 1,2-Dichloroethane-d4	21.81			25.0000		87.2	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.95			25.0000		95.8	73 - 124			
Surrogate: Dibromofluoromethane	22.72			25.0000		90.9	78 - 129			
Surrogate: Toluene-d8	24.76			25.0000		99.0	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/15/2021

Notes and Definitions

M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
L3	Laboratory control sample outside in-house established limits but within method criteria.
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.



Fax 858.455.6533

Date: 05-27-2021
Page 1 of 1

3. B
ice

[illegible]

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.

Temperature on receipt

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-60590-1
Client Project/Site: 2101222

For:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, California 90807

Attn: Rahul Nair



Authorized for release by:
6/10/2021 10:02:44 AM

Lori Thompson, Project Manager I
(714)895-5494
Lori.Thompson@eurofinset.com

LINKS

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results through

TotalAccess

Have a Question?



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www.eurofinsus.com/Env

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: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

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: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

Job ID: 570-60590-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative
570-60590-1

Comments

No additional comments.

Receipt

The samples were received on 6/1/2021 6:00 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 3.5° C.

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.

- 1
- 2
- 3
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- 13
- 14
- 15
- 16

Detection Summary

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

Client Sample ID: 2101222-02/MW-43

Lab Sample ID: 570-60590-1

No Detections.

Client Sample ID: 2101222-03/MW-33

Lab Sample ID: 570-60590-2

No Detections.

Client Sample ID: 2101222-04/MW-3300

Lab Sample ID: 570-60590-3

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
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- 11
- 12
- 13
- 14
- 15
- 16

Client Sample Results

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

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

Client Sample ID: 2101222-02/MW-43

Date Collected: 05/27/21 09:05

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60590-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	ug/L		06/02/21 07:42	06/04/21 18:31	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	51		15 - 150			06/02/21 07:42	06/04/21 18:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	113		46 - 128			06/02/21 07:42	06/04/21 18:31	1

Client Sample ID: 2101222-03/MW-33

Date Collected: 05/27/21 14:15

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60590-2

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	ug/L		06/02/21 07:42	06/04/21 18:46	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	46		15 - 150			06/02/21 07:42	06/04/21 18:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	107		46 - 128			06/02/21 07:42	06/04/21 18:46	1

Client Sample ID: 2101222-04/MW-3300

Date Collected: 05/27/21 15:00

Date Received: 06/01/21 18:00

Lab Sample ID: 570-60590-3

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	ug/L		06/02/21 07:42	06/04/21 19:00	1
Isotope Dilution	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	54		15 - 150			06/02/21 07:42	06/04/21 19:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	117		46 - 128			06/02/21 07:42	06/04/21 19:00	1

Surrogate Summary

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

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 (46-128)
570-60590-1	2101222-02/MW-43	113
570-60590-1 MS	2101222-02/MW-43	104
570-60590-1 MSD	2101222-02/MW-43	113
570-60590-2	2101222-03/MW-33	107
570-60590-3	2101222-04/MW-3300	117
LCS 570-154440/2-A	Lab Control Sample	107
LCSD 570-154440/3-A	Lab Control Sample Dup	98
MB 570-154440/1-A	Method Blank	120
Surrogate Legend		
NBZ = Nitrobenzene-d5 (Surr)		

Isotope Dilution Summary

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

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 (15-150)
570-60590-1	2101222-02/MW-43	51
570-60590-1 MS	2101222-02/MW-43	41
570-60590-1 MSD	2101222-02/MW-43	42
570-60590-2	2101222-03/MW-33	46
570-60590-3	2101222-04/MW-3300	54
LCS 570-154440/2-A	Lab Control Sample	55
LCSD 570-154440/3-A	Lab Control Sample Dup	59
MB 570-154440/1-A	Method Blank	52

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

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

Lab Sample ID: MB 570-154440/1-A

Matrix: Water

Analysis Batch: 155146

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 154440

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.50	ug/L		06/02/21 07:42	06/04/21 12:54	1
Isotope Dilution	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	52		15 - 150			06/02/21 07:42	06/04/21 12:54	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	120		46 - 128			06/02/21 07:42	06/04/21 12:54	1

Lab Sample ID: LCS 570-154440/2-A

Matrix: Water

Analysis Batch: 155146

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	20.0	21.23		ug/L		106	57 - 136
Isotope Dilution	%Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	55		15 - 150				
Surrogate	%Recovery	LCS Qualifier	Limits				
Nitrobenzene-d5 (Surr)	107		46 - 128				

Lab Sample ID: LCSD 570-154440/3-A

Matrix: Water

Analysis Batch: 155146

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	20.0	21.84		ug/L		109	57 - 136	3	20
Isotope Dilution	%Recovery	LCSD Qualifier	Limits						
1,4-Dioxane-d8	59		15 - 150						
Surrogate	%Recovery	LCSD Qualifier	Limits						
Nitrobenzene-d5 (Surr)	98		46 - 128						

Lab Sample ID: 570-60590-1 MS

Matrix: Water

Analysis Batch: 155146

Client Sample ID: 2101222-02/MW-43

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	ND		20.0	22.07		ug/L		110	45 - 139
Isotope Dilution	%Recovery	MS Qualifier	Limits						
1,4-Dioxane-d8	41		15 - 150						
Surrogate	%Recovery	MS Qualifier	Limits						
Nitrobenzene-d5 (Surr)	104		46 - 128						

Eurofins Calscience LLC

QC Sample Results

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

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

Lab Sample ID: 570-60590-1 MSD

Matrix: Water

Analysis Batch: 155146

Client Sample ID: 2101222-02/MW-43

Prep Type: Total/NA

Prep Batch: 154440

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		20.0	21.71		ug/L		109	45 - 139	2	17
	MSD	MSD									
Isotope Dilution	%Recovery	Qualifier	Limits								
1,4-Dioxane-d8	42		15 - 150								
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5 (Surr)	113		46 - 128								

QC Association Summary

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

GC/MS Semi VOA

Prep Batch: 154440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60590-1	2101222-02/MW-43	Total/NA	Water	3510C	
570-60590-2	2101222-03/MW-33	Total/NA	Water	3510C	
570-60590-3	2101222-04/MW-3300	Total/NA	Water	3510C	
MB 570-154440/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-154440/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-154440/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
570-60590-1 MS	2101222-02/MW-43	Total/NA	Water	3510C	
570-60590-1 MSD	2101222-02/MW-43	Total/NA	Water	3510C	

Analysis Batch: 155146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-60590-1	2101222-02/MW-43	Total/NA	Water	8270C SIM ID	154440
570-60590-2	2101222-03/MW-33	Total/NA	Water	8270C SIM ID	154440
570-60590-3	2101222-04/MW-3300	Total/NA	Water	8270C SIM ID	154440
MB 570-154440/1-A	Method Blank	Total/NA	Water	8270C SIM ID	154440
LCS 570-154440/2-A	Lab Control Sample	Total/NA	Water	8270C SIM ID	154440
LCSD 570-154440/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM ID	154440
570-60590-1 MS	2101222-02/MW-43	Total/NA	Water	8270C SIM ID	154440
570-60590-1 MSD	2101222-02/MW-43	Total/NA	Water	8270C SIM ID	154440

Lab Chronicle

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

Client Sample ID: 2101222-02/MW-43

Lab Sample ID: 570-60590-1

Date Collected: 05/27/21 09:05

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 18:31	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Client Sample ID: 2101222-03/MW-33

Lab Sample ID: 570-60590-2

Date Collected: 05/27/21 14:15

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 18:46	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Client Sample ID: 2101222-04/MW-3300

Lab Sample ID: 570-60590-3

Date Collected: 05/27/21 15:00

Matrix: Water

Date Received: 06/01/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			100.0 mL	10 mL	154440	06/02/21 07:42	PQS1	ECL 1
Total/NA	Analysis	8270C SIM ID		1			155146	06/04/21 19:00	AJ2Q	ECL 1
Instrument ID: GCMSDDD										

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

Laboratory: Eurofins Calscience LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2944	09-30-21
Oregon	NELAP	CA300001	01-30-22

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Method Summary

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

Method	Method Description	Protocol	Laboratory
8270C SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	ECL 1
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ECL 1

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Advanced Technology Laboratories
Project/Site: 2101222

Job ID: 570-60590-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-60590-1	2101222-02/MW-43	Water	05/27/21 09:05	06/01/21 18:00	
570-60590-2	2101222-03/MW-33	Water	05/27/21 14:15	06/01/21 18:00	
570-60590-3	2101222-04/MW-3300	Water	05/27/21 15:00	06/01/21 18:00	

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60590

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2101222

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone 562 989 4045
Fax 562 989 6348
Project Manager: Rahul Nair
(Rahul.Nair@atlglobal.com)
Sampler: D.SEALEE

RECEIVING LABORATORY:

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone (714) 895-5494
Fax (714) 894-7501
PO# SC15236-Standard TAT

IMPORTANT : Please include Work Order # and PO # in
your invoice.

QC Requirements

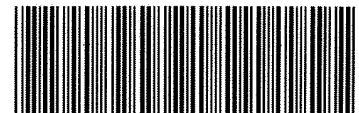
☒ Routine ☐ RWQCB
☐ Caltrans ☐ Level IV*
☐ Legal ☐ Other _____

* All Level IV sample containers (including
empty ones) must be returned to ATL 30 days
after receipt.

EDD Requirements

☐ Standard Excel
☐ Geotracker EDF
☐ Other _____

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 2101222-02 / MW-43		Water	05/27/21 09:05	Please Run MS/MSD on sample 2101222-02
8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 3 - Amber Unpres - 1000mL	06/04/21 17:00	06/03/21 09 05		
ATL Lab#: 2101222-03 / MW-33		Water	05/27/21 14:15	
8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 1 - Amber Unpres - 1000mL	06/04/21 17:00	06/03/21 14 15		
ATL Lab#: 2101222-04 / MW-3300		Water	05/27/21 15:00	
8270_SIM_Dioxane [1,4-Dioxane by GC-MS/SIM Isotope Dilution] 1 - Amber Unpres - 1000mL	06/04/21 17:00	06/03/21 15 00		



570-60590 Chain of Custody

Approved by

ATL Project Manager

Released By ATL Sample Control

Released By Courier

Date

Date

Date

17:29

Time

1800

Time

Received By Courier

Received By Subcontract
Laboratory

Date

Date

Time

Time

Login Sample Receipt Checklist

Client: Advanced Technology Laboratories

Job Number: 570-60590-1

Login Number: 60590

List Source: Eurofins Calscience LLC

List Number: 1

Creator: Patel, Jayesh

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	



June 21, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2101184
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on May 25, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amy Leung', with the word 'For' written below it.

Amy Leung
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-052521	2101184-01	Water	5/25/21 8:00	5/25/21 16:56
MW-28	2101184-02	Water	5/25/21 8:35	5/25/21 16:56
MW-26C	2101184-03	Water	5/25/21 11:30	5/25/21 16:56
RB-05252021	2101184-04	Water	5/25/21 13:00	5/25/21 16:56
MW-08	2101184-05	Water	5/25/21 13:55	5/25/21 16:56
MW-41	2101184-06	Water	5/25/21 16:10	5/25/21 16:56
MW-4100	2101184-07	Water	5/25/21 17:00	5/25/21 16:56
MW-35C	2101184-08	Water	5/25/21 9:17	5/25/21 16:56
MW-39	2101184-09	Water	5/25/21 11:29	5/25/21 16:56
MW-42	2101184-10	Water	5/25/21 14:23	5/25/21 16:56
MW-31	2101184-11	Water	5/25/21 15:41	5/25/21 16:56



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/21/2021

Client Sample ID: TB-052521

Lab ID: 2101184-01

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	B1E0486	05/28/2021	05/28/21 15:18	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 15:18	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 15:18	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 15:18	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 15:18	
1,1-Dichloroethene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 15:18	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 15:18	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 15:18	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 15:18	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 15:18	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 15:18	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 15:18	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 15:18	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 15:18	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 15:18	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 15:18	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 15:18	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 15:18	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 15:18	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 15:18	
Chloroform	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 15:18	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 15:18	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 15:18	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 15:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: TB-052521

Lab ID: 2101184-01

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 15:18	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 15:18	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 15:18	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 15:18	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 15:18	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 15:18	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 15:18	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 15:18	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 15:18	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 15:18	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 15:18	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 15:18	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 15:18	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 15:18	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 15:18	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 15:18	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 15:18	
Surrogate: 1,2-Dichloroethane-d4	91.7 %		64 - 155		B1E0486	05/28/2021	05/28/21 15:18	
Surrogate: 4-Bromofluorobenzene	96.4 %		73 - 124		B1E0486	05/28/2021	05/28/21 15:18	
Surrogate: Dibromofluoromethane	96.6 %		78 - 129		B1E0486	05/28/2021	05/28/21 15:18	
Surrogate: Toluene-d8	99.3 %		84 - 117		B1E0486	05/28/2021	05/28/21 15:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-28

Lab ID: 2101184-02

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	B1E0486	05/28/2021	05/28/21 16:33	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 16:33	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 16:33	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 16:33	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:33	
1,1-Dichloroethene	0.58	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 16:33	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 16:33	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 16:33	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 16:33	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 16:33	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 16:33	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:33	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 16:33	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:33	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 16:33	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 16:33	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 16:33	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 16:33	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:33	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 16:33	
Chloroform	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:33	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 16:33	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 16:33	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 16:33	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-28

Lab ID: 2101184-02

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 16:33	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 16:33	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 16:33	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:33	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 16:33	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 16:33	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:33	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:33	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 16:33	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:33	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:33	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:33	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 16:33	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:33	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:33	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 16:33	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:33	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.4 %</i>		<i>64 - 155</i>		B1E0486	05/28/2021	<i>05/28/21 16:33</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.8 %</i>		<i>73 - 124</i>		B1E0486	05/28/2021	<i>05/28/21 16:33</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.0 %</i>		<i>78 - 129</i>		B1E0486	05/28/2021	<i>05/28/21 16:33</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>84 - 117</i>		B1E0486	05/28/2021	<i>05/28/21 16:33</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-28

Lab ID: 2101184-02

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

Analyst: JJ

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	B1E0464	05/27/2021	06/18/21 11:56	
Surrogate: 1,2-Dichlorobenzene-d4	74.3 %		13 - 99		B1E0464	05/27/2021	06/18/21 11:56	
Surrogate: 2-Fluorobiphenyl	79.9 %		8 - 111		B1E0464	05/27/2021	06/18/21 11:56	
Surrogate: 4-Terphenyl-d14	62.1 %		12 - 113		B1E0464	05/27/2021	06/18/21 11:56	
Surrogate: Nitrobenzene-d5	73.8 %		15 - 121		B1E0464	05/27/2021	06/18/21 11:56	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-26C

Lab ID: 2101184-03

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	B1E0486	05/28/2021	05/28/21 16:58	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 16:58	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 16:58	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 16:58	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:58	
1,1-Dichloroethene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 16:58	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 16:58	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 16:58	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 16:58	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 16:58	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 16:58	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:58	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 16:58	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:58	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 16:58	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 16:58	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 16:58	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 16:58	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:58	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 16:58	
Chloroform	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:58	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 16:58	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 16:58	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 16:58	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-26C

Lab ID: 2101184-03

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 16:58	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 16:58	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 16:58	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:58	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 16:58	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 16:58	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 16:58	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:58	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 16:58	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:58	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:58	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:58	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 16:58	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 16:58	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 16:58	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 16:58	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 16:58	
Surrogate: 1,2-Dichloroethane-d4	90.2 %		64 - 155		B1E0486	05/28/2021	05/28/21 16:58	
Surrogate: 4-Bromofluorobenzene	92.0 %		73 - 124		B1E0486	05/28/2021	05/28/21 16:58	
Surrogate: Dibromofluoromethane	95.7 %		78 - 129		B1E0486	05/28/2021	05/28/21 16:58	
Surrogate: Toluene-d8	103 %		84 - 117		B1E0486	05/28/2021	05/28/21 16:58	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-26C

Lab ID: 2101184-03

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

Analyst: JJ

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	B1E0464	05/27/2021	06/18/21 12:23	
Surrogate: 1,2-Dichlorobenzene-d4	82.2 %		13 - 99		B1E0464	05/27/2021	06/18/21 12:23	
Surrogate: 2-Fluorobiphenyl	86.0 %		8 - 111		B1E0464	05/27/2021	06/18/21 12:23	
Surrogate: 4-Terphenyl-d14	59.8 %		12 - 113		B1E0464	05/27/2021	06/18/21 12:23	
Surrogate: Nitrobenzene-d5	80.6 %		15 - 121		B1E0464	05/27/2021	06/18/21 12:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: RB-05252021

Lab ID: 2101184-04

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	B1E0486	05/28/2021	05/28/21 17:23	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 17:23	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 17:23	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 17:23	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:23	
1,1-Dichloroethene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 17:23	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 17:23	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 17:23	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 17:23	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 17:23	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 17:23	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:23	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 17:23	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:23	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 17:23	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 17:23	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 17:23	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 17:23	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:23	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 17:23	
Chloroform	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:23	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 17:23	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 17:23	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 17:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: RB-05252021

Lab ID: 2101184-04

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 17:23	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 17:23	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 17:23	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:23	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 17:23	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 17:23	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:23	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:23	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 17:23	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:23	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:23	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:23	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 17:23	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:23	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:23	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 17:23	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:23	
Surrogate: 1,2-Dichloroethane-d4	93.8 %		64 - 155		B1E0486	05/28/2021	05/28/21 17:23	
Surrogate: 4-Bromofluorobenzene	90.0 %		73 - 124		B1E0486	05/28/2021	05/28/21 17:23	
Surrogate: Dibromofluoromethane	96.2 %		78 - 129		B1E0486	05/28/2021	05/28/21 17:23	
Surrogate: Toluene-d8	99.3 %		84 - 117		B1E0486	05/28/2021	05/28/21 17:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-08

Lab ID: 2101184-05

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	B1F0006	06/01/2021	06/01/21 22:02	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 22:02	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0006	06/01/2021	06/01/21 22:02	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0006	06/01/2021	06/01/21 22:02	
1,1-Dichloroethane	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 22:02	
1,1-Dichloroethene	27	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 22:02	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 22:02	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 22:02	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 22:02	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0006	06/01/2021	06/01/21 22:02	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0006	06/01/2021	06/01/21 22:02	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 22:02	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 22:02	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 22:02	
Benzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
Bromobenzene	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 22:02	
Bromodichloromethane	ND	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 22:02	
Bromoform	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 22:02	
Bromomethane	ND	0.50	0.40	1	B1F0006	06/01/2021	06/01/21 22:02	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 22:02	
Chlorobenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
Chloroethane	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 22:02	
Chloroform	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 22:02	
Chloromethane	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 22:02	
cis-1,2-Dichloroethene	1.9	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 22:02	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
Dibromochloromethane	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 22:02	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/21/2021

Client Sample ID: MW-08

Lab ID: 2101184-05

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
Dibromomethane	ND	0.50	0.19	1	B1F0006	06/01/2021	06/01/21 22:02	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0006	06/01/2021	06/01/21 22:02	
Ethylbenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 22:02	
Isopropylbenzene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 22:02	
m,p-Xylene	ND	1.0	0.19	1	B1F0006	06/01/2021	06/01/21 22:02	
Methylene chloride	ND	1.0	0.71	1	B1F0006	06/01/2021	06/01/21 22:02	
n-Butylbenzene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 22:02	
n-Propylbenzene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 22:02	
Naphthalene	ND	0.50	0.41	1	B1F0006	06/01/2021	06/01/21 22:02	
o-Xylene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 22:02	
Styrene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 22:02	
Tetrachloroethene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 22:02	
Toluene	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 22:02	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 22:02	
Trichloroethene	41	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 22:02	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0006	06/01/2021	06/01/21 22:02	
Vinyl chloride	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 22:02	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>88.9 %</i>		<i>64 - 155</i>		B1F0006	06/01/2021	<i>06/01/21 22:02</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.5 %</i>		<i>73 - 124</i>		B1F0006	06/01/2021	<i>06/01/21 22:02</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.1 %</i>		<i>78 - 129</i>		B1F0006	06/01/2021	<i>06/01/21 22:02</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.4 %</i>		<i>84 - 117</i>		B1F0006	06/01/2021	<i>06/01/21 22:02</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-08

Lab ID: 2101184-05

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

Analyst: JJ

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	B1E0464	05/27/2021	06/18/21 12:51	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>77.9 %</i>		<i>13 - 99</i>		B1E0464	05/27/2021	<i>06/18/21 12:51</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>80.6 %</i>		<i>8 - 111</i>		B1E0464	05/27/2021	<i>06/18/21 12:51</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>59.4 %</i>		<i>12 - 113</i>		B1E0464	05/27/2021	<i>06/18/21 12:51</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>78.7 %</i>		<i>15 - 121</i>		B1E0464	05/27/2021	<i>06/18/21 12:51</i>	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/21/2021

Client Sample ID: MW-41

Lab ID: 2101184-06

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	B1E0486	05/28/2021	05/28/21 17:48	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 17:48	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 17:48	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 17:48	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:48	
1,1-Dichloroethene	1.0	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 17:48	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 17:48	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 17:48	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 17:48	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 17:48	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 17:48	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:48	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 17:48	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:48	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 17:48	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 17:48	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 17:48	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 17:48	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:48	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 17:48	
Chloroform	0.60	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:48	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 17:48	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 17:48	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 17:48	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-41

Lab ID: 2101184-06

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 17:48	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 17:48	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 17:48	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:48	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 17:48	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 17:48	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 17:48	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:48	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 17:48	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:48	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:48	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:48	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 17:48	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 17:48	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 17:48	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 17:48	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 17:48	
Surrogate: 1,2-Dichloroethane-d4	95.1 %		64 - 155		B1E0486	05/28/2021	05/28/21 17:48	
Surrogate: 4-Bromofluorobenzene	92.0 %		73 - 124		B1E0486	05/28/2021	05/28/21 17:48	
Surrogate: Dibromofluoromethane	97.3 %		78 - 129		B1E0486	05/28/2021	05/28/21 17:48	
Surrogate: Toluene-d8	98.5 %		84 - 117		B1E0486	05/28/2021	05/28/21 17:48	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-41

Lab ID: 2101184-06

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

Analyst: AC

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	2.0	0.84	1	B1E0478	05/27/2021	05/28/21 18:14	
Surrogate: 1,2-Dichlorobenzene-d4	54.8 %		17 - 119		B1E0478	05/27/2021	05/28/21 18:14	
Surrogate: 2-Fluorobiphenyl	67.0 %		10 - 133		B1E0478	05/27/2021	05/28/21 18:14	
Surrogate: 4-Terphenyl-d14	82.1 %		5 - 139		B1E0478	05/27/2021	05/28/21 18:14	
Surrogate: Nitrobenzene-d5	62.7 %		13 - 150		B1E0478	05/27/2021	05/28/21 18:14	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-4100

Lab ID: 2101184-07

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	B1E0486	05/28/2021	05/28/21 18:13	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 18:13	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 18:13	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 18:13	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:13	
1,1-Dichloroethene	0.92	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 18:13	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 18:13	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 18:13	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 18:13	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 18:13	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 18:13	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:13	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 18:13	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:13	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 18:13	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 18:13	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 18:13	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 18:13	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:13	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 18:13	
Chloroform	0.59	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:13	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 18:13	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 18:13	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 18:13	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-4100

Lab ID: 2101184-07

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 18:13	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 18:13	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 18:13	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:13	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 18:13	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 18:13	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:13	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:13	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 18:13	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:13	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:13	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:13	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 18:13	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:13	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:13	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 18:13	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:13	
Surrogate: 1,2-Dichloroethane-d4	94.3 %		64 - 155		B1E0486	05/28/2021	05/28/21 18:13	
Surrogate: 4-Bromofluorobenzene	91.3 %		73 - 124		B1E0486	05/28/2021	05/28/21 18:13	
Surrogate: Dibromofluoromethane	94.4 %		78 - 129		B1E0486	05/28/2021	05/28/21 18:13	
Surrogate: Toluene-d8	98.8 %		84 - 117		B1E0486	05/28/2021	05/28/21 18:13	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-4100

Lab ID: 2101184-07

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

Analyst: AC

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	2.0	0.84	1	B1E0478	05/27/2021	05/28/21 18:41	
Surrogate: 1,2-Dichlorobenzene-d4	61.2 %		17 - 119		B1E0478	05/27/2021	05/28/21 18:41	
Surrogate: 2-Fluorobiphenyl	68.8 %		10 - 133		B1E0478	05/27/2021	05/28/21 18:41	
Surrogate: 4-Terphenyl-d14	80.7 %		5 - 139		B1E0478	05/27/2021	05/28/21 18:41	
Surrogate: Nitrobenzene-d5	64.5 %		13 - 150		B1E0478	05/27/2021	05/28/21 18:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-35C

Lab ID: 2101184-08

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	B1E0486	05/28/2021	05/28/21 18:38	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 18:38	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 18:38	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 18:38	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:38	
1,1-Dichloroethene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 18:38	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 18:38	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 18:38	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 18:38	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 18:38	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 18:38	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:38	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 18:38	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:38	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 18:38	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 18:38	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 18:38	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 18:38	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:38	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 18:38	
Chloroform	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:38	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 18:38	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 18:38	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 18:38	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-35C

Lab ID: 2101184-08

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 18:38	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 18:38	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 18:38	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:38	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 18:38	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 18:38	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 18:38	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:38	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 18:38	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:38	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:38	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:38	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 18:38	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 18:38	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 18:38	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 18:38	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 18:38	
Surrogate: 1,2-Dichloroethane-d4	93.0 %		64 - 155		B1E0486	05/28/2021	05/28/21 18:38	
Surrogate: 4-Bromofluorobenzene	89.2 %		73 - 124		B1E0486	05/28/2021	05/28/21 18:38	
Surrogate: Dibromofluoromethane	95.8 %		78 - 129		B1E0486	05/28/2021	05/28/21 18:38	
Surrogate: Toluene-d8	103 %		84 - 117		B1E0486	05/28/2021	05/28/21 18:38	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-35C

Lab ID: 2101184-08

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

Analyst: JJ

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	B1E0464	05/27/2021	06/18/21 13:17	
Surrogate: 1,2-Dichlorobenzene-d4	70.7 %		13 - 99		B1E0464	05/27/2021	06/18/21 13:17	
Surrogate: 2-Fluorobiphenyl	74.6 %		8 - 111		B1E0464	05/27/2021	06/18/21 13:17	
Surrogate: 4-Terphenyl-d14	52.4 %		12 - 113		B1E0464	05/27/2021	06/18/21 13:17	
Surrogate: Nitrobenzene-d5	71.0 %		15 - 121		B1E0464	05/27/2021	06/18/21 13:17	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-39

Lab ID: 2101184-09

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	B1E0486	05/28/2021	05/28/21 19:03	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 19:03	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 19:03	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 19:03	
1,1-Dichloroethane	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:03	
1,1-Dichloroethene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 19:03	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 19:03	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 19:03	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 19:03	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 19:03	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 19:03	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:03	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 19:03	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:03	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 19:03	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 19:03	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 19:03	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 19:03	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:03	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 19:03	
Chloroform	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:03	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 19:03	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 19:03	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 19:03	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-39

Lab ID: 2101184-09

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 19:03	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 19:03	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 19:03	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:03	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 19:03	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 19:03	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:03	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:03	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 19:03	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:03	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:03	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:03	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 19:03	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:03	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:03	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 19:03	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:03	
Surrogate: 1,2-Dichloroethane-d4	92.2 %		64 - 155		B1E0486	05/28/2021	05/28/21 19:03	
Surrogate: 4-Bromofluorobenzene	91.5 %		73 - 124		B1E0486	05/28/2021	05/28/21 19:03	
Surrogate: Dibromofluoromethane	94.8 %		78 - 129		B1E0486	05/28/2021	05/28/21 19:03	
Surrogate: Toluene-d8	99.8 %		84 - 117		B1E0486	05/28/2021	05/28/21 19:03	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-39

Lab ID: 2101184-09

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

Analyst: JJ

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	B1E0464	05/27/2021	06/18/21 13:45	
Surrogate: 1,2-Dichlorobenzene-d4	71.1 %		13 - 99		B1E0464	05/27/2021	06/18/21 13:45	
Surrogate: 2-Fluorobiphenyl	77.2 %		8 - 111		B1E0464	05/27/2021	06/18/21 13:45	
Surrogate: 4-Terphenyl-d14	56.5 %		12 - 113		B1E0464	05/27/2021	06/18/21 13:45	
Surrogate: Nitrobenzene-d5	71.7 %		15 - 121		B1E0464	05/27/2021	06/18/21 13:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-42

Lab ID: 2101184-10

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	B1E0486	05/28/2021	05/28/21 19:28	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 19:28	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1E0486	05/28/2021	05/28/21 19:28	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1E0486	05/28/2021	05/28/21 19:28	
1,1-Dichloroethane	0.62	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:28	
1,1-Dichloroethene	53	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
1,1-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2-Dibromoethane	ND	0.50	0.24	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2-Dichloroethane	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 19:28	
1,2-Dichloropropane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 19:28	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 19:28	
1,3-Dichloropropane	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 19:28	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1E0486	05/28/2021	05/28/21 19:28	
2,2-Dichloropropane	ND	0.50	0.38	1	B1E0486	05/28/2021	05/28/21 19:28	
2-Chlorotoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:28	
4-Chlorotoluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 19:28	
4-Isopropyltoluene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:28	
Benzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
Bromobenzene	ND	0.50	0.21	1	B1E0486	05/28/2021	05/28/21 19:28	
Bromodichloromethane	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 19:28	
Bromoform	ND	0.50	0.20	1	B1E0486	05/28/2021	05/28/21 19:28	
Bromomethane	ND	0.50	0.40	1	B1E0486	05/28/2021	05/28/21 19:28	
Carbon tetrachloride	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:28	
Chlorobenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
Chloroethane	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 19:28	
Chloroform	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:28	
Chloromethane	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 19:28	
cis-1,2-Dichloroethene	ND	0.50	0.14	1	B1E0486	05/28/2021	05/28/21 19:28	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
Dibromochloromethane	ND	0.50	0.16	1	B1E0486	05/28/2021	05/28/21 19:28	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-42

Lab ID: 2101184-10

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
Dibromomethane	ND	0.50	0.19	1	B1E0486	05/28/2021	05/28/21 19:28	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1E0486	05/28/2021	05/28/21 19:28	
Ethylbenzene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
Hexachlorobutadiene	ND	0.50	0.15	1	B1E0486	05/28/2021	05/28/21 19:28	
Isopropylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:28	
m,p-Xylene	ND	1.0	0.19	1	B1E0486	05/28/2021	05/28/21 19:28	
Methylene chloride	ND	1.0	0.71	1	B1E0486	05/28/2021	05/28/21 19:28	
n-Butylbenzene	ND	0.50	0.11	1	B1E0486	05/28/2021	05/28/21 19:28	
n-Propylbenzene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:28	
Naphthalene	ND	0.50	0.41	1	B1E0486	05/28/2021	05/28/21 19:28	
o-Xylene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
sec-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:28	
Styrene	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
tert-Butylbenzene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:28	
Tetrachloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:28	
Toluene	ND	0.50	0.12	1	B1E0486	05/28/2021	05/28/21 19:28	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1E0486	05/28/2021	05/28/21 19:28	
Trichloroethene	ND	0.50	0.10	1	B1E0486	05/28/2021	05/28/21 19:28	
Trichlorofluoromethane	ND	0.50	0.23	1	B1E0486	05/28/2021	05/28/21 19:28	
Vinyl chloride	ND	0.50	0.13	1	B1E0486	05/28/2021	05/28/21 19:28	
Surrogate: 1,2-Dichloroethane-d4	91.2 %		64 - 155		B1E0486	05/28/2021	05/28/21 19:28	
Surrogate: 4-Bromofluorobenzene	87.0 %		73 - 124		B1E0486	05/28/2021	05/28/21 19:28	
Surrogate: Dibromofluoromethane	93.9 %		78 - 129		B1E0486	05/28/2021	05/28/21 19:28	
Surrogate: Toluene-d8	103 %		84 - 117		B1E0486	05/28/2021	05/28/21 19:28	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-42

Lab ID: 2101184-10

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

Analyst: JJ

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	28	0.20	0.05	1	B1E0464	05/27/2021	06/18/21 14:12	E
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>74.4 %</i>		<i>13 - 99</i>		B1E0464	05/27/2021	<i>06/18/21 14:12</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>78.3 %</i>		<i>8 - 111</i>		B1E0464	05/27/2021	<i>06/18/21 14:12</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>56.5 %</i>		<i>12 - 113</i>		B1E0464	05/27/2021	<i>06/18/21 14:12</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>76.6 %</i>		<i>15 - 121</i>		B1E0464	05/27/2021	<i>06/18/21 14:12</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-31

Lab ID: 2101184-11

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	B1F0006	06/01/2021	06/01/21 21:37	
1,1,1-Trichloroethane	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 21:37	
1,1,2,2-Tetrachloroethane	ND	0.50	0.36	1	B1F0006	06/01/2021	06/01/21 21:37	
1,1,2-Trichloroethane	ND	0.50	0.25	1	B1F0006	06/01/2021	06/01/21 21:37	
1,1-Dichloroethane	1.7	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:37	
1,1-Dichloroethene	290	2.5	0.66	5	B1F0024	06/02/2021	06/02/21 13:25	
1,1-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2,3-Trichloropropane	ND	0.50	0.39	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2,3-Trichlorobenzene	ND	0.50	0.18	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2,4-Trichlorobenzene	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2,4-Trimethylbenzene	ND	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2-Dibromo-3-chloropropane	ND	0.50	0.41	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2-Dibromoethane	ND	0.50	0.24	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2-Dichlorobenzene	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2-Dichloroethane	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 21:37	
1,2-Dichloropropane	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 21:37	
1,3,5-Trimethylbenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
1,3-Dichlorobenzene	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 21:37	
1,3-Dichloropropane	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 21:37	
1,4-Dichlorobenzene	ND	0.50	0.17	1	B1F0006	06/01/2021	06/01/21 21:37	
2,2-Dichloropropane	ND	0.50	0.38	1	B1F0006	06/01/2021	06/01/21 21:37	
2-Chlorotoluene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:37	
4-Chlorotoluene	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 21:37	
4-Isopropyltoluene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:37	
Benzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
Bromobenzene	ND	0.50	0.21	1	B1F0006	06/01/2021	06/01/21 21:37	
Bromodichloromethane	ND	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 21:37	
Bromoform	ND	0.50	0.20	1	B1F0006	06/01/2021	06/01/21 21:37	
Bromomethane	ND	0.50	0.40	1	B1F0006	06/01/2021	06/01/21 21:37	
Carbon tetrachloride	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:37	
Chlorobenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
Chloroethane	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 21:37	
Chloroform	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:37	
Chloromethane	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 21:37	
cis-1,2-Dichloroethene	0.59	0.50	0.14	1	B1F0006	06/01/2021	06/01/21 21:37	
cis-1,3-Dichloropropene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
Dibromochloromethane	ND	0.50	0.16	1	B1F0006	06/01/2021	06/01/21 21:37	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-31

Lab ID: 2101184-11

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
Dibromomethane	ND	0.50	0.19	1	B1F0006	06/01/2021	06/01/21 21:37	
Dichlorodifluoromethane	ND	0.50	0.18	1	B1F0006	06/01/2021	06/01/21 21:37	
Ethylbenzene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
Hexachlorobutadiene	ND	0.50	0.15	1	B1F0006	06/01/2021	06/01/21 21:37	
Isopropylbenzene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:37	
m,p-Xylene	ND	1.0	0.19	1	B1F0006	06/01/2021	06/01/21 21:37	
Methylene chloride	ND	1.0	0.71	1	B1F0006	06/01/2021	06/01/21 21:37	
n-Butylbenzene	ND	0.50	0.11	1	B1F0006	06/01/2021	06/01/21 21:37	
n-Propylbenzene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:37	
Naphthalene	ND	0.50	0.41	1	B1F0006	06/01/2021	06/01/21 21:37	
o-Xylene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
sec-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:37	
Styrene	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
tert-Butylbenzene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:37	
Tetrachloroethene	ND	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:37	
Toluene	ND	0.50	0.12	1	B1F0006	06/01/2021	06/01/21 21:37	
trans-1,2-Dichloroethene	ND	0.50	0.09	1	B1F0006	06/01/2021	06/01/21 21:37	
Trichloroethene	11	0.50	0.10	1	B1F0006	06/01/2021	06/01/21 21:37	
Trichlorofluoromethane	ND	0.50	0.23	1	B1F0006	06/01/2021	06/01/21 21:37	
Vinyl chloride	ND	0.50	0.13	1	B1F0006	06/01/2021	06/01/21 21:37	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>85.4 %</i>		<i>64 - 155</i>		B1F0024	06/02/2021	<i>06/02/21 13:25</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.2 %</i>		<i>64 - 155</i>		B1F0006	06/01/2021	<i>06/01/21 21:37</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.4 %</i>		<i>73 - 124</i>		B1F0024	06/02/2021	<i>06/02/21 13:25</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.5 %</i>		<i>73 - 124</i>		B1F0006	06/01/2021	<i>06/01/21 21:37</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>87.8 %</i>		<i>78 - 129</i>		B1F0024	06/02/2021	<i>06/02/21 13:25</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.6 %</i>		<i>78 - 129</i>		B1F0006	06/01/2021	<i>06/01/21 21:37</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.7 %</i>		<i>84 - 117</i>		B1F0006	06/01/2021	<i>06/01/21 21:37</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>84 - 117</i>		B1F0024	06/02/2021	<i>06/02/21 13:25</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

Client Sample ID: MW-31

Lab ID: 2101184-11

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

Analyst: JJ

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	180	0.20	0.05	1	B1E0464	05/27/2021	06/18/21 14:40	E
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>75.8 %</i>		<i>13 - 99</i>		B1E0464	05/27/2021	<i>06/18/21 14:40</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>81.3 %</i>		<i>8 - 111</i>		B1E0464	05/27/2021	<i>06/18/21 14:40</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>56.5 %</i>		<i>12 - 113</i>		B1E0464	05/27/2021	<i>06/18/21 14:40</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>80.2 %</i>		<i>15 - 121</i>		B1E0464	05/27/2021	<i>06/18/21 14:40</i>	



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/21/2021

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 B1E0486 - MSVOA_LL_W

Blank (B1E0486-BLK1)

Prepared: 5/28/2021 Analyzed: 5/28/2021

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

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 B1E0486 - MSVOA_LL_W (continued)

Blank (B1E0486-BLK1) - Continued

Prepared: 5/28/2021 Analyzed: 5/28/2021

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
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	23.43		25.0000	93.7	64 - 155
Surrogate: 4-Bromofluorobenzene	23.16		25.0000	92.6	73 - 124
Surrogate: Dibromofluoromethane	24.54		25.0000	98.2	78 - 129
Surrogate: Toluene-d8	25.61		25.0000	102	84 - 117

LCS (B1E0486-BS1)

Prepared: 5/28/2021 Analyzed: 5/28/2021

1,1,1,2-Tetrachloroethane	19.0300	0.50	0.11	20.0000	95.2	79 - 116
1,1,1-Trichloroethane	17.0400	0.50	0.21	20.0000	85.2	73 - 130
1,1,2,2-Tetrachloroethane	17.2100	0.50	0.36	20.0000	86.0	71 - 122
1,1,2-Trichloroethane	18.9800	0.50	0.25	20.0000	94.9	70 - 124
1,1-Dichloroethane	15.8700	0.50	0.09	20.0000	79.4	69 - 128
1,1-Dichloroethene	15.6100	0.50	0.13	20.0000	78.0	65 - 137
1,1-Dichloropropene	18.0200	0.50	0.13	20.0000	90.1	74 - 129
1,2,3-Trichloropropane	16.9500	0.50	0.39	20.0000	84.8	74 - 123
1,2,3-Trichlorobenzene	19.1200	0.50	0.18	20.0000	95.6	59 - 130
1,2,4-Trichlorobenzene	18.2900	0.50	0.16	20.0000	91.4	65 - 125
1,2,4-Trimethylbenzene	18.5700	0.50	0.14	20.0000	92.8	88 - 124
1,2-Dibromo-3-chloropropane	18.7200	0.50	0.41	20.0000	93.6	61 - 127
1,2-Dibromoethane	18.0300	0.50	0.24	20.0000	90.2	72 - 125
1,2-Dichlorobenzene	18.7500	0.50	0.20	20.0000	93.8	84 - 113
1,2-Dichloroethane	16.6800	0.50	0.20	20.0000	83.4	68 - 130
1,2-Dichloropropane	17.2600	0.50	0.15	20.0000	86.3	77 - 121
1,3,5-Trimethylbenzene	18.3400	0.50	0.13	20.0000	91.7	83 - 124



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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	RPD Limit	Notes

Batch B1E0486 - MSVOA_LL_W (continued)

LCS (B1E0486-BS1) - Continued

Prepared: 5/28/2021 Analyzed: 5/28/2021

1,3-Dichlorobenzene	18.3500	0.50	0.16	20.0000		91.8	83 - 112		
1,3-Dichloropropane	17.0800	0.50	0.21	20.0000		85.4	77 - 119		
1,4-Dichlorobenzene	18.1500	0.50	0.17	20.0000		90.8	79 - 115		
2,2-Dichloropropane	16.8200	0.50	0.38	20.0000		84.1	67 - 149		
2-Chlorotoluene	17.1700	0.50	0.11	20.0000		85.8	81 - 119		
4-Chlorotoluene	17.6200	0.50	0.12	20.0000		88.1	86 - 117		
4-Isopropyltoluene	18.7200	0.50	0.11	20.0000		93.6	82 - 131		
Benzene	16.8100	0.50	0.13	20.0000		84.0	75 - 124		
Bromobenzene	17.6100	0.50	0.21	20.0000		88.0	82 - 108		
Bromodichloromethane	18.2900	0.50	0.14	20.0000		91.4	80 - 120		
Bromoform	20.0100	0.50	0.20	20.0000		100	70 - 123		
Bromomethane	26.3300	0.50	0.40	20.0000		132	44 - 151		
Carbon tetrachloride	18.2000	0.50	0.09	20.0000		91.0	62 - 140		
Chlorobenzene	17.7100	0.50	0.13	20.0000		88.6	80 - 112		
Chloroethane	19.6900	0.50	0.15	20.0000		98.4	42 - 167		
Chloroform	16.6900	0.50	0.11	20.0000		83.4	77 - 122		
Chloromethane	21.7700	0.50	0.12	20.0000		109	33 - 153		
cis-1,2-Dichloroethene	16.1300	0.50	0.14	20.0000		80.6	75 - 121		
cis-1,3-Dichloropropene	17.9900	0.50	0.13	20.0000		90.0	73 - 127		
Dibromochloromethane	18.8300	0.50	0.16	20.0000		94.2	77 - 122		
Dibromomethane	17.2900	0.50	0.19	20.0000		86.4	75 - 121		
Dichlorodifluoromethane	39.1200	0.50	0.18	20.0000		196	0 - 171		L5
Ethylbenzene	17.9100	0.50	0.13	20.0000		89.6	82 - 119		
Hexachlorobutadiene	18.9500	0.50	0.15	20.0000		94.8	71 - 131		
Isopropylbenzene	17.9900	0.50	0.10	20.0000		90.0	75 - 126		
m,p-Xylene	36.9300	1.0	0.19	40.0000		92.3	86 - 119		
Methylene chloride	17.7200	1.0	0.71	20.0000		88.6	76 - 125		
n-Butylbenzene	18.3100	0.50	0.11	20.0000		91.6	81 - 125		
n-Propylbenzene	17.7800	0.50	0.10	20.0000		88.9	78 - 130		
Naphthalene	18.4000	0.50	0.41	20.0000		92.0	47 - 128		
o-Xylene	18.1600	0.50	0.13	20.0000		90.8	85 - 119		
sec-Butylbenzene	18.5100	0.50	0.09	20.0000		92.6	78 - 130		
Styrene	20.2100	0.50	0.13	20.0000		101	62 - 148		
tert-Butylbenzene	18.2500	0.50	0.09	20.0000		91.2	77 - 125		
Tetrachloroethene	18.7000	0.50	0.10	20.0000		93.5	73 - 120		
Toluene	18.4600	0.50	0.12	20.0000		92.3	79 - 119		
trans-1,2-Dichloroethene	16.3300	0.50	0.09	20.0000		81.6	70 - 129		
Trichloroethene	18.3100	0.50	0.10	20.0000		91.6	73 - 117		
Trichlorofluoromethane	22.6600	0.50	0.23	20.0000		113	59 - 135		
Vinyl chloride	20.8800	0.50	0.13	20.0000		104	58 - 132		

Surrogate: 1,2-Dichloroethane-d4 22.95 25.0000 91.8 64 - 155



Certificate of Analysis

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San Diego , CA 92122

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Reported : 06/21/2021

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

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

Batch B1E0486 - MSVOA_LL_W (continued)

LCS (B1E0486-BS1) - Continued

Prepared: 5/28/2021 Analyzed: 5/28/2021

Surrogate: 4-Bromofluorobenzene	24.30		25.0000		97.2	73 - 124			
Surrogate: Dibromofluoromethane	23.78		25.0000		95.1	78 - 129			
Surrogate: Toluene-d8	25.47		25.0000		102	84 - 117			

LCS Dup (B1E0486-BS1)

Prepared: 5/28/2021 Analyzed: 5/28/2021

1,1,1,2-Tetrachloroethane	18.4100	0.50	0.11	20.0000	92.0	79 - 116	3.31	20	
1,1,1-Trichloroethane	16.5300	0.50	0.21	20.0000	82.6	73 - 130	3.04	20	
1,1,2,2-Tetrachloroethane	17.6100	0.50	0.36	20.0000	88.0	71 - 122	2.30	20	
1,1,2-Trichloroethane	19.7500	0.50	0.25	20.0000	98.8	70 - 124	3.98	20	
1,1-Dichloroethane	15.7100	0.50	0.09	20.0000	78.6	69 - 128	1.01	20	
1,1-Dichloroethene	14.9300	0.50	0.13	20.0000	74.6	65 - 137	4.45	20	
1,1-Dichloropropene	17.1000	0.50	0.13	20.0000	85.5	74 - 129	5.24	20	
1,2,3-Trichloropropane	17.2700	0.50	0.39	20.0000	86.4	74 - 123	1.87	20	
1,2,3-Trichlorobenzene	19.3000	0.50	0.18	20.0000	96.5	59 - 130	0.937	20	
1,2,4-Trichlorobenzene	18.2000	0.50	0.16	20.0000	91.0	65 - 125	0.493	20	
1,2,4-Trimethylbenzene	18.0000	0.50	0.14	20.0000	90.0	88 - 124	3.12	20	
1,2-Dibromo-3-chloropropane	19.1900	0.50	0.41	20.0000	96.0	61 - 127	2.48	20	
1,2-Dibromoethane	18.7600	0.50	0.24	20.0000	93.8	72 - 125	3.97	20	
1,2-Dichlorobenzene	18.5600	0.50	0.20	20.0000	92.8	84 - 113	1.02	20	
1,2-Dichloroethane	16.9200	0.50	0.20	20.0000	84.6	68 - 130	1.43	20	
1,2-Dichloropropane	16.9300	0.50	0.15	20.0000	84.6	77 - 121	1.93	20	
1,3,5-Trimethylbenzene	17.2700	0.50	0.13	20.0000	86.4	83 - 124	6.01	20	
1,3-Dichlorobenzene	17.8300	0.50	0.16	20.0000	89.2	83 - 112	2.87	20	
1,3-Dichloropropane	17.3600	0.50	0.21	20.0000	86.8	77 - 119	1.63	20	
1,4-Dichlorobenzene	17.4900	0.50	0.17	20.0000	87.4	79 - 115	3.70	20	
2,2-Dichloropropane	16.2400	0.50	0.38	20.0000	81.2	67 - 149	3.51	20	
2-Chlorotoluene	16.5900	0.50	0.11	20.0000	83.0	81 - 119	3.44	20	
4-Chlorotoluene	16.9500	0.50	0.12	20.0000	84.8	86 - 117	3.88	20	L3
4-Isopropyltoluene	18.0600	0.50	0.11	20.0000	90.3	82 - 131	3.59	20	
Benzene	16.2100	0.50	0.13	20.0000	81.0	75 - 124	3.63	20	
Bromobenzene	17.4400	0.50	0.21	20.0000	87.2	82 - 108	0.970	20	
Bromodichloromethane	17.6500	0.50	0.14	20.0000	88.2	80 - 120	3.56	20	
Bromoform	20.2500	0.50	0.20	20.0000	101	70 - 123	1.19	20	
Bromomethane	24.4900	0.50	0.40	20.0000	122	44 - 151	7.24	20	
Carbon tetrachloride	17.2200	0.50	0.09	20.0000	86.1	62 - 140	5.53	20	
Chlorobenzene	17.5000	0.50	0.13	20.0000	87.5	80 - 112	1.19	20	
Chloroethane	18.7200	0.50	0.15	20.0000	93.6	42 - 167	5.05	20	
Chloroform	16.3400	0.50	0.11	20.0000	81.7	77 - 122	2.12	20	
Chloromethane	21.7300	0.50	0.12	20.0000	109	33 - 153	0.184	20	
cis-1,2-Dichloroethene	16.0600	0.50	0.14	20.0000	80.3	75 - 121	0.435	20	
cis-1,3-Dichloropropene	17.6600	0.50	0.13	20.0000	88.3	73 - 127	1.85	20	
Dibromochloromethane	18.6600	0.50	0.16	20.0000	93.3	77 - 122	0.907	20	



Certificate of Analysis

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Reported : 06/21/2021

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 B1E0486 - MSVOA_LL_W (continued)

LCS Dup (B1E0486-BSD1) - Continued

Prepared: 5/28/2021 Analyzed: 5/28/2021

Dibromomethane	17.2700	0.50	0.19	20.0000		86.4	75 - 121	0.116	20	L5
Dichlorodifluoromethane	37.0000	0.50	0.18	20.0000		185	0 - 171	5.57	20	
Ethylbenzene	17.3600	0.50	0.13	20.0000		86.8	82 - 119	3.12	20	
Hexachlorobutadiene	17.7200	0.50	0.15	20.0000		88.6	71 - 131	6.71	20	
Isopropylbenzene	17.2300	0.50	0.10	20.0000		86.2	75 - 126	4.32	20	
m,p-Xylene	36.2300	1.0	0.19	40.0000		90.6	86 - 119	1.91	20	
Methylene chloride	17.2700	1.0	0.71	20.0000		86.4	76 - 125	2.57	20	
n-Butylbenzene	17.2400	0.50	0.11	20.0000		86.2	81 - 125	6.02	20	
n-Propylbenzene	16.9300	0.50	0.10	20.0000		84.6	78 - 130	4.90	20	
Naphthalene	19.3600	0.50	0.41	20.0000		96.8	47 - 128	5.08	20	
o-Xylene	17.6800	0.50	0.13	20.0000		88.4	85 - 119	2.68	20	
sec-Butylbenzene	17.9600	0.50	0.09	20.0000		89.8	78 - 130	3.02	20	
Styrene	19.9000	0.50	0.13	20.0000		99.5	62 - 148	1.55	20	
tert-Butylbenzene	17.5200	0.50	0.09	20.0000		87.6	77 - 125	4.08	20	
Tetrachloroethene	18.3300	0.50	0.10	20.0000		91.6	73 - 120	2.00	20	
Toluene	17.8500	0.50	0.12	20.0000		89.2	79 - 119	3.36	20	
trans-1,2-Dichloroethene	16.1600	0.50	0.09	20.0000		80.8	70 - 129	1.05	20	
Trichloroethene	17.3600	0.50	0.10	20.0000		86.8	73 - 117	5.33	20	
Trichlorofluoromethane	22.0800	0.50	0.23	20.0000		110	59 - 135	2.59	20	
Vinyl chloride	19.5800	0.50	0.13	20.0000		97.9	58 - 132	6.43	20	
Surrogate: 1,2-Dichloroethane-d4	22.91			25.0000		91.6	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.45			25.0000		97.8	73 - 124			
Surrogate: Dibromofluoromethane	24.54			25.0000		98.2	78 - 129			
Surrogate: Toluene-d8	25.56			25.0000		102	84 - 117			

Matrix Spike (B1E0486-MS1)

Source: 2101184-03

Prepared: 5/28/2021 Analyzed: 5/28/2021

1,1,1,2-Tetrachloroethane	17.9700	0.50	0.11	20.0000	ND	89.8	81 - 133			M2
1,1,1-Trichloroethane	16.9400	0.50	0.21	20.0000	ND	84.7	93 - 149			
1,1,2,2-Tetrachloroethane	17.2700	0.50	0.36	20.0000	ND	86.4	69 - 151			
1,1,2-Trichloroethane	18.9900	0.50	0.25	20.0000	ND	95.0	78 - 130			
1,1-Dichloroethane	15.6000	0.50	0.09	20.0000	ND	78.0	68 - 135			M2
1,1-Dichloroethene	15.3200	0.50	0.13	20.0000	ND	76.6	77 - 134			
1,1-Dichloropropene	17.7500	0.50	0.13	20.0000	ND	88.8	91 - 138			M2
1,2,3-Trichloropropane	16.5600	0.50	0.39	20.0000	ND	82.8	77 - 136			
1,2,3-Trichlorobenzene	18.1500	0.50	0.18	20.0000	ND	90.8	72 - 129			
1,2,4-Trichlorobenzene	17.3600	0.50	0.16	20.0000	ND	86.8	64 - 135			
1,2,4-Trimethylbenzene	17.6600	0.50	0.14	20.0000	ND	88.3	10 - 179			
1,2-Dibromo-3-chloropropane	18.7700	0.50	0.41	20.0000	ND	93.8	62 - 153			
1,2-Dibromoethane	17.8200	0.50	0.24	20.0000	ND	89.1	80 - 132			
1,2-Dichlorobenzene	17.6800	0.50	0.20	20.0000	ND	88.4	81 - 131			
1,2-Dichloroethane	16.4700	0.50	0.20	20.0000	ND	82.4	68 - 146			



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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	RPD Limit	Notes

Batch B1E0486 - MSVOA_LL_W (continued)

Matrix Spike (B1E0486-MS1) - Continued

Source: 2101184-03

Prepared: 5/28/2021 Analyzed: 5/28/2021

1,2-Dichloropropane	16.6200	0.50	0.15	20.0000	ND	83.1	74 - 136		
1,3,5-Trimethylbenzene	17.6500	0.50	0.13	20.0000	ND	88.2	66 - 149		
1,3-Dichlorobenzene	17.3100	0.50	0.16	20.0000	ND	86.6	79 - 128		
1,3-Dichloropropane	16.8700	0.50	0.21	20.0000	ND	84.4	80 - 129		
1,4-Dichlorobenzene	17.3300	0.50	0.17	20.0000	ND	86.6	84 - 121		
2,2-Dichloropropane	15.3300	0.50	0.38	20.0000	ND	76.6	63 - 179		
2-Chlorotoluene	16.6000	0.50	0.11	20.0000	ND	83.0	76 - 142		
4-Chlorotoluene	16.7300	0.50	0.12	20.0000	ND	83.6	72 - 152		
4-Isopropyltoluene	18.0300	0.50	0.11	20.0000	ND	90.2	84 - 141		
Benzene	16.4200	0.50	0.13	20.0000	ND	82.1	79 - 131		
Bromobenzene	17.1400	0.50	0.21	20.0000	ND	85.7	82 - 121		
Bromodichloromethane	17.4900	0.50	0.14	20.0000	ND	87.4	86 - 138		
Bromoform	19.5500	0.50	0.20	20.0000	ND	97.8	80 - 136		
Bromomethane	28.7100	0.50	0.40	20.0000	ND	144	35 - 194		
Carbon tetrachloride	18.2500	0.50	0.09	20.0000	ND	91.2	73 - 176		
Chlorobenzene	17.2200	0.50	0.13	20.0000	ND	86.1	81 - 124		
Chloroethane	22.8500	0.50	0.15	20.0000	ND	114	0 - 257		
Chloroform	15.9100	0.50	0.11	20.0000	ND	79.6	76 - 139		
Chloromethane	24.9200	0.50	0.12	20.0000	ND	125	27 - 144		
cis-1,2-Dichloroethene	15.8400	0.50	0.14	20.0000	ND	79.2	69 - 139		
cis-1,3-Dichloropropene	17.4700	0.50	0.13	20.0000	ND	87.4	67 - 149		
Dibromochloromethane	17.5200	0.50	0.16	20.0000	ND	87.6	91 - 131		M2
Dibromomethane	17.2700	0.50	0.19	20.0000	ND	86.4	70 - 134		
Dichlorodifluoromethane	45.9300	0.50	0.18	20.0000	ND	230	0 - 161		M2
Ethylbenzene	17.6000	0.50	0.13	20.0000	ND	88.0	89 - 134		M2
Hexachlorobutadiene	18.7800	0.50	0.15	20.0000	ND	93.9	73 - 137		
Isopropylbenzene	17.2600	0.50	0.10	20.0000	ND	86.3	72 - 152		
m,p-Xylene	35.8500	1.0	0.19	40.0000	ND	89.6	82 - 141		
Methylene chloride	15.9500	1.0	0.71	20.0000	ND	79.8	74 - 133		
n-Butylbenzene	17.5800	0.50	0.11	20.0000	ND	87.9	65 - 164		
n-Propylbenzene	17.3700	0.50	0.10	20.0000	ND	86.8	73 - 161		
Naphthalene	17.8400	0.50	0.41	20.0000	ND	89.2	59 - 105		
o-Xylene	17.3500	0.50	0.13	20.0000	ND	86.8	90 - 134		M2
sec-Butylbenzene	18.3000	0.50	0.09	20.0000	ND	91.5	80 - 157		
Styrene	19.0400	0.50	0.13	20.0000	ND	95.2	0 - 222		
tert-Butylbenzene	17.8900	0.50	0.09	20.0000	ND	89.4	88 - 141		
Tetrachloroethene	18.5600	0.50	0.10	20.0000	ND	92.8	75 - 136		
Toluene	18.0600	0.50	0.12	20.0000	ND	90.3	82 - 132		
trans-1,2-Dichloroethene	15.7800	0.50	0.09	20.0000	ND	78.9	65 - 135		
Trichloroethene	17.0500	0.50	0.10	20.0000	ND	85.2	75 - 128		
Trichlorofluoromethane	26.8100	0.50	0.23	20.0000	ND	134	89 - 143		
Vinyl chloride	24.7400	0.50	0.13	20.0000	ND	124	50 - 148		



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

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

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

Batch B1E0486 - MSVOA_LL_W (continued)

Matrix Spike (B1E0486-MS1) - Continued

Source: 2101184-03

Prepared: 5/28/2021 Analyzed: 5/28/2021

Surrogate: 1,2-Dichloroethane-d4	23.28		25.0000		93.1	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.08		25.0000		96.3	73 - 124			
Surrogate: Dibromofluoromethane	23.90		25.0000		95.6	78 - 129			
Surrogate: Toluene-d8	25.28		25.0000		101	84 - 117			

Matrix Spike Dup (B1E0486-MSD1)

Source: 2101184-03

Prepared: 5/28/2021 Analyzed: 5/28/2021

1,1,1,2-Tetrachloroethane	19.0000	0.50	0.11	20.0000	ND	95.0	81 - 133	5.57	20	M2
1,1,1-Trichloroethane	17.2500	0.50	0.21	20.0000	ND	86.2	93 - 149	1.81	20	
1,1,2,2-Tetrachloroethane	16.9800	0.50	0.36	20.0000	ND	84.9	69 - 151	1.69	20	
1,1,2-Trichloroethane	18.9800	0.50	0.25	20.0000	ND	94.9	78 - 130	0.0527	20	
1,1-Dichloroethane	15.9600	0.50	0.09	20.0000	ND	79.8	68 - 135	2.28	20	
1,1-Dichloroethene	15.8700	0.50	0.13	20.0000	ND	79.4	77 - 134	3.53	20	
1,1-Dichloropropene	19.0400	0.50	0.13	20.0000	ND	95.2	91 - 138	7.01	20	
1,2,3-Trichloropropane	16.2800	0.50	0.39	20.0000	ND	81.4	77 - 136	1.71	20	
1,2,3-Trichlorobenzene	18.4800	0.50	0.18	20.0000	ND	92.4	72 - 129	1.80	20	
1,2,4-Trichlorobenzene	17.0600	0.50	0.16	20.0000	ND	85.3	64 - 135	1.74	20	
1,2,4-Trimethylbenzene	18.4800	0.50	0.14	20.0000	ND	92.4	10 - 179	4.54	20	
1,2-Dibromo-3-chloropropane	16.7100	0.50	0.41	20.0000	ND	83.6	62 - 153	11.6	20	
1,2-Dibromoethane	18.4900	0.50	0.24	20.0000	ND	92.4	80 - 132	3.69	20	
1,2-Dichlorobenzene	18.1500	0.50	0.20	20.0000	ND	90.8	81 - 131	2.62	20	
1,2-Dichloroethane	16.6300	0.50	0.20	20.0000	ND	83.2	68 - 146	0.967	20	
1,2-Dichloropropane	17.6500	0.50	0.15	20.0000	ND	88.2	74 - 136	6.01	20	
1,3,5-Trimethylbenzene	18.0400	0.50	0.13	20.0000	ND	90.2	66 - 149	2.19	20	
1,3-Dichlorobenzene	17.7100	0.50	0.16	20.0000	ND	88.6	79 - 128	2.28	20	
1,3-Dichloropropane	16.9600	0.50	0.21	20.0000	ND	84.8	80 - 129	0.532	20	
1,4-Dichlorobenzene	17.4900	0.50	0.17	20.0000	ND	87.4	84 - 121	0.919	20	
2,2-Dichloropropane	15.3100	0.50	0.38	20.0000	ND	76.6	63 - 179	0.131	20	
2-Chlorotoluene	17.1900	0.50	0.11	20.0000	ND	86.0	76 - 142	3.49	20	
4-Chlorotoluene	17.6100	0.50	0.12	20.0000	ND	88.0	72 - 152	5.13	20	
4-Isopropyltoluene	19.0500	0.50	0.11	20.0000	ND	95.2	84 - 141	5.50	20	
Benzene	17.1900	0.50	0.13	20.0000	ND	86.0	79 - 131	4.58	20	
Bromobenzene	17.1100	0.50	0.21	20.0000	ND	85.6	82 - 121	0.175	20	
Bromodichloromethane	18.2700	0.50	0.14	20.0000	ND	91.4	86 - 138	4.36	20	
Bromoform	19.9800	0.50	0.20	20.0000	ND	99.9	80 - 136	2.18	20	
Bromomethane	30.2200	0.50	0.40	20.0000	ND	151	35 - 194	5.12	20	
Carbon tetrachloride	18.7800	0.50	0.09	20.0000	ND	93.9	73 - 176	2.86	20	
Chlorobenzene	18.2600	0.50	0.13	20.0000	ND	91.3	81 - 124	5.86	20	
Chloroethane	22.6500	0.50	0.15	20.0000	ND	113	0 - 257	0.879	20	
Chloroform	16.7500	0.50	0.11	20.0000	ND	83.8	76 - 139	5.14	20	
Chloromethane	24.9300	0.50	0.12	20.0000	ND	125	27 - 144	0.0401	20	
cis-1,2-Dichloroethene	16.3100	0.50	0.14	20.0000	ND	81.6	69 - 139	2.92	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	RPD	RPD Limit	Notes

Batch B1E0486 - MSVOA_LL_W (continued)

Matrix Spike Dup (B1E0486-MSD1) - Continued

Source: 2101184-03

Prepared: 5/28/2021 Analyzed: 5/28/2021

cis-1,3-Dichloropropene	17.6200	0.50	0.13	20.0000	ND	88.1	67 - 149	0.855	20	M2
Dibromochloromethane	18.2300	0.50	0.16	20.0000	ND	91.2	91 - 131	3.97	20	
Dibromomethane	17.5600	0.50	0.19	20.0000	ND	87.8	70 - 134	1.67	20	
Dichlorodifluoromethane	43.7900	0.50	0.18	20.0000	ND	219	0 - 161	4.77	20	
Ethylbenzene	18.6200	0.50	0.13	20.0000	ND	93.1	89 - 134	5.63	20	
Hexachlorobutadiene	18.8000	0.50	0.15	20.0000	ND	94.0	73 - 137	0.106	20	
Isopropylbenzene	18.0300	0.50	0.10	20.0000	ND	90.2	72 - 152	4.36	20	
m,p-Xylene	37.9700	1.0	0.19	40.0000	ND	94.9	82 - 141	5.74	20	
Methylene chloride	16.8700	1.0	0.71	20.0000	ND	84.4	74 - 133	5.61	20	
n-Butylbenzene	17.9600	0.50	0.11	20.0000	ND	89.8	65 - 164	2.14	20	
n-Propylbenzene	17.9400	0.50	0.10	20.0000	ND	89.7	73 - 161	3.23	20	
Naphthalene	17.3700	0.50	0.41	20.0000	ND	86.8	59 - 105	2.67	20	
o-Xylene	18.6000	0.50	0.13	20.0000	ND	93.0	90 - 134	6.95	20	
sec-Butylbenzene	18.7900	0.50	0.09	20.0000	ND	94.0	80 - 157	2.64	20	
Styrene	20.5800	0.50	0.13	20.0000	ND	103	0 - 222	7.77	20	
tert-Butylbenzene	18.6600	0.50	0.09	20.0000	ND	93.3	88 - 141	4.21	20	
Tetrachloroethene	19.2900	0.50	0.10	20.0000	ND	96.4	75 - 136	3.86	20	
Toluene	19.0800	0.50	0.12	20.0000	ND	95.4	82 - 132	5.49	20	
trans-1,2-Dichloroethene	16.7500	0.50	0.09	20.0000	ND	83.8	65 - 135	5.96	20	
Trichloroethene	18.1600	0.50	0.10	20.0000	ND	90.8	75 - 128	6.31	20	
Trichlorofluoromethane	25.8300	0.50	0.23	20.0000	ND	129	89 - 143	3.72	20	
Vinyl chloride	24.2200	0.50	0.13	20.0000	ND	121	50 - 148	2.12	20	
Surrogate: 1,2-Dichloroethane-d4	22.19			25.0000		88.8	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.46			25.0000		97.8	73 - 124			
Surrogate: Dibromofluoromethane	22.93			25.0000		91.7	78 - 129			
Surrogate: Toluene-d8	25.67			25.0000		103	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 B1F0006 - MSVOA_LL_W

Blank (B1F0006-BLK1)

Prepared: 6/1/2021 Analyzed: 6/1/2021

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



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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	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

Blank (B1F0006-BLK1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

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	22.34	25.0000	89.4	64 - 155
Surrogate: 4-Bromofluorobenzene	22.45	25.0000	89.8	73 - 124
Surrogate: Dibromofluoromethane	22.87	25.0000	91.5	78 - 129
Surrogate: Toluene-d8	24.59	25.0000	98.4	84 - 117

LCS (B1F0006-BS1)

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	17.1300	0.50	0.11	20.0000	85.6	79 - 116	
1,1,1-Trichloroethane	17.0000	0.50	0.21	20.0000	85.0	73 - 130	
1,1,2,2-Tetrachloroethane	15.7000	0.50	0.36	20.0000	78.5	71 - 122	
1,1,2-Trichloroethane	16.9400	0.50	0.25	20.0000	84.7	70 - 124	
1,1-Dichloroethane	16.4300	0.50	0.09	20.0000	82.2	69 - 128	
1,1-Dichloroethene	20.0900	0.50	0.13	20.0000	100	65 - 137	
1,1-Dichloropropene	18.0700	0.50	0.13	20.0000	90.4	74 - 129	
1,2,3-Trichloropropane	15.3800	0.50	0.39	20.0000	76.9	74 - 123	
1,2,3-Trichlorobenzene	17.3900	0.50	0.18	20.0000	87.0	59 - 130	
1,2,4-Trichlorobenzene	16.4200	0.50	0.16	20.0000	82.1	65 - 125	
1,2,4-Trimethylbenzene	16.9400	0.50	0.14	20.0000	84.7	88 - 124	L3
1,2-Dibromo-3-chloropropane	17.1900	0.50	0.41	20.0000	86.0	61 - 127	
1,2-Dibromoethane	18.0000	0.50	0.24	20.0000	90.0	72 - 125	
1,2-Dichlorobenzene	16.8500	0.50	0.20	20.0000	84.2	84 - 113	
1,2-Dichloroethane	16.1700	0.50	0.20	20.0000	80.8	68 - 130	
1,2-Dichloropropane	16.3900	0.50	0.15	20.0000	82.0	77 - 121	
1,3,5-Trimethylbenzene	17.0000	0.50	0.13	20.0000	85.0	83 - 124	
1,3-Dichlorobenzene	16.5700	0.50	0.16	20.0000	82.8	83 - 112	L3
1,3-Dichloropropane	15.8400	0.50	0.21	20.0000	79.2	77 - 119	



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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	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

LCS (B1F0006-BS1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,4-Dichlorobenzene	16.7300	0.50	0.17	20.0000		83.6	79 - 115		
2,2-Dichloropropane	16.6000	0.50	0.38	20.0000		83.0	67 - 149		
2-Chlorotoluene	15.8700	0.50	0.11	20.0000		79.4	81 - 119		L3
4-Chlorotoluene	15.7600	0.50	0.12	20.0000		78.8	86 - 117		L3
4-Isopropyltoluene	17.0700	0.50	0.11	20.0000		85.4	82 - 131		
Benzene	16.8600	0.50	0.13	20.0000		84.3	75 - 124		
Bromobenzene	16.3300	0.50	0.21	20.0000		81.6	82 - 108		L3
Bromodichloromethane	16.8000	0.50	0.14	20.0000		84.0	80 - 120		
Bromoform	17.5300	0.50	0.20	20.0000		87.6	70 - 123		
Bromomethane	28.8200	0.50	0.40	20.0000		144	44 - 151		
Carbon tetrachloride	18.4400	0.50	0.09	20.0000		92.2	62 - 140		
Chlorobenzene	16.9300	0.50	0.13	20.0000		84.6	80 - 112		
Chloroethane	18.9400	0.50	0.15	20.0000		94.7	42 - 167		
Chloroform	16.5100	0.50	0.11	20.0000		82.6	77 - 122		
Chloromethane	21.1600	0.50	0.12	20.0000		106	33 - 153		
cis-1,2-Dichloroethene	16.3400	0.50	0.14	20.0000		81.7	75 - 121		
cis-1,3-Dichloropropene	16.8800	0.50	0.13	20.0000		84.4	73 - 127		
Dibromochloromethane	17.3900	0.50	0.16	20.0000		87.0	77 - 122		
Dibromomethane	16.6300	0.50	0.19	20.0000		83.2	75 - 121		
Dichlorodifluoromethane	35.5500	0.50	0.18	20.0000		178	0 - 171		L5
Ethylbenzene	17.0600	0.50	0.13	20.0000		85.3	82 - 119		
Hexachlorobutadiene	17.2400	0.50	0.15	20.0000		86.2	71 - 131		
Isopropylbenzene	16.5400	0.50	0.10	20.0000		82.7	75 - 126		
m,p-Xylene	34.6500	1.0	0.19	40.0000		86.6	86 - 119		
Methylene chloride	18.7300	1.0	0.71	20.0000		93.6	76 - 125		
n-Butylbenzene	16.2600	0.50	0.11	20.0000		81.3	81 - 125		
n-Propylbenzene	16.4200	0.50	0.10	20.0000		82.1	78 - 130		
Naphthalene	16.8500	0.50	0.41	20.0000		84.2	47 - 128		
o-Xylene	16.9500	0.50	0.13	20.0000		84.8	85 - 119		L3
sec-Butylbenzene	17.1300	0.50	0.09	20.0000		85.6	78 - 130		
Styrene	18.6000	0.50	0.13	20.0000		93.0	62 - 148		
tert-Butylbenzene	16.6700	0.50	0.09	20.0000		83.4	77 - 125		
Tetrachloroethene	18.1200	0.50	0.10	20.0000		90.6	73 - 120		
Toluene	17.9800	0.50	0.12	20.0000		89.9	79 - 119		
trans-1,2-Dichloroethene	17.4400	0.50	0.09	20.0000		87.2	70 - 129		
Trichloroethene	17.6800	0.50	0.10	20.0000		88.4	73 - 117		
Trichlorofluoromethane	21.9700	0.50	0.23	20.0000		110	59 - 135		
Vinyl chloride	20.1200	0.50	0.13	20.0000		101	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	22.05			25.0000		88.2	64 - 155		
Surrogate: 4-Bromofluorobenzene	23.71			25.0000		94.8	73 - 124		
Surrogate: Dibromofluoromethane	22.88			25.0000		91.5	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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

LCS (B1F0006-BS1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

Surrogate: Toluene-d8 24.82 25.0000 99.3 84 - 117

LCS Dup (B1F0006-BS1)

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	17.1200	0.50	0.11	20.0000	85.6	79 - 116	0.0584	20	
1,1,1-Trichloroethane	16.9100	0.50	0.21	20.0000	84.6	73 - 130	0.531	20	
1,1,2,2-Tetrachloroethane	16.0700	0.50	0.36	20.0000	80.4	71 - 122	2.33	20	
1,1,2-Trichloroethane	17.2200	0.50	0.25	20.0000	86.1	70 - 124	1.64	20	
1,1-Dichloroethane	15.6800	0.50	0.09	20.0000	78.4	69 - 128	4.67	20	
1,1-Dichloroethene	19.4100	0.50	0.13	20.0000	97.0	65 - 137	3.44	20	
1,1-Dichloropropene	17.4500	0.50	0.13	20.0000	87.2	74 - 129	3.49	20	
1,2,3-Trichloropropane	15.3200	0.50	0.39	20.0000	76.6	74 - 123	0.391	20	
1,2,3-Trichlorobenzene	17.0500	0.50	0.18	20.0000	85.2	59 - 130	1.97	20	
1,2,4-Trichlorobenzene	16.2400	0.50	0.16	20.0000	81.2	65 - 125	1.10	20	
1,2,4-Trimethylbenzene	16.5900	0.50	0.14	20.0000	83.0	88 - 124	2.09	20	L3
1,2-Dibromo-3-chloropropane	16.8100	0.50	0.41	20.0000	84.0	61 - 127	2.24	20	
1,2-Dibromoethane	17.8100	0.50	0.24	20.0000	89.0	72 - 125	1.06	20	
1,2-Dichlorobenzene	16.9500	0.50	0.20	20.0000	84.8	84 - 113	0.592	20	
1,2-Dichloroethane	16.0800	0.50	0.20	20.0000	80.4	68 - 130	0.558	20	
1,2-Dichloropropane	16.5100	0.50	0.15	20.0000	82.6	77 - 121	0.729	20	
1,3,5-Trimethylbenzene	16.3300	0.50	0.13	20.0000	81.6	83 - 124	4.02	20	L3
1,3-Dichlorobenzene	16.6800	0.50	0.16	20.0000	83.4	83 - 112	0.662	20	
1,3-Dichloropropane	16.3500	0.50	0.21	20.0000	81.8	77 - 119	3.17	20	
1,4-Dichlorobenzene	16.3200	0.50	0.17	20.0000	81.6	79 - 115	2.48	20	
2,2-Dichloropropane	15.6100	0.50	0.38	20.0000	78.0	67 - 149	6.15	20	
2-Chlorotoluene	15.6500	0.50	0.11	20.0000	78.2	81 - 119	1.40	20	L3
4-Chlorotoluene	15.7200	0.50	0.12	20.0000	78.6	86 - 117	0.254	20	L3
4-Isopropyltoluene	16.6200	0.50	0.11	20.0000	83.1	82 - 131	2.67	20	
Benzene	16.5800	0.50	0.13	20.0000	82.9	75 - 124	1.67	20	
Bromobenzene	16.2400	0.50	0.21	20.0000	81.2	82 - 108	0.553	20	L3
Bromodichloromethane	16.6500	0.50	0.14	20.0000	83.2	80 - 120	0.897	20	
Bromoform	18.3200	0.50	0.20	20.0000	91.6	70 - 123	4.41	20	
Bromomethane	27.4700	0.50	0.40	20.0000	137	44 - 151	4.80	20	
Carbon tetrachloride	17.4300	0.50	0.09	20.0000	87.2	62 - 140	5.63	20	
Chlorobenzene	16.7400	0.50	0.13	20.0000	83.7	80 - 112	1.13	20	
Chloroethane	18.4500	0.50	0.15	20.0000	92.2	42 - 167	2.62	20	
Chloroform	16.0000	0.50	0.11	20.0000	80.0	77 - 122	3.14	20	
Chloromethane	20.2200	0.50	0.12	20.0000	101	33 - 153	4.54	20	
cis-1,2-Dichloroethene	15.8200	0.50	0.14	20.0000	79.1	75 - 121	3.23	20	
cis-1,3-Dichloropropene	16.1700	0.50	0.13	20.0000	80.8	73 - 127	4.30	20	
Dibromochloromethane	17.0800	0.50	0.16	20.0000	85.4	77 - 122	1.80	20	
Dibromomethane	16.8700	0.50	0.19	20.0000	84.4	75 - 121	1.43	20	
Dichlorodifluoromethane	34.0600	0.50	0.18	20.0000	170	0 - 171	4.28	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

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 B1F0006 - MSVOA_LL_W (continued)

LCS Dup (B1F0006-BSD1) - Continued

Prepared: 6/1/2021 Analyzed: 6/1/2021

Ethylbenzene	16.9000	0.50	0.13	20.0000		84.5	82 - 119	0.942	20	
Hexachlorobutadiene	16.3500	0.50	0.15	20.0000		81.8	71 - 131	5.30	20	
Isopropylbenzene	16.0500	0.50	0.10	20.0000		80.2	75 - 126	3.01	20	
m,p-Xylene	34.6600	1.0	0.19	40.0000		86.6	86 - 119	0.0289	20	
Methylene chloride	18.5200	1.0	0.71	20.0000		92.6	76 - 125	1.13	20	
n-Butylbenzene	15.7900	0.50	0.11	20.0000		79.0	81 - 125	2.93	20	L3
n-Propylbenzene	16.0300	0.50	0.10	20.0000		80.2	78 - 130	2.40	20	
Naphthalene	16.6400	0.50	0.41	20.0000		83.2	47 - 128	1.25	20	
o-Xylene	16.6700	0.50	0.13	20.0000		83.4	85 - 119	1.67	20	L3
sec-Butylbenzene	16.5700	0.50	0.09	20.0000		82.8	78 - 130	3.32	20	
Styrene	18.8300	0.50	0.13	20.0000		94.2	62 - 148	1.23	20	
tert-Butylbenzene	16.3200	0.50	0.09	20.0000		81.6	77 - 125	2.12	20	
Tetrachloroethene	17.9600	0.50	0.10	20.0000		89.8	73 - 120	0.887	20	
Toluene	17.6400	0.50	0.12	20.0000		88.2	79 - 119	1.91	20	
trans-1,2-Dichloroethene	16.9600	0.50	0.09	20.0000		84.8	70 - 129	2.79	20	
Trichloroethene	16.5100	0.50	0.10	20.0000		82.6	73 - 117	6.84	20	
Trichlorofluoromethane	21.1800	0.50	0.23	20.0000		106	59 - 135	3.66	20	
Vinyl chloride	18.7700	0.50	0.13	20.0000		93.8	58 - 132	6.94	20	
Surrogate: 1,2-Dichloroethane-d4	21.92			25.0000		87.7	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.00			25.0000		96.0	73 - 124			
Surrogate: Dibromofluoromethane	22.49			25.0000		90.0	78 - 129			
Surrogate: Toluene-d8	24.92			25.0000		99.7	84 - 117			

Matrix Spike (B1F0006-MS1)

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	18.2400	0.50	0.11	20.0000	ND	91.2	81 - 133
1,1,1-Trichloroethane	19.0600	0.50	0.21	20.0000	ND	95.3	93 - 149
1,1,2,2-Tetrachloroethane	15.6200	0.50	0.36	20.0000	ND	78.1	69 - 151
1,1,2-Trichloroethane	18.4100	0.50	0.25	20.0000	ND	92.0	78 - 130
1,1-Dichloroethane	17.6100	0.50	0.09	20.0000	ND	88.0	68 - 135
1,1-Dichloroethene	22.2100	0.50	0.13	20.0000	ND	111	77 - 134
1,1-Dichloropropene	20.5900	0.50	0.13	20.0000	ND	103	91 - 138
1,2,3-Trichloropropane	15.6500	0.50	0.39	20.0000	ND	78.2	77 - 136
1,2,3-Trichlorobenzene	17.8400	0.50	0.18	20.0000	ND	89.2	72 - 129
1,2,4-Trichlorobenzene	17.2800	0.50	0.16	20.0000	ND	86.4	64 - 135
1,2,4-Trimethylbenzene	18.5200	0.50	0.14	20.0000	ND	92.6	10 - 179
1,2-Dibromo-3-chloropropane	17.0600	0.50	0.41	20.0000	ND	85.3	62 - 153
1,2-Dibromoethane	18.3000	0.50	0.24	20.0000	ND	91.5	80 - 132
1,2-Dichlorobenzene	17.9900	0.50	0.20	20.0000	ND	90.0	81 - 131
1,2-Dichloroethane	17.3100	0.50	0.20	20.0000	ND	86.6	68 - 146
1,2-Dichloropropane	17.4900	0.50	0.15	20.0000	ND	87.4	74 - 136
1,3,5-Trimethylbenzene	17.8900	0.50	0.13	20.0000	ND	89.4	66 - 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 Limits	RPD	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

Matrix Spike (B1F0006-MS1) - Continued

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,3-Dichlorobenzene	18.0200	0.50	0.16	20.0000	ND	90.1	79 - 128		
1,3-Dichloropropane	16.7300	0.50	0.21	20.0000	ND	83.6	80 - 129		
1,4-Dichlorobenzene	17.6500	0.50	0.17	20.0000	ND	88.2	84 - 121		
2,2-Dichloropropane	18.3700	0.50	0.38	20.0000	ND	91.8	63 - 179		
2-Chlorotoluene	16.9900	0.50	0.11	20.0000	ND	85.0	76 - 142		
4-Chlorotoluene	17.4700	0.50	0.12	20.0000	ND	87.4	72 - 152		
4-Isopropyltoluene	18.6900	0.50	0.11	20.0000	ND	93.4	84 - 141		
Benzene	18.5000	0.50	0.13	20.0000	ND	92.5	79 - 131		
Bromobenzene	17.5600	0.50	0.21	20.0000	ND	87.8	82 - 121		
Bromodichloromethane	17.5500	0.50	0.14	20.0000	ND	87.8	86 - 138		
Bromoform	18.4700	0.50	0.20	20.0000	ND	92.4	80 - 136		
Bromomethane	31.6100	0.50	0.40	20.0000	ND	158	35 - 194		
Carbon tetrachloride	20.6300	0.50	0.09	20.0000	ND	103	73 - 176		
Chlorobenzene	17.8400	0.50	0.13	20.0000	ND	89.2	81 - 124		
Chloroethane	21.9600	0.50	0.15	20.0000	ND	110	0 - 257		
Chloroform	17.1500	0.50	0.11	20.0000	ND	85.8	76 - 139		
Chloromethane	24.5300	0.50	0.12	20.0000	ND	123	27 - 144		
cis-1,2-Dichloroethene	17.8200	0.50	0.14	20.0000	ND	89.1	69 - 139		
cis-1,3-Dichloropropene	18.2400	0.50	0.13	20.0000	ND	91.2	67 - 149		
Dibromochloromethane	17.6300	0.50	0.16	20.0000	ND	88.2	91 - 131		M2
Dibromomethane	17.4700	0.50	0.19	20.0000	ND	87.4	70 - 134		
Dichlorodifluoromethane	42.0500	0.50	0.18	20.0000	ND	210	0 - 161		M2
Ethylbenzene	18.4100	0.50	0.13	20.0000	ND	92.0	89 - 134		
Hexachlorobutadiene	18.4000	0.50	0.15	20.0000	ND	92.0	73 - 137		
Isopropylbenzene	18.0100	0.50	0.10	20.0000	ND	90.0	72 - 152		
m,p-Xylene	38.0000	1.0	0.19	40.0000	ND	95.0	82 - 141		
Methylene chloride	18.8000	1.0	0.71	20.0000	ND	94.0	74 - 133		
n-Butylbenzene	17.8900	0.50	0.11	20.0000	ND	89.4	65 - 164		
n-Propylbenzene	17.7100	0.50	0.10	20.0000	ND	88.6	73 - 161		
Naphthalene	16.9200	0.50	0.41	20.0000	ND	84.6	59 - 105		
o-Xylene	18.0900	0.50	0.13	20.0000	ND	90.4	90 - 134		
sec-Butylbenzene	18.7900	0.50	0.09	20.0000	ND	94.0	80 - 157		
Styrene	20.0300	0.50	0.13	20.0000	ND	100	0 - 222		
tert-Butylbenzene	18.2500	0.50	0.09	20.0000	ND	91.2	88 - 141		
Tetrachloroethene	20.1200	0.50	0.10	20.0000	ND	101	75 - 136		
Toluene	19.4100	0.50	0.12	20.0000	ND	97.0	82 - 132		
trans-1,2-Dichloroethene	19.1500	0.50	0.09	20.0000	ND	95.8	65 - 135		
Trichloroethene	19.2200	0.50	0.10	20.0000	ND	96.1	75 - 128		
Trichlorofluoromethane	26.4200	0.50	0.23	20.0000	ND	132	89 - 143		
Vinyl chloride	23.2600	0.50	0.13	20.0000	ND	116	50 - 148		

Surrogate: 1,2-Dichloroethane-d4 21.92 25.0000 87.7 64 - 155



Certificate of Analysis

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Reported : 06/21/2021

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

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

Batch B1F0006 - MSVOA_LL_W (continued)

Matrix Spike (B1F0006-MS1) - Continued

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

Surrogate: 4-Bromofluorobenzene	23.93		25.0000		95.7	73 - 124			
Surrogate: Dibromofluoromethane	23.05		25.0000		92.2	78 - 129			
Surrogate: Toluene-d8	24.93		25.0000		99.7	84 - 117			

Matrix Spike Dup (B1F0006-MSD1)

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

1,1,1,2-Tetrachloroethane	17.1300	0.50	0.11	20.0000	ND	85.6	81 - 133	6.28	20	
1,1,1-Trichloroethane	17.0700	0.50	0.21	20.0000	ND	85.4	93 - 149	11.0	20	M2
1,1,2,2-Tetrachloroethane	15.1600	0.50	0.36	20.0000	ND	75.8	69 - 151	2.99	20	
1,1,2-Trichloroethane	17.5700	0.50	0.25	20.0000	ND	87.8	78 - 130	4.67	20	
1,1-Dichloroethane	15.8700	0.50	0.09	20.0000	ND	79.4	68 - 135	10.4	20	
1,1-Dichloroethene	19.6300	0.50	0.13	20.0000	ND	98.2	77 - 134	12.3	20	
1,1-Dichloropropene	18.3700	0.50	0.13	20.0000	ND	91.8	91 - 138	11.4	20	
1,2,3-Trichloropropane	14.8400	0.50	0.39	20.0000	ND	74.2	77 - 136	5.31	20	M2
1,2,3-Trichlorobenzene	17.1400	0.50	0.18	20.0000	ND	85.7	72 - 129	4.00	20	
1,2,4-Trichlorobenzene	16.1700	0.50	0.16	20.0000	ND	80.8	64 - 135	6.64	20	
1,2,4-Trimethylbenzene	17.0300	0.50	0.14	20.0000	ND	85.2	10 - 179	8.38	20	
1,2-Dibromo-3-chloropropane	15.9000	0.50	0.41	20.0000	ND	79.5	62 - 153	7.04	20	
1,2-Dibromoethane	17.0500	0.50	0.24	20.0000	ND	85.2	80 - 132	7.07	20	
1,2-Dichlorobenzene	16.9300	0.50	0.20	20.0000	ND	84.6	81 - 131	6.07	20	
1,2-Dichloroethane	15.9800	0.50	0.20	20.0000	ND	79.9	68 - 146	7.99	20	
1,2-Dichloropropane	16.3800	0.50	0.15	20.0000	ND	81.9	74 - 136	6.55	20	
1,3,5-Trimethylbenzene	16.7000	0.50	0.13	20.0000	ND	83.5	66 - 149	6.88	20	
1,3-Dichlorobenzene	16.7200	0.50	0.16	20.0000	ND	83.6	79 - 128	7.48	20	
1,3-Dichloropropane	15.8800	0.50	0.21	20.0000	ND	79.4	80 - 129	5.21	20	M2
1,4-Dichlorobenzene	16.2500	0.50	0.17	20.0000	ND	81.2	84 - 121	8.26	20	M2
2,2-Dichloropropane	16.3100	0.50	0.38	20.0000	ND	81.6	63 - 179	11.9	20	
2-Chlorotoluene	15.7700	0.50	0.11	20.0000	ND	78.8	76 - 142	7.45	20	
4-Chlorotoluene	15.7500	0.50	0.12	20.0000	ND	78.8	72 - 152	10.4	20	
4-Isopropyltoluene	17.7100	0.50	0.11	20.0000	ND	88.6	84 - 141	5.38	20	
Benzene	16.8200	0.50	0.13	20.0000	ND	84.1	79 - 131	9.51	20	
Bromobenzene	16.5400	0.50	0.21	20.0000	ND	82.7	82 - 121	5.98	20	
Bromodichloromethane	16.3600	0.50	0.14	20.0000	ND	81.8	86 - 138	7.02	20	M2
Bromoform	17.6600	0.50	0.20	20.0000	ND	88.3	80 - 136	4.48	20	
Bromomethane	31.0900	0.50	0.40	20.0000	ND	155	35 - 194	1.66	20	
Carbon tetrachloride	18.9300	0.50	0.09	20.0000	ND	94.6	73 - 176	8.59	20	
Chlorobenzene	16.8500	0.50	0.13	20.0000	ND	84.2	81 - 124	5.71	20	
Chloroethane	22.0900	0.50	0.15	20.0000	ND	110	0 - 257	0.590	20	
Chloroform	15.8300	0.50	0.11	20.0000	ND	79.2	76 - 139	8.00	20	
Chloromethane	24.3400	0.50	0.12	20.0000	ND	122	27 - 144	0.778	20	
cis-1,2-Dichloroethene	16.1800	0.50	0.14	20.0000	ND	80.9	69 - 139	9.65	20	
cis-1,3-Dichloropropene	16.1000	0.50	0.13	20.0000	ND	80.5	67 - 149	12.5	20	
Dibromochloromethane	16.4000	0.50	0.16	20.0000	ND	82.0	91 - 131	7.23	20	M2



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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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0006 - MSVOA_LL_W (continued)

Matrix Spike Dup (B1F0006-MSD1) - Continued

Source: 2101198-07

Prepared: 6/1/2021 Analyzed: 6/1/2021

Dibromomethane	16.2400	0.50	0.19	20.0000	ND	81.2	70 - 134	7.30	20	
Dichlorodifluoromethane	41.0600	0.50	0.18	20.0000	ND	205	0 - 161	2.38	20	M2
Ethylbenzene	17.1100	0.50	0.13	20.0000	ND	85.6	89 - 134	7.32	20	M2
Hexachlorobutadiene	18.0200	0.50	0.15	20.0000	ND	90.1	73 - 137	2.09	20	
Isopropylbenzene	16.3500	0.50	0.10	20.0000	ND	81.8	72 - 152	9.66	20	
m,p-Xylene	35.4700	1.0	0.19	40.0000	ND	88.7	82 - 141	6.89	20	
Methylene chloride	17.9600	1.0	0.71	20.0000	ND	89.8	74 - 133	4.57	20	
n-Butylbenzene	16.9900	0.50	0.11	20.0000	ND	85.0	65 - 164	5.16	20	
n-Propylbenzene	16.3400	0.50	0.10	20.0000	ND	81.7	73 - 161	8.05	20	
Naphthalene	15.8700	0.50	0.41	20.0000	ND	79.4	59 - 105	6.40	20	
o-Xylene	17.0500	0.50	0.13	20.0000	ND	85.2	90 - 134	5.92	20	M2
sec-Butylbenzene	17.5000	0.50	0.09	20.0000	ND	87.5	80 - 157	7.11	20	
Styrene	18.9700	0.50	0.13	20.0000	ND	94.8	0 - 222	5.44	20	
tert-Butylbenzene	16.7300	0.50	0.09	20.0000	ND	83.6	88 - 141	8.69	20	M2
Tetrachloroethene	18.4500	0.50	0.10	20.0000	ND	92.2	75 - 136	8.66	20	
Toluene	17.7900	0.50	0.12	20.0000	ND	89.0	82 - 132	8.71	20	
trans-1,2-Dichloroethene	17.4200	0.50	0.09	20.0000	ND	87.1	65 - 135	9.46	20	
Trichloroethene	17.6000	0.50	0.10	20.0000	ND	88.0	75 - 128	8.80	20	
Trichlorofluoromethane	25.9800	0.50	0.23	20.0000	ND	130	89 - 143	1.68	20	
Vinyl chloride	23.2500	0.50	0.13	20.0000	ND	116	50 - 148	0.0430	20	
Surrogate: 1,2-Dichloroethane-d4	21.75			25.0000		87.0	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.20			25.0000		96.8	73 - 124			
Surrogate: Dibromofluoromethane	22.76			25.0000		91.0	78 - 129			
Surrogate: Toluene-d8	25.13			25.0000		101	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 B1F0024 - MSVOA_LL_W

Blank (B1F0024-BLK1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

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.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1F0024 - MSVOA_LL_W (continued)

Blank (B1F0024-BLK1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

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	22.27	25.0000	89.1	64 - 155
Surrogate: 4-Bromofluorobenzene	22.09	25.0000	88.4	73 - 124
Surrogate: Dibromofluoromethane	23.07	25.0000	92.3	78 - 129
Surrogate: Toluene-d8	24.26	25.0000	97.0	84 - 117

LCS (B1F0024-BS1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	17.6500	0.50	0.11	20.0000	88.2	79 - 116
1,1,1-Trichloroethane	17.3300	0.50	0.21	20.0000	86.6	73 - 130
1,1,2,2-Tetrachloroethane	16.2100	0.50	0.36	20.0000	81.0	71 - 122
1,1,2-Trichloroethane	17.6700	0.50	0.25	20.0000	88.4	70 - 124
1,1-Dichloroethane	16.7900	0.50	0.09	20.0000	84.0	69 - 128
1,1-Dichloroethene	19.9700	0.50	0.13	20.0000	99.8	65 - 137
1,1-Dichloropropene	18.8300	0.50	0.13	20.0000	94.2	74 - 129
1,2,3-Trichloropropane	15.3400	0.50	0.39	20.0000	76.7	74 - 123
1,2,3-Trichlorobenzene	17.3600	0.50	0.18	20.0000	86.8	59 - 130
1,2,4-Trichlorobenzene	16.2800	0.50	0.16	20.0000	81.4	65 - 125
1,2,4-Trimethylbenzene	16.9200	0.50	0.14	20.0000	84.6	88 - 124
1,2-Dibromo-3-chloropropane	17.1200	0.50	0.41	20.0000	85.6	61 - 127
1,2-Dibromoethane	17.8800	0.50	0.24	20.0000	89.4	72 - 125
1,2-Dichlorobenzene	17.2800	0.50	0.20	20.0000	86.4	84 - 113
1,2-Dichloroethane	17.0200	0.50	0.20	20.0000	85.1	68 - 130
1,2-Dichloropropane	17.1700	0.50	0.15	20.0000	85.8	77 - 121
1,3,5-Trimethylbenzene	16.9300	0.50	0.13	20.0000	84.6	83 - 124
1,3-Dichlorobenzene	17.4500	0.50	0.16	20.0000	87.2	83 - 112
1,3-Dichloropropane	16.3500	0.50	0.21	20.0000	81.8	77 - 119

L3



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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 Limits	RPD	RPD Limit	Notes

Batch B1F0024 - MSVOA_LL_W (continued)

LCS (B1F0024-BS1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,4-Dichlorobenzene	16.8600	0.50	0.17	20.0000		84.3	79 - 115		
2,2-Dichloropropane	12.9700	0.50	0.38	20.0000		64.8	67 - 149		L4
2-Chlorotoluene	15.9000	0.50	0.11	20.0000		79.5	81 - 119		L3
4-Chlorotoluene	16.4300	0.50	0.12	20.0000		82.2	86 - 117		L3
4-Isopropyltoluene	17.0900	0.50	0.11	20.0000		85.4	82 - 131		
Benzene	17.2200	0.50	0.13	20.0000		86.1	75 - 124		
Bromobenzene	17.2900	0.50	0.21	20.0000		86.4	82 - 108		
Bromodichloromethane	17.1500	0.50	0.14	20.0000		85.8	80 - 120		
Bromoform	17.8500	0.50	0.20	20.0000		89.2	70 - 123		
Bromomethane	27.8300	0.50	0.40	20.0000		139	44 - 151		
Carbon tetrachloride	18.3800	0.50	0.09	20.0000		91.9	62 - 140		
Chlorobenzene	16.9400	0.50	0.13	20.0000		84.7	80 - 112		
Chloroethane	19.0700	0.50	0.15	20.0000		95.4	42 - 167		
Chloroform	16.4600	0.50	0.11	20.0000		82.3	77 - 122		
Chloromethane	20.8500	0.50	0.12	20.0000		104	33 - 153		
cis-1,2-Dichloroethene	16.6800	0.50	0.14	20.0000		83.4	75 - 121		
cis-1,3-Dichloropropene	16.1800	0.50	0.13	20.0000		80.9	73 - 127		
Dibromochloromethane	17.3300	0.50	0.16	20.0000		86.6	77 - 122		
Dibromomethane	16.5100	0.50	0.19	20.0000		82.6	75 - 121		
Dichlorodifluoromethane	33.5000	0.50	0.18	20.0000		168	0 - 171		
Ethylbenzene	17.0500	0.50	0.13	20.0000		85.2	82 - 119		
Hexachlorobutadiene	16.8900	0.50	0.15	20.0000		84.4	71 - 131		
Isopropylbenzene	16.5700	0.50	0.10	20.0000		82.8	75 - 126		
m,p-Xylene	34.7900	1.0	0.19	40.0000		87.0	86 - 119		
Methylene chloride	18.5100	1.0	0.71	20.0000		92.6	76 - 125		
n-Butylbenzene	15.9000	0.50	0.11	20.0000		79.5	81 - 125		L3
n-Propylbenzene	16.4700	0.50	0.10	20.0000		82.4	78 - 130		
Naphthalene	16.9200	0.50	0.41	20.0000		84.6	47 - 128		
o-Xylene	16.8000	0.50	0.13	20.0000		84.0	85 - 119		L3
sec-Butylbenzene	17.2700	0.50	0.09	20.0000		86.4	78 - 130		
Styrene	18.7900	0.50	0.13	20.0000		94.0	62 - 148		
tert-Butylbenzene	17.2800	0.50	0.09	20.0000		86.4	77 - 125		
Tetrachloroethene	18.6700	0.50	0.10	20.0000		93.4	73 - 120		
Toluene	18.4100	0.50	0.12	20.0000		92.0	79 - 119		
trans-1,2-Dichloroethene	17.7600	0.50	0.09	20.0000		88.8	70 - 129		
Trichloroethene	17.6600	0.50	0.10	20.0000		88.3	73 - 117		
Trichlorofluoromethane	21.4300	0.50	0.23	20.0000		107	59 - 135		
Vinyl chloride	19.2400	0.50	0.13	20.0000		96.2	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	21.62			25.0000		86.5	64 - 155		
Surrogate: 4-Bromofluorobenzene	23.20			25.0000		92.8	73 - 124		
Surrogate: Dibromofluoromethane	22.64			25.0000		90.6	78 - 129		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

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

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

Batch B1F0024 - MSVOA_LL_W (continued)

LCS (B1F0024-BS1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

Surrogate: Toluene-d8 25.06 25.0000 100 84 - 117

LCS Dup (B1F0024-BSD1)

Prepared: 6/2/2021 Analyzed: 6/2/2021

1,1,1,2-Tetrachloroethane	16.6800	0.50	0.11	20.0000	83.4	79 - 116	5.65	20	
1,1,1-Trichloroethane	15.9500	0.50	0.21	20.0000	79.8	73 - 130	8.29	20	
1,1,2,2-Tetrachloroethane	15.7700	0.50	0.36	20.0000	78.8	71 - 122	2.75	20	
1,1,2-Trichloroethane	17.2000	0.50	0.25	20.0000	86.0	70 - 124	2.70	20	
1,1-Dichloroethane	15.2700	0.50	0.09	20.0000	76.4	69 - 128	9.48	20	
1,1-Dichloroethene	18.6900	0.50	0.13	20.0000	93.4	65 - 137	6.62	20	
1,1-Dichloropropene	17.7600	0.50	0.13	20.0000	88.8	74 - 129	5.85	20	
1,2,3-Trichloropropane	15.4100	0.50	0.39	20.0000	77.0	74 - 123	0.455	20	
1,2,3-Trichlorobenzene	17.1300	0.50	0.18	20.0000	85.6	59 - 130	1.33	20	
1,2,4-Trichlorobenzene	16.1600	0.50	0.16	20.0000	80.8	65 - 125	0.740	20	
1,2,4-Trimethylbenzene	16.5300	0.50	0.14	20.0000	82.6	88 - 124	2.33	20	L3
1,2-Dibromo-3-chloropropane	16.8900	0.50	0.41	20.0000	84.4	61 - 127	1.35	20	
1,2-Dibromoethane	17.1500	0.50	0.24	20.0000	85.8	72 - 125	4.17	20	
1,2-Dichlorobenzene	16.8600	0.50	0.20	20.0000	84.3	84 - 113	2.46	20	
1,2-Dichloroethane	16.2300	0.50	0.20	20.0000	81.2	68 - 130	4.75	20	
1,2-Dichloropropane	16.0000	0.50	0.15	20.0000	80.0	77 - 121	7.05	20	
1,3,5-Trimethylbenzene	16.2300	0.50	0.13	20.0000	81.2	83 - 124	4.22	20	L3
1,3-Dichlorobenzene	16.6800	0.50	0.16	20.0000	83.4	83 - 112	4.51	20	
1,3-Dichloropropane	15.6900	0.50	0.21	20.0000	78.4	77 - 119	4.12	20	
1,4-Dichlorobenzene	16.3100	0.50	0.17	20.0000	81.6	79 - 115	3.32	20	
2,2-Dichloropropane	12.5800	0.50	0.38	20.0000	62.9	67 - 149	3.05	20	L4
2-Chlorotoluene	15.3600	0.50	0.11	20.0000	76.8	81 - 119	3.45	20	L3
4-Chlorotoluene	15.4900	0.50	0.12	20.0000	77.4	86 - 117	5.89	20	L3
4-Isopropyltoluene	16.2000	0.50	0.11	20.0000	81.0	82 - 131	5.35	20	L3
Benzene	16.3500	0.50	0.13	20.0000	81.8	75 - 124	5.18	20	
Bromobenzene	16.4500	0.50	0.21	20.0000	82.2	82 - 108	4.98	20	
Bromodichloromethane	16.3700	0.50	0.14	20.0000	81.8	80 - 120	4.65	20	
Bromoform	17.6200	0.50	0.20	20.0000	88.1	70 - 123	1.30	20	
Bromomethane	25.7600	0.50	0.40	20.0000	129	44 - 151	7.73	20	
Carbon tetrachloride	17.6800	0.50	0.09	20.0000	88.4	62 - 140	3.88	20	
Chlorobenzene	16.1800	0.50	0.13	20.0000	80.9	80 - 112	4.59	20	
Chloroethane	17.0900	0.50	0.15	20.0000	85.4	42 - 167	11.0	20	
Chloroform	15.6500	0.50	0.11	20.0000	78.2	77 - 122	5.05	20	
Chloromethane	18.9300	0.50	0.12	20.0000	94.6	33 - 153	9.65	20	
cis-1,2-Dichloroethene	15.7600	0.50	0.14	20.0000	78.8	75 - 121	5.67	20	
cis-1,3-Dichloropropene	16.1300	0.50	0.13	20.0000	80.6	73 - 127	0.310	20	
Dibromochloromethane	16.5000	0.50	0.16	20.0000	82.5	77 - 122	4.91	20	
Dibromomethane	16.6200	0.50	0.19	20.0000	83.1	75 - 121	0.664	20	
Dichlorodifluoromethane	30.3400	0.50	0.18	20.0000	152	0 - 171	9.90	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

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 B1F0024 - MSVOA_LL_W (continued)

LCS Dup (B1F0024-BSD1) - Continued

Prepared: 6/2/2021 Analyzed: 6/2/2021

Ethylbenzene	16.0400	0.50	0.13	20.0000		80.2	82 - 119	6.10	20	L3
Hexachlorobutadiene	16.2800	0.50	0.15	20.0000		81.4	71 - 131	3.68	20	
Isopropylbenzene	15.6500	0.50	0.10	20.0000		78.2	75 - 126	5.71	20	
m,p-Xylene	33.3800	1.0	0.19	40.0000		83.4	86 - 119	4.14	20	L3
Methylene chloride	17.3200	1.0	0.71	20.0000		86.6	76 - 125	6.64	20	
n-Butylbenzene	15.0800	0.50	0.11	20.0000		75.4	81 - 125	5.29	20	L3
n-Propylbenzene	15.6400	0.50	0.10	20.0000		78.2	78 - 130	5.17	20	
Naphthalene	16.9500	0.50	0.41	20.0000		84.8	47 - 128	0.177	20	
o-Xylene	16.2600	0.50	0.13	20.0000		81.3	85 - 119	3.27	20	L3
sec-Butylbenzene	16.4100	0.50	0.09	20.0000		82.0	78 - 130	5.11	20	
Styrene	17.8800	0.50	0.13	20.0000		89.4	62 - 148	4.96	20	
tert-Butylbenzene	16.1400	0.50	0.09	20.0000		80.7	77 - 125	6.82	20	
Tetrachloroethene	16.6000	0.50	0.10	20.0000		83.0	73 - 120	11.7	20	
Toluene	17.1700	0.50	0.12	20.0000		85.8	79 - 119	6.97	20	
trans-1,2-Dichloroethene	16.5700	0.50	0.09	20.0000		82.8	70 - 129	6.93	20	
Trichloroethene	17.2300	0.50	0.10	20.0000		86.2	73 - 117	2.46	20	
Trichlorofluoromethane	20.0800	0.50	0.23	20.0000		100	59 - 135	6.50	20	
Vinyl chloride	17.6100	0.50	0.13	20.0000		88.0	58 - 132	8.85	20	
Surrogate: 1,2-Dichloroethane-d4	21.91			25.0000		87.6	64 - 155			
Surrogate: 4-Bromofluorobenzene	23.48			25.0000		93.9	73 - 124			
Surrogate: Dibromofluoromethane	22.70			25.0000		90.8	78 - 129			
Surrogate: Toluene-d8	25.00			25.0000		100	84 - 117			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main, 532.30
Report To : Steve Netto
Reported : 06/21/2021

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 B1E0478 - MSSEMI_W

Blank (B1E0478-BLK1)

Prepared: 5/27/2021 Analyzed: 5/28/2021

1,4-Dioxane	1.58000	2.0	0.84						J
Surrogate: 1,2-Dichlorobenzene-d	59.07			100.000	59.1	17 - 119			
Surrogate: 2-Fluorobiphenyl	70.10			100.000	70.1	10 - 133			
Surrogate: 4-Terphenyl-d14	80.83			100.000	80.8	5 - 139			
Surrogate: Nitrobenzene-d5	66.42			100.000	66.4	13 - 150			

LCS (B1E0478-BS1)

Prepared: 5/27/2021 Analyzed: 5/28/2021

1,4-Dioxane	109.800	2.0	0.84	100.000	110	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d	58.32			100.000	58.3	17 - 119			
Surrogate: 2-Fluorobiphenyl	76.16			100.000	76.2	10 - 133			
Surrogate: 4-Terphenyl-d14	76.85			100.000	76.8	5 - 139			
Surrogate: Nitrobenzene-d5	73.20			100.000	73.2	13 - 150			

LCS Dup (B1E0478-BSD1)

Prepared: 5/27/2021 Analyzed: 5/28/2021

1,4-Dioxane	119.590	2.0	0.84	100.000	120	75 - 155	8.54	20	
Surrogate: 1,2-Dichlorobenzene-d	45.29			100.000	45.3	17 - 119			
Surrogate: 2-Fluorobiphenyl	60.17			100.000	60.2	10 - 133			
Surrogate: 4-Terphenyl-d14	61.58			100.000	61.6	5 - 139			
Surrogate: Nitrobenzene-d5	58.16			100.000	58.2	13 - 150			



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 06/21/2021

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	RPD Limit	Notes

Batch B1E0464 - MSSEMI_W

Blank (B1E0464-BLK1)

Prepared: 5/27/2021 Analyzed: 6/18/2021

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d	0.8924			1.00000		89.2	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.9331			1.00000		93.3	8 - 111		
Surrogate: 4-Terphenyl-d14	0.7451			1.00000		74.5	12 - 113		
Surrogate: Nitrobenzene-d5	0.8587			1.00000		85.9	15 - 121		

LCS (B1E0464-BS1)

Prepared: 5/27/2021 Analyzed: 6/18/2021

1,4-Dioxane	18.1193	0.20	0.05	1.00000		1810	75 - 155		L13
Surrogate: 1,2-Dichlorobenzene-d	0.6898			1.00000		69.0	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.7660			1.00000		76.6	8 - 111		
Surrogate: 4-Terphenyl-d14	0.5797			1.00000		58.0	12 - 113		
Surrogate: Nitrobenzene-d5	0.7116			1.00000		71.2	15 - 121		

LCS Dup (B1E0464-BSD1)

Prepared: 5/27/2021 Analyzed: 6/18/2021

1,4-Dioxane	18.8182	0.20	0.05	1.00000		1880	75 - 155	3.78	20	L13
Surrogate: 1,2-Dichlorobenzene-d	0.8044			1.00000		80.4	13 - 99			
Surrogate: 2-Fluorobiphenyl	0.8963			1.00000		89.6	8 - 111			
Surrogate: 4-Terphenyl-d14	0.7080			1.00000		70.8	12 - 113			
Surrogate: Nitrobenzene-d5	0.8284			1.00000		82.8	15 - 121			



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Notes and Definitions

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.
L13	Laboratory control sample outside of acceptance limit.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
E3	Internal standard recoveries did not meet method acceptance due to matrix interference. Result value is estimated.
E	Result value is above quantitation range and therefore, estimated.
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.

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858.455.6500

Fax 858.455.6533

2101184

Date: 05.25.21
Page 1 of 2

Sampled By: <u>D. Searoo, A. Jong</u>				SAMPLE COLLECTION		MATRIX		PRESERVATION				CONTAINERS				ANALYSIS REQUESTED						Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING				REMARKS			
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	NaOH/AlCl3	NaOH/Zn	Ice	40-ml VOA	1 L Amber	250-ml poly	250-ml Amber	VOCs by EPA 8260B	1,4 Dioxane 8270 SIM	1,4-Dioxane 8270 MOD	CO2 by SM4500	Dissolved Sulfide by SM4500 S2-d	Total Sulfide by SM-4500 S2-d	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					
01	TB-052521	05.25.21	0800	X	X				X	2				X							X					X						Report J Flags	
02	MW-28	↓	0835	X						3				X							X												
03	MW-26C	↓	1130	X		X				4	1			X	X						X												
04	TB-05252021	↓	1300	X	X					3	2			X	X						X												
05	MW-08	↓	1355	X	X					3				X							X	X											
06	MW-411	↓	1610	X	X					3	1			X							X												
07	MW-4100	↓	1700	X	X					3	1			X	X						X												
		↓	1700	X							1					X																	

Total number of containers per analysis:

Relinquished By: / Company: Steve Netto / H&A Date / Time: 05.25.21 / 1656

Relinquished By: / Company: Max Rothacker Date / Time: 5/25/21

Received By: / Company: Max Rothacker Date / Time: 5/25/21 1656

Received By: / Company: [Signature] Date / Time: 17:35 5/25/21

☐ No. of containers correct

☐ Received in good condition

☐ Custody seals secure

☐ Conforms to COC document

Total No. of Containers: _____

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.

Temperature on receipt _____

Send Results to:

Steve Netto

9171 Towne Centre Drive
Suite 375

San Diego, CA 92122

Ph: 858.455.5400

snetto@hargis.com

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Andrew Donnelly

Phone 858.455.6500

Fax 858.455.6533

2101184

Date: 05/25/21
Page 2 of 2

Sampled By: <u>A. Janzon, R. Adams</u>				SAMPLE COLLECTION														ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING				Laboratory
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	NaOH/AICI3	NaOH/Zn	Ice	40-ml VOA	1 L Amber	250-ml poly	250-ml Amber	VOCs by EPA 8260B	1,4 Dioxane 8270 SIM	1,4-Dioxane 8270 MOD	CO2 by SM4500	Dissolved Sulfide by SM4500 S2-d	Total Sulfide by SM-4500 S2-d	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							
08	MW-35C	5/29/21	0917	X	X				X	3				X							X						X			Report J Flags						
	↓	↓	↓	X					X		1				X						X					X										
09	MW-39	5/25/21	1129	X	X				X	3				X							X					X										
	↓	↓	↓	X					X		1				X											X										
10	MW-42	↓	1423	X	X				X	3				X							X					X										
	↓	↓	↓	X					X		1				X											X										
11	MW-31	↓	1541	X	X				X	3				X							X					X										
	↓	↓	↓	X					X		1				X											X										
Total number of containers per analysis:																												Total No. of Containers:								
Relinquished By: / Company:				Date / Time		Received By: / Company				Date / Time																										
<u>Steve Netto</u> HFA				05-25-21 / 1656		<u>Max Rothacker</u>				5/25/21 1656																										
Relinquished By: / Company:				Date / Time		Received By: / Company				Date / Time																										
<u>Max Rothacker</u>				5/25/21		<u>[Signature]</u>				5/25/21 17:35																										

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.

Temperature on receipt

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

Send Results to:
Steve Netto
 9171 Towne Centre Driv
 Suite 375
 San Diego, CA 92122
 Ph: 858.455.5400
snetto@hargis.com

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
ANALYTICAL RESULTS



March 08, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2100463

Client Reference : Raytheon Main GETS Quarterly Sample, 532.15

Enclosed are the results for sample(s) received on March 01, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "for [Name]", is written over a small, faint, illegible stamp.

Edgar P. Caballero
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEFF	2100463-01	Groundwater	3/01/21 9:20	3/01/21 12:35
POX	2100463-02	Groundwater	3/01/21 9:35	3/01/21 12:35
INF	2100463-03	Groundwater	3/01/21 9:50	3/01/21 12:35
EW-02	2100463-04	Groundwater	3/01/21 10:20	3/01/21 12:35
MW-29	2100463-05	Groundwater	3/01/21 10:50	3/01/21 12:35



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: CEFF

Lab ID: 2100463-01

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	690	10	1	B1C0075	03/04/2021	03/05/21 12:15	



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: POX

Lab ID: 2100463-02

Anions Scan by Ion Chromatography EPA 300.0

Analyst: alyssa

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	98	5.0	10	B1C0030	03/01/2021	03/02/21 12:18	
Nitrate, as N	4.3	1.0	10	B1C0030	03/01/2021	03/02/21 12:18	
Nitrite, as N	ND	1.0	10	B1C0030	03/01/2021	03/02/21 12:18	
ortho-Phosphate, as P	ND	0.50	10	B1C0030	03/01/2021	03/02/21 12:18	
Sulfate	130	5.0	10	B1C0030	03/01/2021	03/02/21 12:18	

UV Absorption by EPA 415.3

Analyst: SH

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B1C0013	03/02/2021	03/02/21 15:30	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	710	10	1	B1C0075	03/04/2021	03/05/21 12:15	

Chemical Oxygen Demand by EPA 410.4

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B1C0071	03/04/2021	03/04/21 15:58	



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: INF

Lab ID: 2100463-03

Anions Scan by Ion Chromatography EPA 300.0

Analyst: alyssa

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	97	5.0	10	B1C0030	03/01/2021	03/02/21 12:29	
Nitrate, as N	4.2	1.0	10	B1C0030	03/01/2021	03/02/21 12:29	
Nitrite, as N	ND	1.0	10	B1C0030	03/01/2021	03/02/21 12:29	
ortho-Phosphate, as P	ND	0.50	10	B1C0030	03/01/2021	03/02/21 12:29	
Sulfate	120	5.0	10	B1C0030	03/01/2021	03/02/21 12:29	

UV Absorption by EPA 415.3

Analyst: SH

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B1C0013	03/02/2021	03/02/21 15:30	

Alkalinity, Speciated by SM 2320B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO₃)	220	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Total (as CaCO₃)	220	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	740	10	1	B1C0075	03/04/2021	03/05/21 12:15	

Total Organic Carbon by SM 5310B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1C0031	03/02/2021	03/02/21 16:30	

Chemical Oxygen Demand by EPA 410.4

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: INF

Lab ID: 2100463-03

Chemical Oxygen Demand by EPA 410.4

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B1C0071	03/04/2021	03/04/21 15:58	

Total Metals by ICP-AES EPA 6010B

Analyst: AMP

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B1C0036	03/03/2021	03/03/21 10:19	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: AMP

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	87	0.50	1	B1C0049	03/03/2021	03/04/21 15:43	
Iron	ND	0.50	1	B1C0049	03/03/2021	03/04/21 15:43	
Magnesium	26	0.10	1	B1C0049	03/03/2021	03/04/21 15:43	
Manganese	ND	0.50	1	B1C0049	03/03/2021	03/04/21 15:43	
Selenium	ND	0.010	1	B1C0049	03/03/2021	03/04/21 15:43	
Sodium	70	1.0	1	B1C0049	03/03/2021	03/04/21 15:43	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: EW-02

Lab ID: 2100463-04

Anions Scan by Ion Chromatography EPA 300.0

Analyst: alyssa

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	80	5.0	10	B1C0030	03/01/2021	03/02/21 12:41	
Nitrate, as N	3.5	1.0	10	B1C0030	03/01/2021	03/02/21 12:41	
Nitrite, as N	ND	1.0	10	B1C0030	03/01/2021	03/02/21 12:41	
ortho-Phosphate, as P	ND	0.50	10	B1C0030	03/01/2021	03/02/21 12:41	
Sulfate	130	5.0	10	B1C0030	03/01/2021	03/02/21 12:41	

UV Absorption by EPA 415.3

Analyst: SH

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B1C0013	03/02/2021	03/02/21 15:30	

Alkalinity, Speciated by SM 2320B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO₃)	210	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Total (as CaCO₃)	210	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	660	10	1	B1C0075	03/04/2021	03/05/21 12:15	

Total Organic Carbon by SM 5310B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1C0031	03/02/2021	03/02/21 16:48	

Chemical Oxygen Demand by EPA 410.4

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: EW-02

Lab ID: 2100463-04

Chemical Oxygen Demand by EPA 410.4

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B1C0071	03/04/2021	03/04/21 15:58	

Total Metals by ICP-AES EPA 6010B

Analyst: AMP

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B1C0036	03/03/2021	03/03/21 10:25	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: AMP

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	85	0.50	1	B1C0049	03/03/2021	03/04/21 15:45	
Iron	1.3	0.50	1	B1C0049	03/03/2021	03/04/21 15:45	
Magnesium	26	0.10	1	B1C0049	03/03/2021	03/04/21 15:45	
Manganese	ND	0.50	1	B1C0049	03/03/2021	03/04/21 15:45	
Selenium	ND	0.010	1	B1C0049	03/03/2021	03/04/21 15:45	
Sodium	67	1.0	1	B1C0049	03/03/2021	03/04/21 15:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: MW-29

Lab ID: 2100463-05

Anions Scan by Ion Chromatography EPA 300.0

Analyst: alyssa

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	150	10	20	B1C0030	03/01/2021	03/02/21 13:15	
Nitrate, as N	6.4	2.0	20	B1C0030	03/01/2021	03/02/21 13:15	
Nitrite, as N	ND	2.0	20	B1C0030	03/01/2021	03/02/21 13:15	
ortho-Phosphate, as P	ND	1.0	20	B1C0030	03/01/2021	03/02/21 13:15	
Sulfate	120	10	20	B1C0030	03/01/2021	03/02/21 13:15	

UV Absorption by EPA 415.3

Analyst: SH

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B1C0013	03/02/2021	03/02/21 15:30	

Alkalinity, Speciated by SM 2320B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO₃)	240	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Total (as CaCO₃)	240	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	830	10	1	B1C0075	03/04/2021	03/05/21 12:15	

Total Organic Carbon by SM 5310B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1C0031	03/02/2021	03/02/21 17:09	

Chemical Oxygen Demand by EPA 410.4

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Client Sample ID: MW-29

Lab ID: 2100463-05

Chemical Oxygen Demand by EPA 410.4

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B1C0071	03/04/2021	03/04/21 15:58	

Total Metals by ICP-AES EPA 6010B

Analyst: AMP

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B1C0036	03/03/2021	03/03/21 10:26	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: AMP

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	110	0.50	1	B1C0049	03/03/2021	03/04/21 15:47	
Iron	ND	0.50	1	B1C0049	03/03/2021	03/04/21 15:47	
Magnesium	32	0.10	1	B1C0049	03/03/2021	03/04/21 15:47	
Manganese	ND	0.50	1	B1C0049	03/03/2021	03/04/21 15:47	
Selenium	ND	0.010	1	B1C0049	03/03/2021	03/04/21 15:47	
Sodium	93	1.0	1	B1C0049	03/03/2021	03/04/21 15:47	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

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

Batch B1C0095 - No_Prep_WC1_W

Blank (B1C0095-BLK1)

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Bicarbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Total (as CaCO ₃)	ND	5.0	3.4

LCS (B1C0095-BS1)

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Total (as CaCO ₃)	101.770	5.0	3.4	99.9580	102	80 - 120

Matrix Spike (B1C0095-MS1)

Source: 2100461-04

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Total (as CaCO ₃)	314.190	5.0	3.4	99.9580	218.540	95.7	80 - 120

Matrix Spike Dup (B1C0095-MSD1)

Source: 2100461-04

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Total (as CaCO ₃)	315.880	5.0	3.4	99.9580	218.540	97.4	80 - 120	0.536	20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

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 B1C0075 - No_Prep_WC1_W

Blank (B1C0075-BLK1)

Prepared: 3/4/2021 Analyzed: 3/5/2021

Residue, Dissolved ND 10 10

LCS (B1C0075-BS1)

Prepared: 3/4/2021 Analyzed: 3/5/2021

Residue, Dissolved 1004.00 10 10 1000.00 100 80 - 120

Duplicate (B1C0075-DUP1)

Source: 2100478-01

Prepared: 3/4/2021 Analyzed: 3/5/2021

Residue, Dissolved 1330.00 10 10 1346.00 1.20 10



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Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Anions Scan by Ion Chromatography EPA 300.0 - Quality Control

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

Batch B1C0030 - No_Prep_IC1_W

Blank (B1C0030-BLK1)

Prepared: 3/1/2021 Analyzed: 3/1/2021

Chloride	ND	0.50	0.15	
Nitrate, as N	ND	0.10	0.05	
Nitrite, as N	ND	0.10	0.02	
ortho-Phosphate, as P	ND	0.05	0.05	
Sulfate	ND	0.50	0.25	

LCS (B1C0030-BS1)

Prepared: 3/1/2021 Analyzed: 3/1/2021

Chloride	1.04240	0.50	0.15	1.00000	104	90 - 110
Nitrate, as N	0.997700	0.10	0.05	1.00000	99.8	90 - 110
Nitrite, as N	0.952600	0.10	0.02	1.00000	95.3	90 - 110
ortho-Phosphate, as P	0.987700	0.05	0.05	1.00000	98.8	90 - 110
Sulfate	2.12300	0.50	0.25	2.00000	106	90 - 110

Duplicate (B1C0030-DUP1)

Source: 2100463-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

Chloride	148.036	10	2.9	147.500	0.363	20
Nitrate, as N	6.40200	2.0	0.94	6.36200	0.627	20
Nitrite, as N	ND	2.0	0.30	ND	NR	20
ortho-Phosphate, as P	ND	1.0	0.96	ND	NR	20
Sulfate	116.752	10	5.0	117.132	0.325	20

Matrix Spike (B1C0030-MS1)

Source: 2100463-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

Chloride	201.298	10	2.9	50.0000	147.500	108	80 - 120
Nitrate, as N	53.0700	2.0	0.94	50.0000	6.36200	93.4	80 - 120
Nitrite, as N	52.0200	2.0	0.30	50.0000	ND	104	80 - 120
ortho-Phosphate, as P	46.2940	1.0	0.96	50.0000	ND	92.6	80 - 120
Sulfate	232.212	10	5.0	100.000	117.132	115	80 - 120

Matrix Spike Dup (B1C0030-MSD1)

Source: 2100463-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

Chloride	204.140	10	2.9	50.0000	147.500	113	80 - 120	1.40	20
Nitrate, as N	54.6200	2.0	0.94	50.0000	6.36200	96.5	80 - 120	2.88	20
Nitrite, as N	53.2580	2.0	0.30	50.0000	ND	107	80 - 120	2.35	20
ortho-Phosphate, as P	49.1540	1.0	0.96	50.0000	ND	98.3	80 - 120	5.99	20
Sulfate	239.794	10	5.0	100.000	117.132	123	80 - 120	3.21	20 M2



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Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

UV Absorption by EPA 415.3 - Quality Control

Analyte	Result (1/cm)	PQL (1/cm)	MDL (1/cm)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B1C0013 - No_Prep_II_W

Blank (B1C0013-BLK1)

Prepared: 3/1/2021 Analyzed: 3/2/2021

UV Absorption ND 0.01 0.01

Duplicate (B1C0013-DUP1)

Source: 2100461-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

UV Absorption ND 0.01 0.01 ND NR 20



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Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Total Organic Carbon by SM 5310B - Quality Control

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

Batch B1C0031 - No_Prep_II_W

Blank (B1C0031-BLK1)

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total ND 3.0 1.3

LCS (B1C0031-BS1)

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total 23.8000 3.0 1.3 25.0000 95.2 80 - 120

Duplicate (B1C0031-DUP1)

Source: 2100461-04

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total ND 3.0 1.3 ND NR 20

Matrix Spike (B1C0031-MS1)

Source: 2100461-04

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total 19.9300 3.0 1.3 25.0000 ND 79.7 80 - 120 M2

Matrix Spike Dup (B1C0031-MSD1)

Source: 2100461-04

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total 18.7700 3.0 1.3 25.0000 ND 75.1 80 - 120 5.99 20 M2



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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Chemical Oxygen Demand by EPA 410.4 - 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 B1C0071 - Prep_WC1_W

Blank (B1C0071-BLK1)

Prepared: 3/4/2021 Analyzed: 3/4/2021

Chemical Oxygen Demand ND 5.0 4.2

LCS (B1C0071-BS1)

Prepared: 3/4/2021 Analyzed: 3/4/2021

Chemical Oxygen Demand 477.193 5.0 4.2 502.680 94.9 80 - 120

Matrix Spike (B1C0071-MS1)

Source: 2100463-05

Prepared: 3/4/2021 Analyzed: 3/4/2021

Chemical Oxygen Demand 512.366 5.0 4.2 501.500 ND 102 80 - 120

Matrix Spike Dup (B1C0071-MSD1)

Source: 2100463-05

Prepared: 3/4/2021 Analyzed: 3/4/2021

Chemical Oxygen Demand 518.899 5.0 4.2 501.500 ND 103 80 - 120 1.27 20



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Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

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 B1C0036 - EPA 3010A_W

Blank (B1C0036-BLK1)

Prepared: 3/3/2021 Analyzed: 3/3/2021

Selenium ND 0.010 0.0093

LCS (B1C0036-BS1)

Prepared: 3/3/2021 Analyzed: 3/3/2021

Selenium 0.513004 0.010 0.0093 0.500000 103 80 - 120

Duplicate (B1C0036-DUP1)

Source: 2100463-03

Prepared: 3/3/2021 Analyzed: 3/3/2021

Selenium 9.7574E-3 0.010 0.0093 ND NR 20

Matrix Spike (B1C0036-MS1)

Source: 2100463-03

Prepared: 3/3/2021 Analyzed: 3/3/2021

Selenium 0.531022 0.010 0.0093 0.500000 ND 106 57 - 146

Matrix Spike Dup (B1C0036-MSD1)

Source: 2100463-03

Prepared: 3/3/2021 Analyzed: 3/3/2021

Selenium 0.536633 0.010 0.0093 0.500000 ND 107 57 - 146 1.05 20



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Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1C0049 - EPA 3010A_W

Blank (B1C0049-BLK1)

Prepared: 3/3/2021 Analyzed: 3/4/2021

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 (B1C0049-BS1)

Prepared: 3/3/2021 Analyzed: 3/4/2021

Calcium	4.95552	0.50	0.12	5.00000	99.1	80 - 120
Iron	4.91047	0.50	0.011	5.00000	98.2	80 - 120
Magnesium	4.97276	0.10	0.021	5.00000	99.5	80 - 120
Manganese	0.483234	0.50	0.0046	0.500000	96.6	80 - 120
Selenium	0.484808	0.010	0.0093	0.500000	97.0	80 - 120
Sodium	4.96585	1.0	0.12	5.00000	99.3	80 - 120

Duplicate (B1C0049-DUP1)

Source: 2100446-21

Prepared: 3/3/2021 Analyzed: 3/4/2021

Calcium	ND	0.50	0.12	ND		NR	20
Iron	0.117904	0.50	0.011	0.019153		144	20 R3
Magnesium	ND	0.10	0.021	0.021387		NR	20
Manganese	ND	0.50	0.0046	ND		NR	20
Selenium	ND	0.010	0.0093	0.010517		NR	20
Sodium	ND	1.0	0.12	ND		NR	20

Matrix Spike (B1C0049-MS1)

Source: 2100446-21

Prepared: 3/3/2021 Analyzed: 3/4/2021

Calcium	5.67255	0.50	0.12	5.00000	ND	113	0 - 218	
Iron	5.61881	0.50	0.011	5.00000	0.019153	112	46 - 158	
Magnesium	5.72445	0.10	0.021	5.00000	0.021387	114	22 - 181	
Manganese	0.559024	0.50	0.0046	0.500000	ND	112	51 - 152	
Selenium	0.571828	0.010	0.0093	0.500000	0.010517	112	57 - 146	
Sodium	10.8309	1.0	0.12	5.00000	ND	217	0 - 194	M2

Matrix Spike Dup (B1C0049-MSD1)

Source: 2100446-21

Prepared: 3/3/2021 Analyzed: 3/4/2021

Calcium	5.73239	0.50	0.12	5.00000	ND	115	0 - 218	1.05	20
Iron	5.67541	0.50	0.011	5.00000	0.019153	113	46 - 158	1.00	20
Magnesium	5.75740	0.10	0.021	5.00000	0.021387	115	22 - 181	0.574	20
Manganese	0.559534	0.50	0.0046	0.500000	ND	112	51 - 152	0.0913	20
Selenium	0.583032	0.010	0.0093	0.500000	0.010517	115	57 - 146	1.94	20
Sodium	10.9486	1.0	0.12	5.00000	ND	219	0 - 194	1.08	20 M2



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample, :

Report To : Steve Netto

Reported : 03/08/2021

Notes and Definitions

R3	RPD value outside acceptance criteria. Calculation is based on raw values. The analytical batch was validated by the Laboratory Control Sample (LCS).
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
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.

PROJECT: Raytheon Main GETS Quarterly Sample

TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Ross Horton

Phone 858.455.6500

Fax 858.455.6533

Date: 3/1/2021
Page 1 of 1

2100463

Sampled By:		SAMPLE COLLECTION		MATRIX		PRESERVATION		CONTAINERS						ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOAs				SPECIAL HANDLING				Laboratory					
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	125 mL amber	250 mL Poly	500 mL Poly	250 mL Glass	Alkalinity by SM2320B	Anions by EPA 300	COD by EPA 410.4	Dissolved Metals by EPA 6010B	Total Dissolved Solids by SM2540C	Total Organic Carbon by SM5310B	Total Se by EPA 6010B	UV Absorption EPA 415.3 @254 nm	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 Hour TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested	REMARKS				
2100463-1	CEFF	3/1/2021	9:20	X					X		1									X																	
2	POX	3/1/2021	9:35	X				X	X		2	1			1	X	X		X			X														Lab to filter dissolved	
3	INF	3/1/2021	9:50	X		X		X	X	3	2	1	1	2	1	X	X	X	X	X	X	X	X														metals, and anions
4	EW-02	3/1/2021	10:20	X		X		X	X	3	2	1	1	2	1	X	X	X	X	X	X	X	X														
5	MW-29	3/1/2021	10:50	X		X		X	X	3	2	1	1	2	1	X	X	X	X	X	X	X	X														

Total number of containers per analysis:				9	9	4	3	6	4	Total No. of Containers: 35			
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						
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time								

Send Results to:
Steve Netto & Ross Horton
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.6500
snetto@hargis.com
rhorton@hargis.com

Instructions: 3.8 Ice 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 ✗
Note applicable preservatives, special instructions, and deviations from typical environmental samples.
Consult project QA documents for specific instructions.



March 17, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2100461

Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on March 01, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'for [Name]', is written over a small, faint circular stamp.

Edgar P. Caballero
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-030121	2100461-01	Water	3/01/21 8:00	3/01/21 12:04
CEFF	2100461-02	Groundwater	3/01/21 9:20	3/01/21 12:04
CBT	2100461-03	Groundwater	3/01/21 9:30	3/01/21 12:04
POX	2100461-04	Groundwater	3/01/21 9:35	3/01/21 12:04
PF	2100461-05	Groundwater	3/01/21 9:45	3/01/21 12:04
INF	2100461-06	Groundwater	3/01/21 9:50	3/01/21 12:04
EW-02	2100461-07	Groundwater	3/01/21 10:20	3/01/21 12:04
MW-29	2100461-08	Groundwater	3/01/21 10:50	3/01/21 12:04

CASE NARRATIVE

Samples for Bromate by IC-MS/MS was subcontracted to Element Materials Technology with CA-ELAP Cert. 2652.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: TB-030121

Lab ID: 2100461-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,1,1-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,1,2-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,1-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,1-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,1-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2,3-Trichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2-Dibromoethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,3-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,3-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
1,4-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
2,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
2-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
4-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
4-Isopropyltoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Benzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Bromobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Bromodichloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Bromoform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Bromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Carbon tetrachloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Chlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Chloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Chloroform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Chloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Dibromochloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: TB-030121

Lab ID: 2100461-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Dichlorodifluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Ethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Hexachlorobutadiene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Isopropylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
m,p-Xylene	ND	1.0	1	B1C0012	03/01/2021	03/01/21 19:11	
Methylene chloride	ND	1.0	1	B1C0012	03/01/2021	03/01/21 19:11	
n-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
n-Propylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Naphthalene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
o-Xylene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
sec-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Styrene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
tert-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Tetrachloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Toluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Trichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Trichlorofluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Vinyl chloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 19:11	
Surrogate: 1,2-Dichloroethane-d4	85.1 %	64 - 155		B1C0012	03/01/2021	03/01/21 19:11	
Surrogate: 4-Bromofluorobenzene	97.9 %	73 - 124		B1C0012	03/01/2021	03/01/21 19:11	
Surrogate: Dibromofluoromethane	93.7 %	78 - 129		B1C0012	03/01/2021	03/01/21 19:11	
Surrogate: Toluene-d8	90.3 %	84 - 117		B1C0012	03/01/2021	03/01/21 19:11	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: CEFF

Lab ID: 2100461-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,1,1-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,1,2-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,1-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,1-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,1-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2,3-Trichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2-Dibromoethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,3-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,3-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
1,4-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
2,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
2-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
4-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
4-Isopropyltoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Benzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Bromobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Bromodichloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Bromoform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Bromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Carbon tetrachloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Chlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Chloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Chloroform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Chloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Dibromochloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: CEFF

Lab ID: 2100461-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Dichlorodifluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Ethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Hexachlorobutadiene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Isopropylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
m,p-Xylene	ND	1.0	1	B1C0012	03/01/2021	03/01/21 20:01	
Methylene chloride	ND	1.0	1	B1C0012	03/01/2021	03/01/21 20:01	
n-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
n-Propylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Naphthalene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
o-Xylene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
sec-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Styrene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
tert-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Tetrachloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Toluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Trichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Trichlorofluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Vinyl chloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:01	
Surrogate: 1,2-Dichloroethane-d4	85.8 %	64 - 155		B1C0012	03/01/2021	03/01/21 20:01	
Surrogate: 4-Bromofluorobenzene	97.2 %	73 - 124		B1C0012	03/01/2021	03/01/21 20:01	
Surrogate: Dibromofluoromethane	96.2 %	78 - 129		B1C0012	03/01/2021	03/01/21 20:01	
Surrogate: Toluene-d8	88.9 %	84 - 117		B1C0012	03/01/2021	03/01/21 20:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: CEFF

Lab ID: 2100461-02

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1C0061	03/03/2021	03/04/21 16:18	
Surrogate: 1,2-Dichlorobenzene-d4	70.9 %	13 - 99		B1C0061	03/03/2021	03/04/21 16:18	
Surrogate: 2-Fluorobiphenyl	94.4 %	8 - 111		B1C0061	03/03/2021	03/04/21 16:18	
Surrogate: 4-Terphenyl-d14	89.0 %	12 - 113		B1C0061	03/03/2021	03/04/21 16:18	
Surrogate: Nitrobenzene-d5	78.2 %	15 - 121		B1C0061	03/03/2021	03/04/21 16:18	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: CBT

Lab ID: 2100461-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,1,1-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,1,2-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,1-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,1-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,1-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2,3-Trichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2-Dibromoethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,3-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,3-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
1,4-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
2,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
2-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
4-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
4-Isopropyltoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Benzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Bromobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Bromodichloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Bromoform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Bromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Carbon tetrachloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Chlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Chloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Chloroform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Chloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Dibromochloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: CBT

Lab ID: 2100461-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Dichlorodifluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Ethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Hexachlorobutadiene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Isopropylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
m,p-Xylene	ND	1.0	1	B1C0012	03/01/2021	03/01/21 20:26	
Methylene chloride	ND	1.0	1	B1C0012	03/01/2021	03/01/21 20:26	
n-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
n-Propylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Naphthalene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
o-Xylene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
sec-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Styrene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
tert-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Tetrachloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Toluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Trichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Trichlorofluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Vinyl chloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:26	
Surrogate: 1,2-Dichloroethane-d4	86.5 %	64 - 155		B1C0012	03/01/2021	03/01/21 20:26	
Surrogate: 4-Bromofluorobenzene	96.7 %	73 - 124		B1C0012	03/01/2021	03/01/21 20:26	
Surrogate: Dibromofluoromethane	94.3 %	78 - 129		B1C0012	03/01/2021	03/01/21 20:26	
Surrogate: Toluene-d8	93.2 %	84 - 117		B1C0012	03/01/2021	03/01/21 20:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: CBT

Lab ID: 2100461-03

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1C0061	03/03/2021	03/04/21 16:44	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>66.3 %</i>	<i>13 - 99</i>		B1C0061	03/03/2021	<i>03/04/21 16:44</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>85.5 %</i>	<i>8 - 111</i>		B1C0061	03/03/2021	<i>03/04/21 16:44</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>85.5 %</i>	<i>12 - 113</i>		B1C0061	03/03/2021	<i>03/04/21 16:44</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>69.1 %</i>	<i>15 - 121</i>		B1C0061	03/03/2021	<i>03/04/21 16:44</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: POX

Lab ID: 2100461-04

Alkalinity, Speciated by SM 2320B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	220	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Total (as CaCO ₃)	220	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	

Total Organic Carbon by SM 5310B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1C0031	03/02/2021	03/02/21 15:48	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,1,1-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,1,2-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,1-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,1-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,1-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2,3-Trichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2-Dibromoethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,3-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,3-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
1,4-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
2,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
2-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: POX

Lab ID: 2100461-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
4-Isopropyltoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Benzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Bromobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Bromodichloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Bromoform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Bromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Carbon tetrachloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Chlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Chloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Chloroform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Chloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Dibromochloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Dibromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Dichlorodifluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Ethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Hexachlorobutadiene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Isopropylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
m,p-Xylene	ND	1.0	1	B1C0012	03/01/2021	03/01/21 20:52	
Methylene chloride	ND	1.0	1	B1C0012	03/01/2021	03/01/21 20:52	
n-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
n-Propylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Naphthalene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
o-Xylene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
sec-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Styrene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
tert-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Tetrachloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Toluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Trichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Trichlorofluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Vinyl chloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 20:52	
Surrogate: 1,2-Dichloroethane-d4	84.6 %	64 - 155		B1C0012	03/01/2021	03/01/21 20:52	
Surrogate: 4-Bromofluorobenzene	96.5 %	73 - 124		B1C0012	03/01/2021	03/01/21 20:52	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: POX

Lab ID: 2100461-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Dibromofluoromethane</i>	92.0 %	78 - 129		B1C0012	03/01/2021	03/01/21 20:52	
<i>Surrogate: Toluene-d8</i>	90.2 %	84 - 117		B1C0012	03/01/2021	03/01/21 20:52	

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1C0061	03/03/2021	03/04/21 17:10	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	67.8 %	13 - 99		B1C0061	03/03/2021	03/04/21 17:10	
<i>Surrogate: 2-Fluorobiphenyl</i>	86.0 %	8 - 111		B1C0061	03/03/2021	03/04/21 17:10	
<i>Surrogate: 4-Terphenyl-d14</i>	91.6 %	12 - 113		B1C0061	03/03/2021	03/04/21 17:10	
<i>Surrogate: Nitrobenzene-d5</i>	70.8 %	15 - 121		B1C0061	03/03/2021	03/04/21 17:10	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: PF

Lab ID: 2100461-05

UV Absorption by EPA 415.3

Analyst: SH

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B1C0013	03/02/2021	03/02/21 15:30	

Alkalinity, Speciated by SM 2320B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	220	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	
Alkalinity, Total (as CaCO ₃)	220	5.0	1	B1C0095	03/05/2021	03/05/21 13:50	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	2.0	1	B1C0081	03/05/2021	03/05/21 15:15	

Total Organic Carbon by SM 5310B

Analyst: SH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1C0031	03/02/2021	03/02/21 16:08	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: INF

Lab ID: 2100461-06

Bromide by Ion Chromatography EPA 300

Analyst: alyssa

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	ND	0.50	10	B1C0030	03/01/2021	03/02/21 13:26	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,1,1-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,1,2-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,1-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,1-Dichloroethene	47	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,1-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2,3-Trichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2-Dibromoethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,3-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,3-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
1,4-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
2,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
2-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
4-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
4-Isopropyltoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Benzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Bromobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Bromodichloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Bromoform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Bromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Carbon tetrachloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Chlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: INF

Lab ID: 2100461-06

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Chloroform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Chloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Dibromochloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Dibromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Dichlorodifluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Ethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Hexachlorobutadiene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Isopropylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
m,p-Xylene	ND	1.0	1	B1C0012	03/01/2021	03/01/21 22:57	
Methylene chloride	ND	1.0	1	B1C0012	03/01/2021	03/01/21 22:57	
n-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
n-Propylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Naphthalene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
o-Xylene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
sec-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Styrene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
tert-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Tetrachloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Toluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Trichloroethene	0.50	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Trichlorofluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
Vinyl chloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:57	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>86.5 %</i>	<i>64 - 155</i>		B1C0012	03/01/2021	<i>03/01/21 22:57</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.8 %</i>	<i>73 - 124</i>		B1C0012	03/01/2021	<i>03/01/21 22:57</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.8 %</i>	<i>78 - 129</i>		B1C0012	03/01/2021	<i>03/01/21 22:57</i>	
<i>Surrogate: Toluene-d8</i>	<i>88.2 %</i>	<i>84 - 117</i>		B1C0012	03/01/2021	<i>03/01/21 22:57</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: INF

Lab ID: 2100461-06

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

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	29	2.0	1	B1C0027	03/02/2021	03/02/21 16:28	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>48.7 %</i>	<i>17 - 119</i>		B1C0027	03/02/2021	<i>03/02/21 16:28</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>57.5 %</i>	<i>10 - 133</i>		B1C0027	03/02/2021	<i>03/02/21 16:28</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>70.7 %</i>	<i>5 - 139</i>		B1C0027	03/02/2021	<i>03/02/21 16:28</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>61.6 %</i>	<i>13 - 150</i>		B1C0027	03/02/2021	<i>03/02/21 16:28</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: EW-02

Lab ID: 2100461-07

Bromide by Ion Chromatography EPA 300

Analyst: alyssa

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	ND	0.50	10	B1C0030	03/01/2021	03/02/21 13:38	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,1,1-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,1,2-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,1-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,1-Dichloroethene	13	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,1-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2,3-Trichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2-Dibromoethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,3-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,3-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
1,4-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
2,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
2-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
4-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
4-Isopropyltoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Benzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Bromobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Bromodichloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Bromoform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Bromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Carbon tetrachloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Chlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: EW-02

Lab ID: 2100461-07

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Chloroform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Chloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Dibromochloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Dibromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Dichlorodifluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Ethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Hexachlorobutadiene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Isopropylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
m,p-Xylene	ND	1.0	1	B1C0012	03/01/2021	03/01/21 22:07	
Methylene chloride	ND	1.0	1	B1C0012	03/01/2021	03/01/21 22:07	
n-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
n-Propylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Naphthalene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
o-Xylene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
sec-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Styrene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
tert-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Tetrachloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Toluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Trichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Trichlorofluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Vinyl chloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 22:07	
Surrogate: 1,2-Dichloroethane-d4	86.7 %	64 - 155		B1C0012	03/01/2021	03/01/21 22:07	
Surrogate: 4-Bromofluorobenzene	97.2 %	73 - 124		B1C0012	03/01/2021	03/01/21 22:07	
Surrogate: Dibromofluoromethane	94.2 %	78 - 129		B1C0012	03/01/2021	03/01/21 22:07	
Surrogate: Toluene-d8	93.2 %	84 - 117		B1C0012	03/01/2021	03/01/21 22:07	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: EW-02

Lab ID: 2100461-07

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

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	6.2	2.0	1	B1C0027	03/02/2021	03/02/21 16:54	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53.3 %</i>	<i>17 - 119</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 16:54</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>58.5 %</i>	<i>10 - 133</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 16:54</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>66.5 %</i>	<i>5 - 139</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 16:54</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>64.5 %</i>	<i>13 - 150</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 16:54</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: MW-29

Lab ID: 2100461-08

Bromide by Ion Chromatography EPA 300

Analyst: alyssa

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	ND	1.0	20	B1C0030	03/01/2021	03/02/21 13:49	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,1,1-Trichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,1,2-Trichloroethane	0.61	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,1-Dichloroethane	1.2	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,1-Dichloroethene	170	25	50	B1C0012	03/01/2021	03/01/21 21:17	
1,1-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2,3-Trichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2-Dibromoethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2-Dichloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,3-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,3-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
1,4-Dichlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
2,2-Dichloropropane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
2-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
4-Chlorotoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
4-Isopropyltoluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Benzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Bromobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Bromodichloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Bromoform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Bromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Carbon tetrachloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Chlorobenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5
Report To : Steve Netto
Reported : 03/17/2021

Client Sample ID: MW-29

Lab ID: 2100461-08

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Chloroform	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Chloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Dibromochloromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Dibromomethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Dichlorodifluoromethane	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Ethylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Hexachlorobutadiene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Isopropylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
m,p-Xylene	ND	1.0	1	B1C0012	03/01/2021	03/01/21 23:47	
Methylene chloride	ND	1.0	1	B1C0012	03/01/2021	03/01/21 23:47	
n-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
n-Propylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Naphthalene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
o-Xylene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
sec-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Styrene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
tert-Butylbenzene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Tetrachloroethene	0.69	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Toluene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Trichloroethene	1.8	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Trichlorofluoromethane	0.90	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
Vinyl chloride	ND	0.50	1	B1C0012	03/01/2021	03/01/21 23:47	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>83.9 %</i>	<i>64 - 155</i>		B1C0012	03/01/2021	<i>03/01/21 23:47</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>84.6 %</i>	<i>64 - 155</i>		B1C0012	03/01/2021	<i>03/01/21 21:17</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.2 %</i>	<i>73 - 124</i>		B1C0012	03/01/2021	<i>03/01/21 23:47</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.6 %</i>	<i>73 - 124</i>		B1C0012	03/01/2021	<i>03/01/21 21:17</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>93.0 %</i>	<i>78 - 129</i>		B1C0012	03/01/2021	<i>03/01/21 23:47</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.7 %</i>	<i>78 - 129</i>		B1C0012	03/01/2021	<i>03/01/21 21:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>90.6 %</i>	<i>84 - 117</i>		B1C0012	03/01/2021	<i>03/01/21 21:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>91.8 %</i>	<i>84 - 117</i>		B1C0012	03/01/2021	<i>03/01/21 23:47</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Client Sample ID: MW-29

Lab ID: 2100461-08

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

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	97	2.0	1	B1C0027	03/02/2021	03/02/21 17:21	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53.4 %</i>	<i>17 - 119</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 17:21</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>59.4 %</i>	<i>10 - 133</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 17:21</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>76.5 %</i>	<i>5 - 139</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 17:21</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>62.6 %</i>	<i>13 - 150</i>		<i>B1C0027</i>	<i>03/02/2021</i>	<i>03/02/21 17:21</i>	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

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

Batch B1C0095 - No_Prep_WC1_W

Blank (B1C0095-BLK1)

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Bicarbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Total (as CaCO ₃)	ND	5.0	3.4

LCS (B1C0095-BS1)

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Total (as CaCO ₃)	101.770	5.0	3.4	99.9580	102	80 - 120

Matrix Spike (B1C0095-MS1)

Source: 2100461-04

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Total (as CaCO ₃)	314.190	5.0	3.4	99.9580	218.540	95.7	80 - 120

Matrix Spike Dup (B1C0095-MSD1)

Source: 2100461-04

Prepared: 3/5/2021 Analyzed: 3/5/2021

Alkalinity, Total (as CaCO ₃)	315.880	5.0	3.4	99.9580	218.540	97.4	80 - 120	0.536	20



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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 B1C0081 - No_Prep_WC1_W

Blank (B1C0081-BLK1)

Prepared: 3/5/2021 Analyzed: 3/5/2021

Residue, Suspended

ND

10

10

LCS (B1C0081-BS1)

Prepared: 3/5/2021 Analyzed: 3/5/2021

Residue, Suspended

85.0000

10

10

100.000

85.0

80 - 120

Duplicate (B1C0081-DUP1)

Source: 2100491-02

Prepared: 3/5/2021 Analyzed: 3/5/2021

Residue, Suspended

53.0000

5.0

5.0

54.0000

1.87

10



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Bromide by Ion Chromatography EPA 300 - Quality Control

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

Batch B1C0030 - No_Prep_IC1_W

Blank (B1C0030-BLK1)

Prepared: 3/1/2021 Analyzed: 3/1/2021

Bromide ND 0.05 0.02

LCS (B1C0030-BS1)

Prepared: 3/1/2021 Analyzed: 3/1/2021

Bromide 0.930400 0.05 0.02 1.00000 93.0 90 - 110

Duplicate (B1C0030-DUP1)

Source: 2100463-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

Bromide ND 1.0 0.35 ND NR 20

Matrix Spike (B1C0030-MS1)

Source: 2100463-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

Bromide 49.7340 1.0 0.35 50.0000 ND 99.5 80 - 120

Matrix Spike Dup (B1C0030-MSD1)

Source: 2100463-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

Bromide 50.5900 1.0 0.35 50.0000 ND 101 80 - 120 1.71 20



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

UV Absorption by EPA 415.3 - Quality Control

Analyte	Result (1/cm)	PQL (1/cm)	MDL (1/cm)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B1C0013 - No_Prep_II_W

Blank (B1C0013-BLK1)

Prepared: 3/1/2021 Analyzed: 3/2/2021

UV Absorption ND 0.01 0.01

Duplicate (B1C0013-DUP1)

Source: 2100461-05

Prepared: 3/1/2021 Analyzed: 3/2/2021

UV Absorption ND 0.01 0.01 ND NR 20



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Total Organic Carbon by SM 5310B - Quality Control

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

Batch B1C0031 - No_Prep_II_W

Blank (B1C0031-BLK1)

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total ND 3.0 1.3

LCS (B1C0031-BS1)

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total 23.8000 3.0 1.3 25.0000 95.2 80 - 120

Duplicate (B1C0031-DUP1)

Source: 2100461-04

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total ND 3.0 1.3 ND NR 20

Matrix Spike (B1C0031-MS1)

Source: 2100461-04

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total 19.9300 3.0 1.3 25.0000 ND 79.7 80 - 120 M2

Matrix Spike Dup (B1C0031-MSD1)

Source: 2100461-04

Prepared: 3/2/2021 Analyzed: 3/2/2021

Organic Carbon, Total 18.7700 3.0 1.3 25.0000 ND 75.1 80 - 120 5.99 20 M2



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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 B1C0012 - MSVOA_LL_W

Blank (B1C0012-BLK1)

Prepared: 3/1/2021 Analyzed: 3/1/2021

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.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B1C0012 - MSVOA_LL_W (continued)

Blank (B1C0012-BLK1) - Continued

Prepared: 3/1/2021 Analyzed: 3/1/2021

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	21.37		25.0000	85.5	64 - 155
Surrogate: 4-Bromofluorobenzene	23.73		25.0000	94.9	73 - 124
Surrogate: Dibromofluoromethane	23.15		25.0000	92.6	78 - 129
Surrogate: Toluene-d8	24.19		25.0000	96.8	84 - 117

LCS (B1C0012-BS1)

Prepared: 3/1/2021 Analyzed: 3/1/2021

1,1,1,2-Tetrachloroethane	21.8600	0.50	0.11	20.0000	109	79 - 116
1,1,1-Trichloroethane	19.4900	0.50	0.21	20.0000	97.4	73 - 130
1,1,2,2-Tetrachloroethane	22.2100	0.50	0.36	20.0000	111	71 - 122
1,1,2-Trichloroethane	20.3900	0.50	0.25	20.0000	102	70 - 124
1,1-Dichloroethane	17.4200	0.50	0.09	20.0000	87.1	69 - 128
1,1-Dichloroethene	20.2400	0.50	0.13	20.0000	101	65 - 137
1,1-Dichloropropene	21.4200	0.50	0.13	20.0000	107	74 - 129
1,2,3-Trichloropropane	20.9800	0.50	0.39	20.0000	105	74 - 123
1,2,3-Trichlorobenzene	20.8700	0.50	0.18	20.0000	104	59 - 130
1,2,4-Trichlorobenzene	19.8100	0.50	0.16	20.0000	99.0	65 - 125
1,2,4-Trimethylbenzene	19.3000	0.50	0.14	20.0000	96.5	88 - 124
1,2-Dibromo-3-chloropropane	27.6000	0.50	0.41	20.0000	138	61 - 127
1,2-Dibromoethane	22.0900	0.50	0.24	20.0000	110	72 - 125
1,2-Dichlorobenzene	20.3600	0.50	0.20	20.0000	102	84 - 113
1,2-Dichloroethane	20.1400	0.50	0.20	20.0000	101	68 - 130
1,2-Dichloropropane	18.8400	0.50	0.15	20.0000	94.2	77 - 121
1,3,5-Trimethylbenzene	19.5600	0.50	0.13	20.0000	97.8	83 - 124
1,3-Dichlorobenzene	20.0600	0.50	0.16	20.0000	100	83 - 112
1,3-Dichloropropane	22.0700	0.50	0.21	20.0000	110	77 - 119

L4



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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 B1C0012 - MSVOA_LL_W (continued)

LCS (B1C0012-BS1) - Continued

Prepared: 3/1/2021 Analyzed: 3/1/2021

1,4-Dichlorobenzene	19.6100	0.50	0.17	20.0000		98.0	79 - 115		
2,2-Dichloropropane	20.4300	0.50	0.38	20.0000		102	67 - 149		
2-Chlorotoluene	19.1100	0.50	0.11	20.0000		95.6	81 - 119		
4-Chlorotoluene	19.1200	0.50	0.12	20.0000		95.6	86 - 117		
4-Isopropyltoluene	19.5100	0.50	0.11	20.0000		97.6	82 - 131		
Benzene	21.2300	0.50	0.13	20.0000		106	75 - 124		
Bromobenzene	19.9400	0.50	0.21	20.0000		99.7	82 - 108		
Bromodichloromethane	20.8000	0.50	0.14	20.0000		104	80 - 120		
Bromoform	26.1900	0.50	0.20	20.0000		131	70 - 123		L4
Bromomethane	20.1500	0.50	0.40	20.0000		101	44 - 151		
Carbon tetrachloride	21.8800	0.50	0.09	20.0000		109	62 - 140		
Chlorobenzene	20.1900	0.50	0.13	20.0000		101	80 - 112		
Chloroethane	17.6400	0.50	0.15	20.0000		88.2	42 - 167		
Chloroform	18.6500	0.50	0.11	20.0000		93.2	77 - 122		
Chloromethane	18.1200	0.50	0.12	20.0000		90.6	33 - 153		
cis-1,2-Dichloroethene	18.6400	0.50	0.14	20.0000		93.2	75 - 121		
cis-1,3-Dichloropropene	19.1200	0.50	0.13	20.0000		95.6	73 - 127		
Dibromochloromethane	20.5600	0.50	0.16	20.0000		103	77 - 122		
Dibromomethane	20.5700	0.50	0.19	20.0000		103	75 - 121		
Dichlorodifluoromethane	20.0200	0.50	0.18	20.0000		100	0 - 171		
Ethylbenzene	22.4300	0.50	0.13	20.0000		112	82 - 119		
Hexachlorobutadiene	20.8400	0.50	0.15	20.0000		104	71 - 131		
Isopropylbenzene	18.8900	0.50	0.10	20.0000		94.4	75 - 126		
m,p-Xylene	43.0400	1.0	0.19	40.0000		108	86 - 119		
Methylene chloride	19.9400	1.0	0.71	20.0000		99.7	76 - 125		
n-Butylbenzene	19.8400	0.50	0.11	20.0000		99.2	81 - 125		
n-Propylbenzene	19.9400	0.50	0.10	20.0000		99.7	78 - 130		
Naphthalene	22.5000	0.50	0.41	20.0000		112	47 - 128		
o-Xylene	22.0500	0.50	0.13	20.0000		110	85 - 119		
sec-Butylbenzene	19.8900	0.50	0.09	20.0000		99.4	78 - 130		
Styrene	22.3200	0.50	0.13	20.0000		112	62 - 148		
tert-Butylbenzene	18.9500	0.50	0.09	20.0000		94.8	77 - 125		
Tetrachloroethene	22.1000	0.50	0.10	20.0000		110	73 - 120		
Toluene	20.2300	0.50	0.12	20.0000		101	79 - 119		
trans-1,2-Dichloroethene	19.7100	0.50	0.09	20.0000		98.6	70 - 129		
Trichloroethene	20.5300	0.50	0.10	20.0000		103	73 - 117		
Trichlorofluoromethane	20.2200	0.50	0.23	20.0000		101	59 - 135		
Vinyl chloride	17.2000	0.50	0.13	20.0000		86.0	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	21.21			25.0000		84.8	64 - 155		
Surrogate: 4-Bromofluorobenzene	25.28			25.0000		101	73 - 124		
Surrogate: Dibromofluoromethane	23.98			25.0000		95.9	78 - 129		



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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

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

Batch B1C0012 - MSVOA_LL_W (continued)

LCS (B1C0012-BS1) - Continued

Prepared: 3/1/2021 Analyzed: 3/1/2021

Surrogate: Toluene-d8 23.75 25.0000 95.0 84 - 117

LCS Dup (B1C0012-BS1)

Prepared: 3/1/2021 Analyzed: 3/1/2021

1,1,1,2-Tetrachloroethane	21.9700	0.50	0.11	20.0000	110	79 - 116	0.502	20	
1,1,1-Trichloroethane	20.0400	0.50	0.21	20.0000	100	73 - 130	2.78	20	
1,1,2,2-Tetrachloroethane	22.0400	0.50	0.36	20.0000	110	71 - 122	0.768	20	
1,1,2-Trichloroethane	20.8300	0.50	0.25	20.0000	104	70 - 124	2.13	20	
1,1-Dichloroethane	17.9400	0.50	0.09	20.0000	89.7	69 - 128	2.94	20	
1,1-Dichloroethene	20.7200	0.50	0.13	20.0000	104	65 - 137	2.34	20	
1,1-Dichloropropene	21.8900	0.50	0.13	20.0000	109	74 - 129	2.17	20	
1,2,3-Trichloropropane	21.6500	0.50	0.39	20.0000	108	74 - 123	3.14	20	
1,2,3-Trichlorobenzene	22.0200	0.50	0.18	20.0000	110	59 - 130	5.36	20	
1,2,4-Trichlorobenzene	20.7200	0.50	0.16	20.0000	104	65 - 125	4.49	20	
1,2,4-Trimethylbenzene	21.0500	0.50	0.14	20.0000	105	88 - 124	8.67	20	
1,2-Dibromo-3-chloropropane	28.6100	0.50	0.41	20.0000	143	61 - 127	3.59	20	L5
1,2-Dibromoethane	22.3800	0.50	0.24	20.0000	112	72 - 125	1.30	20	
1,2-Dichlorobenzene	21.5900	0.50	0.20	20.0000	108	84 - 113	5.86	20	
1,2-Dichloroethane	20.5700	0.50	0.20	20.0000	103	68 - 130	2.11	20	
1,2-Dichloropropane	19.2500	0.50	0.15	20.0000	96.2	77 - 121	2.15	20	
1,3,5-Trimethylbenzene	20.9100	0.50	0.13	20.0000	105	83 - 124	6.67	20	
1,3-Dichlorobenzene	21.1400	0.50	0.16	20.0000	106	83 - 112	5.24	20	
1,3-Dichloropropane	22.9600	0.50	0.21	20.0000	115	77 - 119	3.95	20	
1,4-Dichlorobenzene	20.7500	0.50	0.17	20.0000	104	79 - 115	5.65	20	
2,2-Dichloropropane	20.7000	0.50	0.38	20.0000	104	67 - 149	1.31	20	
2-Chlorotoluene	19.9900	0.50	0.11	20.0000	100	81 - 119	4.50	20	
4-Chlorotoluene	20.3900	0.50	0.12	20.0000	102	86 - 117	6.43	20	
4-Isopropyltoluene	21.1000	0.50	0.11	20.0000	106	82 - 131	7.83	20	
Benzene	22.0600	0.50	0.13	20.0000	110	75 - 124	3.83	20	
Bromobenzene	21.0500	0.50	0.21	20.0000	105	82 - 108	5.42	20	
Bromodichloromethane	20.4600	0.50	0.14	20.0000	102	80 - 120	1.65	20	
Bromoform	26.3500	0.50	0.20	20.0000	132	70 - 123	0.609	20	L4
Bromomethane	21.7200	0.50	0.40	20.0000	109	44 - 151	7.50	20	
Carbon tetrachloride	22.3700	0.50	0.09	20.0000	112	62 - 140	2.21	20	
Chlorobenzene	20.7700	0.50	0.13	20.0000	104	80 - 112	2.83	20	
Chloroethane	17.8500	0.50	0.15	20.0000	89.2	42 - 167	1.18	20	
Chloroform	19.1100	0.50	0.11	20.0000	95.6	77 - 122	2.44	20	
Chloromethane	19.0300	0.50	0.12	20.0000	95.2	33 - 153	4.90	20	
cis-1,2-Dichloroethene	19.6100	0.50	0.14	20.0000	98.0	75 - 121	5.07	20	
cis-1,3-Dichloropropene	19.1200	0.50	0.13	20.0000	95.6	73 - 127	0.00	20	
Dibromochloromethane	20.5600	0.50	0.16	20.0000	103	77 - 122	0.00	20	
Dibromomethane	21.8200	0.50	0.19	20.0000	109	75 - 121	5.90	20	
Dichlorodifluoromethane	20.7100	0.50	0.18	20.0000	104	0 - 171	3.39	20	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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 B1C0012 - MSVOA_LL_W (continued)

LCS Dup (B1C0012-BSD1) - Continued

Prepared: 3/1/2021 Analyzed: 3/1/2021

Ethylbenzene	23.0100	0.50	0.13	20.0000		115	82 - 119	2.55	20
Hexachlorobutadiene	21.9300	0.50	0.15	20.0000		110	71 - 131	5.10	20
Isopropylbenzene	19.9200	0.50	0.10	20.0000		99.6	75 - 126	5.31	20
m,p-Xylene	43.9800	1.0	0.19	40.0000		110	86 - 119	2.16	20
Methylene chloride	20.8700	1.0	0.71	20.0000		104	76 - 125	4.56	20
n-Butylbenzene	21.0000	0.50	0.11	20.0000		105	81 - 125	5.68	20
n-Propylbenzene	21.1200	0.50	0.10	20.0000		106	78 - 130	5.75	20
Naphthalene	23.6900	0.50	0.41	20.0000		118	47 - 128	5.15	20
o-Xylene	22.4900	0.50	0.13	20.0000		112	85 - 119	1.98	20
sec-Butylbenzene	21.2400	0.50	0.09	20.0000		106	78 - 130	6.56	20
Styrene	22.7000	0.50	0.13	20.0000		114	62 - 148	1.69	20
tert-Butylbenzene	20.2700	0.50	0.09	20.0000		101	77 - 125	6.73	20
Tetrachloroethene	22.1700	0.50	0.10	20.0000		111	73 - 120	0.316	20
Toluene	20.5200	0.50	0.12	20.0000		103	79 - 119	1.42	20
trans-1,2-Dichloroethene	20.8600	0.50	0.09	20.0000		104	70 - 129	5.67	20
Trichloroethene	20.9900	0.50	0.10	20.0000		105	73 - 117	2.22	20
Trichlorofluoromethane	21.1800	0.50	0.23	20.0000		106	59 - 135	4.64	20
Vinyl chloride	17.3700	0.50	0.13	20.0000		86.8	58 - 132	0.984	20
Surrogate: 1,2-Dichloroethane-d4	21.29			25.0000		85.2	64 - 155		
Surrogate: 4-Bromofluorobenzene	25.23			25.0000		101	73 - 124		
Surrogate: Dibromofluoromethane	24.59			25.0000		98.4	78 - 129		
Surrogate: Toluene-d8	23.43			25.0000		93.7	84 - 117		



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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 B1C0027 - MSSEMI_W

Blank (B1C0027-BLK1)

Prepared: 3/2/2021 Analyzed: 3/2/2021

1,4-Dioxane	ND	2.0	0.84						
Surrogate: 1,2-Dichlorobenzene-d	61.11			100.000	61.1	17 - 119			
Surrogate: 2-Fluorobiphenyl	65.15			100.000	65.2	10 - 133			
Surrogate: 4-Terphenyl-d14	78.85			100.000	78.8	5 - 139			
Surrogate: Nitrobenzene-d5	71.70			100.000	71.7	13 - 150			

LCS (B1C0027-BS1)

Prepared: 3/2/2021 Analyzed: 3/2/2021

1,4-Dioxane	104.700	2.0	0.84	100.000	105	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d	47.09			100.000	47.1	17 - 119			
Surrogate: 2-Fluorobiphenyl	57.36			100.000	57.4	10 - 133			
Surrogate: 4-Terphenyl-d14	67.95			100.000	68.0	5 - 139			
Surrogate: Nitrobenzene-d5	64.81			100.000	64.8	13 - 150			

LCS Dup (B1C0027-BSD1)

Prepared: 3/2/2021 Analyzed: 3/2/2021

1,4-Dioxane	112.090	2.0	0.84	100.000	112	75 - 155	6.82	20	
Surrogate: 1,2-Dichlorobenzene-d	59.29			100.000	59.3	17 - 119			
Surrogate: 2-Fluorobiphenyl	69.89			100.000	69.9	10 - 133			
Surrogate: 4-Terphenyl-d14	76.23			100.000	76.2	5 - 139			
Surrogate: Nitrobenzene-d5	77.77			100.000	77.8	13 - 150			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

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	RPD Limit	Notes

Batch B1C0061 - MSSEMI_W

Blank (B1C0061-BLK1)

Prepared: 3/3/2021 Analyzed: 3/4/2021

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d	0.5943			1.00000		59.4	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.7970			1.00000		79.7	8 - 111		
Surrogate: 4-Terphenyl-d14	0.8089			1.00000		80.9	12 - 113		
Surrogate: Nitrobenzene-d5	0.6367			1.00000		63.7	15 - 121		

LCS (B1C0061-BS1)

Prepared: 3/3/2021 Analyzed: 3/4/2021

1,4-Dioxane	1.38567	0.20	0.05	1.00000		139	75 - 155		
Surrogate: 1,2-Dichlorobenzene-d	0.5662			1.00000		56.6	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.4761			1.00000		47.6	8 - 111		
Surrogate: 4-Terphenyl-d14	0.7306			1.00000		73.1	12 - 113		
Surrogate: Nitrobenzene-d5	0.6386			1.00000		63.9	15 - 121		

LCS Dup (B1C0061-BSD1)

Prepared: 3/3/2021 Analyzed: 3/4/2021

1,4-Dioxane	0.934970	0.20	0.05	1.00000		93.5	75 - 155	38.8	20	R1
Surrogate: 1,2-Dichlorobenzene-d	0.5608			1.00000		56.1	13 - 99			
Surrogate: 2-Fluorobiphenyl	0.7860			1.00000		78.6	8 - 111			
Surrogate: 4-Terphenyl-d14	0.7061			1.00000		70.6	12 - 113			
Surrogate: Nitrobenzene-d5	0.6333			1.00000		63.3	15 - 121			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/17/2021

Notes and Definitions

R1	RPD value outside acceptance criteria. Reanalysis not possible due to insufficient amount of sample.
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.



HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

PROJECT:

Raytheon Main GETS Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Ross Horton

Phone 858.455.6500

Fax 858.455.6533

Date: 3/1/2021

Page 1 of 1

Sampled By: Ruben Sanchez				SAMPLE COLLECTION		MATRIX		PRESERVATION		CONTAINERS				ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOAs				SPECIAL HANDLING				Laboratory		REMARKS			
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270 SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 Hour TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested				
200461	TB-030121	3/1/2021	8:00		X	X			X	2						X									X												
2	CEFF	3/1/2021	9:20	X		X			X	3					1	X									X	X							X				
3	CBT	3/1/2021	9:30	X		X			X	3					1	X									X	X							X				
4	POX	3/1/2021	9:35	X		X		X	X	5	1	1			1	X	X		X	X					X	X							X				
5	PF	3/1/2021	9:45	X				X	X	2		1	1	1					X	X	X	X			X	X							X				
6	INF	3/1/2021	9:50	X		X			X	3	2				1	X	X	X						X			X						X				
7	EW-02	3/1/2021	10:20	X		X			X	3	1				1	X	X	X					X			X							X				
8	MW-29	3/1/2021	10:50	X		X			X	3	1				1	X	X	X					X			X							X				

Total number of containers per analysis:				24	5	2	1	1	6	Total No. of Containers: 39			
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time								
H4A		3-1-21 12:35	H4A		3/1/21 12:35								
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 & Ross Horton
 9171 Towne Centre Drive
 Suite 375
 San Diego, CA 92122
 Ph: 858.455.6500
snetto@hargis.com
rhorton@hargis.com

Instructions
 1. Fill out form completely and sign only after verified for completeness
 _____ Temperature on receipt

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.

Laboratory Report

March 16, 2021

Advanced Technology Laboratories
PO Box 92797
Long Beach, CA 90809-2797

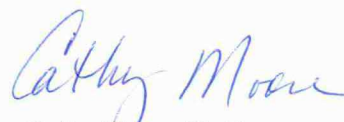
Attn: Tina Nguyen

Element Job No: 245676
Purchase Order: COD - CC
Project Name: 2100461 / Groundwater
Samples Received: 2
Date Received: 03-02-2021

Analysis	Page
Bromate by SOP 5600, Rev 4	2



Robert Stead
Senior Chemist



Cathy Moore Ph.D
Principal Chemist

Bromate by SOP 5600, Rev. 4
Ion Chromatography-Tandem Mass Spectrometry

Sample preparation: An aliquot of sample was spiked with internal standard (bromate- $^{18}\text{O}_3$), and diluted with water. The sample solutions were analyzed using IC-MS/MS.

Parts Per Billion ($\mu\text{g/L}$)

<u>Sample ID</u>	<u>Result</u>
ATL Lab#: 2100461-04 / POX	ND
ATL Lab#: 2100461-06 / INF	ND
Method Blank	ND
Detection Limit	0.5
Date Analyzed: 03-12-2021	

Quality Control Summary

Sample ID: ATL Lab#: 2100461-04 / POX

Units: Parts Per Billion ($\mu\text{g/L}$)

<u>Analyte</u>	<u>Sample Result</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>	<u>Spike Duplicate</u>	<u>Duplicate % Rec</u>	<u>RPD</u>
Bromate	ND	5.00	5.34	107	5.07	101	5
QC Guidelines				80-120		80-120	NMT 15

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2100461

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Tina Nguyen
(Tina.Nguyen@atlglobal.com)
Sampler: Ruben Sanchez

RECEIVING LABORATORY:

Element Materials Technology
9240 Santa Fe Springs Road
Santa Fe Springs, CA 90670
Phone: (562) 948-2225
Fax: (562) 948-5850
PO#: SC15075-STANDARD-TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

QC Requirements:

☒ Routine ☐ RWQCB
☐ Caltrans ☐ Level IV*
☐ Legal ☐ Other: _____

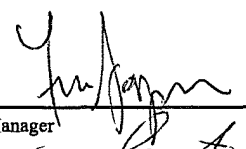
* All Level IV sample containers (including empty ones) must be returned to ATL 30 days after receipt.

EDD Requirements:

☐ Standard Excel
☐ Geotracker EDF
☐ Other: _____

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 2100461-04 / POX Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS] 1-Poly Unpres - 125mL	03/16/21 17:00	Groundwater 03/29/21 09:35	03/01/21 09:35	
ATL Lab#: 2100461-06 / INF Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS] 1-Poly Unpres - 125mL	03/16/21 17:00	Groundwater 03/29/21 09:50	03/01/21 09:50	

03-02-2021 @ Also has -D

Approved by: 

ATL Project Manager

Released By ATL Sample Control

Released By Courier

3/1/21

Date 3/2/21 11:28

Date Time

3-2-21 12:03

Date Time

Released By

Date

Time

Received By Courier

Received By Subcontract Laboratory

Date

Date

Time

Time

Received By

Date

Time



April 02, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2100760

Client Reference : Raytheon Main GETS Mid Month Sample 532.15

Enclosed are the results for sample(s) received on March 25, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "for [Name]".

Edgar P. Caballero
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-032521	2100760-01	Lab Prepared Water	3/25/21 8:00	3/25/21 15:24
CEFF	2100760-02	Groundwater	3/25/21 9:30	3/25/21 15:24
CBT	2100760-03	Groundwater	3/25/21 9:40	3/25/21 15:24
POX	2100760-04	Groundwater	3/25/21 9:45	3/25/21 15:24
INF	2100760-05	Groundwater	3/25/21 9:50	3/25/21 15:24
EW-02	2100760-06	Groundwater	3/25/21 10:30	3/25/21 15:24
MW-29	2100760-07	Groundwater	3/25/21 10:50	3/25/21 15:24

CASE NARRATIVE

Due to lab oversight the sample extracts for 1,4-Dioxane on samples INF, EW-02 and MW-29 were overconcentrated. Additional volume was provided on 03/30/21 to perform the analysis.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: TB-032521

Lab ID: 2100760-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,1,1-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,1,2-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,1-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,1-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,1-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2,3-Trichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2-Dibromoethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,3-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,3-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
1,4-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
2,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
2-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
4-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
4-Isopropyltoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Benzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Bromobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Bromodichloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Bromoform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Bromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Carbon tetrachloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Chlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Chloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Chloroform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Chloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Dibromochloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: TB-032521

Lab ID: 2100760-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Dichlorodifluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Ethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Hexachlorobutadiene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Isopropylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
m,p-Xylene	ND	1.0	1	B1C0565	03/30/2021	03/30/21 13:46	
Methylene chloride	ND	1.0	1	B1C0565	03/30/2021	03/30/21 13:46	
n-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
n-Propylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Naphthalene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
o-Xylene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
sec-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Styrene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
tert-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Tetrachloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Toluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Trichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Trichlorofluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Vinyl chloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 13:46	
Surrogate: 1,2-Dichloroethane-d4	113 %	64 - 155		B1C0565	03/30/2021	03/30/21 13:46	
Surrogate: 4-Bromofluorobenzene	99.4 %	73 - 124		B1C0565	03/30/2021	03/30/21 13:46	
Surrogate: Dibromofluoromethane	103 %	78 - 129		B1C0565	03/30/2021	03/30/21 13:46	
Surrogate: Toluene-d8	97.4 %	84 - 117		B1C0565	03/30/2021	03/30/21 13:46	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: CEFF

Lab ID: 2100760-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,1,1-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,1,2-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,1-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,1-Dichloroethene	3.3	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,1-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2,3-Trichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2-Dibromoethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,3-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,3-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
1,4-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
2,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
2-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
4-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
4-Isopropyltoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Benzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Bromobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Bromodichloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Bromoform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Bromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Carbon tetrachloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Chlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Chloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Chloroform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Chloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Dibromochloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: CEFF

Lab ID: 2100760-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Dichlorodifluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Ethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Hexachlorobutadiene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Isopropylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
m,p-Xylene	ND	1.0	1	B1C0565	03/30/2021	03/30/21 14:11	
Methylene chloride	ND	1.0	1	B1C0565	03/30/2021	03/30/21 14:11	
n-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
n-Propylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Naphthalene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
o-Xylene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
sec-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Styrene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
tert-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Tetrachloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Toluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Trichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Trichlorofluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Vinyl chloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:11	
Surrogate: 1,2-Dichloroethane-d4	115 %	64 - 155		B1C0565	03/30/2021	03/30/21 14:11	
Surrogate: 4-Bromofluorobenzene	99.0 %	73 - 124		B1C0565	03/30/2021	03/30/21 14:11	
Surrogate: Dibromofluoromethane	106 %	78 - 129		B1C0565	03/30/2021	03/30/21 14:11	
Surrogate: Toluene-d8	98.1 %	84 - 117		B1C0565	03/30/2021	03/30/21 14:11	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: CEFF

Lab ID: 2100760-02

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1C0518	03/26/2021	03/26/21 18:56	
Surrogate: 1,2-Dichlorobenzene-d4	63.9 %	13 - 99		B1C0518	03/26/2021	03/26/21 18:56	
Surrogate: 2-Fluorobiphenyl	75.2 %	8 - 111		B1C0518	03/26/2021	03/26/21 18:56	
Surrogate: 4-Terphenyl-d14	68.9 %	12 - 113		B1C0518	03/26/2021	03/26/21 18:56	
Surrogate: Nitrobenzene-d5	61.3 %	15 - 121		B1C0518	03/26/2021	03/26/21 18:56	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: CBT

Lab ID: 2100760-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,1,1-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,1,2-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,1-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,1-Dichloroethene	3.7	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,1-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2,3-Trichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2-Dibromoethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,3-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,3-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
1,4-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
2,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
2-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
4-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
4-Isopropyltoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Benzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Bromobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Bromodichloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Bromoform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Bromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Carbon tetrachloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Chlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Chloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Chloroform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Chloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Dibromochloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: CBT

Lab ID: 2100760-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Dichlorodifluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Ethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Hexachlorobutadiene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Isopropylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
m,p-Xylene	ND	1.0	1	B1C0565	03/30/2021	03/30/21 14:36	
Methylene chloride	ND	1.0	1	B1C0565	03/30/2021	03/30/21 14:36	
n-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
n-Propylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Naphthalene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
o-Xylene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
sec-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Styrene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
tert-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Tetrachloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Toluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Trichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Trichlorofluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Vinyl chloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 14:36	
Surrogate: 1,2-Dichloroethane-d4	116 %	64 - 155		B1C0565	03/30/2021	03/30/21 14:36	
Surrogate: 4-Bromofluorobenzene	97.9 %	73 - 124		B1C0565	03/30/2021	03/30/21 14:36	
Surrogate: Dibromofluoromethane	108 %	78 - 129		B1C0565	03/30/2021	03/30/21 14:36	
Surrogate: Toluene-d8	99.6 %	84 - 117		B1C0565	03/30/2021	03/30/21 14:36	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: CBT

Lab ID: 2100760-03

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1C0518	03/26/2021	03/26/21 19:22	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.9 %</i>	<i>13 - 99</i>		B1C0518	03/26/2021	<i>03/26/21 19:22</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.3 %</i>	<i>8 - 111</i>		B1C0518	03/26/2021	<i>03/26/21 19:22</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>70.3 %</i>	<i>12 - 113</i>		B1C0518	03/26/2021	<i>03/26/21 19:22</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>56.5 %</i>	<i>15 - 121</i>		B1C0518	03/26/2021	<i>03/26/21 19:22</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: POX

Lab ID: 2100760-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,1,1-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,1,2-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,1-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,1-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,1-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2,3-Trichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2-Dibromoethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,3-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,3-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
1,4-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
2,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
2-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
4-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
4-Isopropyltoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Benzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Bromobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Bromodichloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Bromoform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Bromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Carbon tetrachloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Chlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Chloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Chloroform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Chloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Dibromochloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: POX

Lab ID: 2100760-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Dichlorodifluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Ethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Hexachlorobutadiene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Isopropylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
m,p-Xylene	ND	1.0	1	B1C0565	03/30/2021	03/30/21 15:01	
Methylene chloride	ND	1.0	1	B1C0565	03/30/2021	03/30/21 15:01	
n-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
n-Propylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Naphthalene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
o-Xylene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
sec-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Styrene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
tert-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Tetrachloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Toluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Trichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Trichlorofluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Vinyl chloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:01	
Surrogate: 1,2-Dichloroethane-d4	112 %	64 - 155		B1C0565	03/30/2021	03/30/21 15:01	
Surrogate: 4-Bromofluorobenzene	97.1 %	73 - 124		B1C0565	03/30/2021	03/30/21 15:01	
Surrogate: Dibromofluoromethane	104 %	78 - 129		B1C0565	03/30/2021	03/30/21 15:01	
Surrogate: Toluene-d8	99.1 %	84 - 117		B1C0565	03/30/2021	03/30/21 15:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: POX

Lab ID: 2100760-04

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1C0518	03/26/2021	03/26/21 19:48	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.8 %</i>	<i>13 - 99</i>		B1C0518	03/26/2021	<i>03/26/21 19:48</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.7 %</i>	<i>8 - 111</i>		B1C0518	03/26/2021	<i>03/26/21 19:48</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>63.3 %</i>	<i>12 - 113</i>		B1C0518	03/26/2021	<i>03/26/21 19:48</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>58.5 %</i>	<i>15 - 121</i>		B1C0518	03/26/2021	<i>03/26/21 19:48</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: INF

Lab ID: 2100760-05

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,1,1-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,1,2-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,1-Dichloroethane	0.55	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,1-Dichloroethene	57	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,1-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2,3-Trichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2-Dibromoethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,3-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,3-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
1,4-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
2,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
2-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
4-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
4-Isopropyltoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Benzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Bromobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Bromodichloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Bromoform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Bromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Carbon tetrachloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Chlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Chloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Chloroform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Chloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Dibromochloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: INF

Lab ID: 2100760-05

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Dichlorodifluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Ethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Hexachlorobutadiene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Isopropylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
m,p-Xylene	ND	1.0	1	B1C0565	03/30/2021	03/30/21 16:41	
Methylene chloride	ND	1.0	1	B1C0565	03/30/2021	03/30/21 16:41	
n-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
n-Propylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Naphthalene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
o-Xylene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
sec-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Styrene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
tert-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Tetrachloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Toluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Trichloroethene	0.63	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Trichlorofluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
Vinyl chloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 16:41	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>114 %</i>	<i>64 - 155</i>		B1C0565	03/30/2021	<i>03/30/21 16:41</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.4 %</i>	<i>73 - 124</i>		B1C0565	03/30/2021	<i>03/30/21 16:41</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>78 - 129</i>		B1C0565	03/30/2021	<i>03/30/21 16:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.4 %</i>	<i>84 - 117</i>		B1C0565	03/30/2021	<i>03/30/21 16:41</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: INF

Lab ID: 2100760-05

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

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	33	2.0	1	B1C0585	03/30/2021	03/31/21 19:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>63.9 %</i>	<i>17 - 119</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:02</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.3 %</i>	<i>10 - 133</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:02</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>67.2 %</i>	<i>5 - 139</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:02</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>64.2 %</i>	<i>13 - 150</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:02</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: EW-02

Lab ID: 2100760-06

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,1,1-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,1,2-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,1-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,1-Dichloroethene	15	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,1-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2,3-Trichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2-Dibromoethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,3-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,3-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
1,4-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
2,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
2-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
4-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
4-Isopropyltoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Benzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Bromobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Bromodichloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Bromoform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Bromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Carbon tetrachloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Chlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Chloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Chloroform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Chloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Dibromochloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: EW-02

Lab ID: 2100760-06

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Dichlorodifluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Ethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Hexachlorobutadiene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Isopropylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
m,p-Xylene	ND	1.0	1	B1C0565	03/30/2021	03/30/21 15:26	
Methylene chloride	ND	1.0	1	B1C0565	03/30/2021	03/30/21 15:26	
n-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
n-Propylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Naphthalene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
o-Xylene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
sec-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Styrene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
tert-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Tetrachloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Toluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Trichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Trichlorofluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Vinyl chloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 15:26	
Surrogate: 1,2-Dichloroethane-d4	112 %	64 - 155		B1C0565	03/30/2021	03/30/21 15:26	
Surrogate: 4-Bromofluorobenzene	97.8 %	73 - 124		B1C0565	03/30/2021	03/30/21 15:26	
Surrogate: Dibromofluoromethane	102 %	78 - 129		B1C0565	03/30/2021	03/30/21 15:26	
Surrogate: Toluene-d8	99.3 %	84 - 117		B1C0565	03/30/2021	03/30/21 15:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: EW-02

Lab ID: 2100760-06

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

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	6.4	2.0	1	B1C0585	03/30/2021	03/31/21 19:28	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>66.0 %</i>	<i>17 - 119</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:28</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.4 %</i>	<i>10 - 133</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:28</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>72.5 %</i>	<i>5 - 139</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:28</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.4 %</i>	<i>13 - 150</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:28</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: MW-29

Lab ID: 2100760-07

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,1,1-Trichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,1,2-Trichloroethane	0.68	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,1-Dichloroethane	1.9	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,1-Dichloroethene	200	25	50	B1C0565	03/30/2021	03/30/21 16:16	
1,1-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2,3-Trichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2-Dibromoethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2-Dichloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,3-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,3-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
1,4-Dichlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
2,2-Dichloropropane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
2-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
4-Chlorotoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
4-Isopropyltoluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Benzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Bromobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Bromodichloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Bromoform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Bromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Carbon tetrachloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Chlorobenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Chloroethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Chloroform	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Chloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
cis-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
cis-1,3-Dichloropropene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Dibromochloromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: MW-29

Lab ID: 2100760-07

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Dichlorodifluoromethane	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Ethylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Hexachlorobutadiene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Isopropylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
m,p-Xylene	ND	1.0	1	B1C0565	03/30/2021	03/30/21 17:07	
Methylene chloride	ND	1.0	1	B1C0565	03/30/2021	03/30/21 17:07	
n-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
n-Propylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Naphthalene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
o-Xylene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
sec-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Styrene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
tert-Butylbenzene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Tetrachloroethene	0.59	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Toluene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
trans-1,2-Dichloroethene	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Trichloroethene	2.0	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Trichlorofluoromethane	0.96	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
Vinyl chloride	ND	0.50	1	B1C0565	03/30/2021	03/30/21 17:07	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>	<i>64 - 155</i>		B1C0565	03/30/2021	<i>03/30/21 16:16</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>117 %</i>	<i>64 - 155</i>		B1C0565	03/30/2021	<i>03/30/21 17:07</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.4 %</i>	<i>73 - 124</i>		B1C0565	03/30/2021	<i>03/30/21 17:07</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.8 %</i>	<i>73 - 124</i>		B1C0565	03/30/2021	<i>03/30/21 16:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>78 - 129</i>		B1C0565	03/30/2021	<i>03/30/21 16:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>78 - 129</i>		B1C0565	03/30/2021	<i>03/30/21 17:07</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.1 %</i>	<i>84 - 117</i>		B1C0565	03/30/2021	<i>03/30/21 16:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.1 %</i>	<i>84 - 117</i>		B1C0565	03/30/2021	<i>03/30/21 17:07</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Client Sample ID: MW-29

Lab ID: 2100760-07

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

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	120	2.0	1	B1C0585	03/30/2021	03/31/21 19:54	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>66.8 %</i>	<i>17 - 119</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:54</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>73.7 %</i>	<i>10 - 133</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:54</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>54.8 %</i>	<i>5 - 139</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:54</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.1 %</i>	<i>13 - 150</i>		<i>B1C0585</i>	<i>03/30/2021</i>	<i>03/31/21 19:54</i>	



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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 B1C0565 - MSVOA_LL_W

Blank (B1C0565-BLK1)

Prepared: 3/30/2021 Analyzed: 3/30/2021

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



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

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 B1C0565 - MSVOA_LL_W (continued)

Blank (B1C0565-BLK1) - Continued

Prepared: 3/30/2021 Analyzed: 3/30/2021

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
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	28.80		25.0000	115	64 - 155
Surrogate: 4-Bromofluorobenzene	24.40		25.0000	97.6	73 - 124
Surrogate: Dibromofluoromethane	27.60		25.0000	110	78 - 129
Surrogate: Toluene-d8	24.39		25.0000	97.6	84 - 117

LCS (B1C0565-BS1)

Prepared: 3/30/2021 Analyzed: 3/30/2021

1,1,1,2-Tetrachloroethane	19.5300	0.50	0.11	20.0000	97.6	79 - 116
1,1,1-Trichloroethane	23.1600	0.50	0.21	20.0000	116	73 - 130
1,1,2,2-Tetrachloroethane	19.1100	0.50	0.36	20.0000	95.6	71 - 122
1,1,2-Trichloroethane	19.2900	0.50	0.25	20.0000	96.4	70 - 124
1,1-Dichloroethane	20.9100	0.50	0.09	20.0000	105	69 - 128
1,1-Dichloroethene	20.4800	0.50	0.13	20.0000	102	65 - 137
1,1-Dichloropropene	19.1800	0.50	0.13	20.0000	95.9	74 - 129
1,2,3-Trichloropropane	19.2500	0.50	0.39	20.0000	96.2	74 - 123
1,2,3-Trichlorobenzene	22.7000	0.50	0.18	20.0000	114	59 - 130
1,2,4-Trichlorobenzene	22.5100	0.50	0.16	20.0000	113	65 - 125
1,2,4-Trimethylbenzene	19.1900	0.50	0.14	20.0000	96.0	88 - 124
1,2-Dibromo-3-chloropropane	19.1900	0.50	0.41	20.0000	96.0	61 - 127
1,2-Dibromoethane	20.1000	0.50	0.24	20.0000	100	72 - 125
1,2-Dichlorobenzene	20.4900	0.50	0.20	20.0000	102	84 - 113
1,2-Dichloroethane	21.4400	0.50	0.20	20.0000	107	68 - 130
1,2-Dichloropropane	20.1600	0.50	0.15	20.0000	101	77 - 121
1,3,5-Trimethylbenzene	19.0900	0.50	0.13	20.0000	95.4	83 - 124



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

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 B1C0565 - MSVOA_LL_W (continued)

LCS (B1C0565-BS1) - Continued

Prepared: 3/30/2021 Analyzed: 3/30/2021

1,3-Dichlorobenzene	20.0900	0.50	0.16	20.0000		100	83 - 112		
1,3-Dichloropropane	19.2000	0.50	0.21	20.0000		96.0	77 - 119		
1,4-Dichlorobenzene	19.7100	0.50	0.17	20.0000		98.6	79 - 115		
2,2-Dichloropropane	21.3900	0.50	0.38	20.0000		107	67 - 149		
2-Chlorotoluene	19.3300	0.50	0.11	20.0000		96.6	81 - 119		
4-Chlorotoluene	19.6000	0.50	0.12	20.0000		98.0	86 - 117		
4-Isopropyltoluene	19.9500	0.50	0.11	20.0000		99.8	82 - 131		
Benzene	18.0200	0.50	0.13	20.0000		90.1	75 - 124		
Bromobenzene	19.3400	0.50	0.21	20.0000		96.7	82 - 108		
Bromodichloromethane	19.8000	0.50	0.14	20.0000		99.0	80 - 120		
Bromoform	19.8000	0.50	0.20	20.0000		99.0	70 - 123		
Bromomethane	19.7900	0.50	0.40	20.0000		99.0	44 - 151		
Carbon tetrachloride	21.5100	0.50	0.09	20.0000		108	62 - 140		
Chlorobenzene	19.7300	0.50	0.13	20.0000		98.6	80 - 112		
Chloroethane	19.8300	0.50	0.15	20.0000		99.2	42 - 167		
Chloroform	21.4100	0.50	0.11	20.0000		107	77 - 122		
Chloromethane	22.4900	0.50	0.12	20.0000		112	33 - 153		
cis-1,2-Dichloroethene	19.9400	0.50	0.14	20.0000		99.7	75 - 121		
cis-1,3-Dichloropropene	18.5900	0.50	0.13	20.0000		93.0	73 - 127		
Dibromochloromethane	18.8200	0.50	0.16	20.0000		94.1	77 - 122		
Dibromomethane	20.8900	0.50	0.19	20.0000		104	75 - 121		
Dichlorodifluoromethane	17.8100	0.50	0.18	20.0000		89.0	0 - 171		
Ethylbenzene	19.9900	0.50	0.13	20.0000		100	82 - 119		
Hexachlorobutadiene	24.2400	0.50	0.15	20.0000		121	71 - 131		
Isopropylbenzene	19.2200	0.50	0.10	20.0000		96.1	75 - 126		
m,p-Xylene	40.1400	1.0	0.19	40.0000		100	86 - 119		
Methylene chloride	20.7900	1.0	0.71	20.0000		104	76 - 125		
n-Butylbenzene	20.5000	0.50	0.11	20.0000		102	81 - 125		
n-Propylbenzene	19.7400	0.50	0.10	20.0000		98.7	78 - 130		
Naphthalene	22.5100	0.50	0.41	20.0000		113	47 - 128		
o-Xylene	19.7000	0.50	0.13	20.0000		98.5	85 - 119		
sec-Butylbenzene	20.1400	0.50	0.09	20.0000		101	78 - 130		
Styrene	19.7600	0.50	0.13	20.0000		98.8	62 - 148		
tert-Butylbenzene	19.7900	0.50	0.09	20.0000		99.0	77 - 125		
Tetrachloroethene	20.0600	0.50	0.10	20.0000		100	73 - 120		
Toluene	19.1700	0.50	0.12	20.0000		95.8	79 - 119		
trans-1,2-Dichloroethene	20.4800	0.50	0.09	20.0000		102	70 - 129		
Trichloroethene	19.9600	0.50	0.10	20.0000		99.8	73 - 117		
Trichlorofluoromethane	21.7600	0.50	0.23	20.0000		109	59 - 135		
Vinyl chloride	19.3000	0.50	0.13	20.0000		96.5	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	28.78			25.0000		115	64 - 155		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

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

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

Batch B1C0565 - MSVOA_LL_W (continued)

LCS (B1C0565-BS1) - Continued

Prepared: 3/30/2021 Analyzed: 3/30/2021

Surrogate: 4-Bromofluorobenzene	25.28		25.0000		101	73 - 124			
Surrogate: Dibromofluoromethane	27.41		25.0000		110	78 - 129			
Surrogate: Toluene-d8	24.80		25.0000		99.2	84 - 117			

LCS Dup (B1C0565-BSD1)

Prepared: 3/30/2021 Analyzed: 3/30/2021

1,1,1,2-Tetrachloroethane	19.9000	0.50	0.11	20.0000	99.5	79 - 116	1.88	20	
1,1,1-Trichloroethane	21.4600	0.50	0.21	20.0000	107	73 - 130	7.62	20	
1,1,2,2-Tetrachloroethane	18.6100	0.50	0.36	20.0000	93.0	71 - 122	2.65	20	
1,1,2-Trichloroethane	19.3000	0.50	0.25	20.0000	96.5	70 - 124	0.0518	20	
1,1-Dichloroethane	19.5600	0.50	0.09	20.0000	97.8	69 - 128	6.67	20	
1,1-Dichloroethene	19.3400	0.50	0.13	20.0000	96.7	65 - 137	5.73	20	
1,1-Dichloropropene	19.3100	0.50	0.13	20.0000	96.6	74 - 129	0.675	20	
1,2,3-Trichloropropane	19.4000	0.50	0.39	20.0000	97.0	74 - 123	0.776	20	
1,2,3-Trichlorobenzene	23.5300	0.50	0.18	20.0000	118	59 - 130	3.59	20	
1,2,4-Trichlorobenzene	23.0400	0.50	0.16	20.0000	115	65 - 125	2.33	20	
1,2,4-Trimethylbenzene	19.1100	0.50	0.14	20.0000	95.6	88 - 124	0.418	20	
1,2-Dibromo-3-chloropropane	19.8900	0.50	0.41	20.0000	99.4	61 - 127	3.58	20	
1,2-Dibromoethane	19.5500	0.50	0.24	20.0000	97.8	72 - 125	2.77	20	
1,2-Dichlorobenzene	20.4600	0.50	0.20	20.0000	102	84 - 113	0.147	20	
1,2-Dichloroethane	21.1300	0.50	0.20	20.0000	106	68 - 130	1.46	20	
1,2-Dichloropropane	19.9300	0.50	0.15	20.0000	99.6	77 - 121	1.15	20	
1,3,5-Trimethylbenzene	19.0000	0.50	0.13	20.0000	95.0	83 - 124	0.473	20	
1,3-Dichlorobenzene	20.1600	0.50	0.16	20.0000	101	83 - 112	0.348	20	
1,3-Dichloropropane	19.3600	0.50	0.21	20.0000	96.8	77 - 119	0.830	20	
1,4-Dichlorobenzene	19.6000	0.50	0.17	20.0000	98.0	79 - 115	0.560	20	
2,2-Dichloropropane	19.1400	0.50	0.38	20.0000	95.7	67 - 149	11.1	20	
2-Chlorotoluene	19.2800	0.50	0.11	20.0000	96.4	81 - 119	0.259	20	
4-Chlorotoluene	19.3100	0.50	0.12	20.0000	96.6	86 - 117	1.49	20	
4-Isopropyltoluene	19.8500	0.50	0.11	20.0000	99.2	82 - 131	0.503	20	
Benzene	18.9200	0.50	0.13	20.0000	94.6	75 - 124	4.87	20	
Bromobenzene	19.3600	0.50	0.21	20.0000	96.8	82 - 108	0.103	20	
Bromodichloromethane	19.1900	0.50	0.14	20.0000	96.0	80 - 120	3.13	20	
Bromoform	19.5200	0.50	0.20	20.0000	97.6	70 - 123	1.42	20	
Bromomethane	19.5100	0.50	0.40	20.0000	97.6	44 - 151	1.42	20	
Carbon tetrachloride	21.2600	0.50	0.09	20.0000	106	62 - 140	1.17	20	
Chlorobenzene	19.7200	0.50	0.13	20.0000	98.6	80 - 112	0.0507	20	
Chloroethane	18.4000	0.50	0.15	20.0000	92.0	42 - 167	7.48	20	
Chloroform	20.0300	0.50	0.11	20.0000	100	77 - 122	6.66	20	
Chloromethane	20.7300	0.50	0.12	20.0000	104	33 - 153	8.14	20	
cis-1,2-Dichloroethene	18.8200	0.50	0.14	20.0000	94.1	75 - 121	5.78	20	
cis-1,3-Dichloropropene	17.5500	0.50	0.13	20.0000	87.8	73 - 127	5.76	20	
Dibromochloromethane	18.8400	0.50	0.16	20.0000	94.2	77 - 122	0.106	20	



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Reported : 04/02/2021

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 B1C0565 - MSVOA_LL_W (continued)

LCS Dup (B1C0565-BSD1) - Continued

Prepared: 3/30/2021 Analyzed: 3/30/2021

Dibromomethane	19.8700	0.50	0.19	20.0000		99.4	75 - 121	5.00	20
Dichlorodifluoromethane	16.6600	0.50	0.18	20.0000		83.3	0 - 171	6.67	20
Ethylbenzene	19.9300	0.50	0.13	20.0000		99.6	82 - 119	0.301	20
Hexachlorobutadiene	24.1200	0.50	0.15	20.0000		121	71 - 131	0.496	20
Isopropylbenzene	19.3100	0.50	0.10	20.0000		96.6	75 - 126	0.467	20
m,p-Xylene	39.8800	1.0	0.19	40.0000		99.7	86 - 119	0.650	20
Methylene chloride	19.5900	1.0	0.71	20.0000		98.0	76 - 125	5.94	20
n-Butylbenzene	20.3200	0.50	0.11	20.0000		102	81 - 125	0.882	20
n-Propylbenzene	19.4600	0.50	0.10	20.0000		97.3	78 - 130	1.43	20
Naphthalene	22.4800	0.50	0.41	20.0000		112	47 - 128	0.133	20
o-Xylene	19.5500	0.50	0.13	20.0000		97.8	85 - 119	0.764	20
sec-Butylbenzene	20.0600	0.50	0.09	20.0000		100	78 - 130	0.398	20
Styrene	19.8800	0.50	0.13	20.0000		99.4	62 - 148	0.605	20
tert-Butylbenzene	19.6400	0.50	0.09	20.0000		98.2	77 - 125	0.761	20
Tetrachloroethene	20.1200	0.50	0.10	20.0000		101	73 - 120	0.299	20
Toluene	18.7900	0.50	0.12	20.0000		94.0	79 - 119	2.00	20
trans-1,2-Dichloroethene	18.8500	0.50	0.09	20.0000		94.2	70 - 129	8.29	20
Trichloroethene	19.6900	0.50	0.10	20.0000		98.4	73 - 117	1.36	20
Trichlorofluoromethane	20.2400	0.50	0.23	20.0000		101	59 - 135	7.24	20
Vinyl chloride	18.1200	0.50	0.13	20.0000		90.6	58 - 132	6.31	20
Surrogate: 1,2-Dichloroethane-d4	27.13			25.0000		109	64 - 155		
Surrogate: 4-Bromofluorobenzene	24.72			25.0000		98.9	73 - 124		
Surrogate: Dibromofluoromethane	25.46			25.0000		102	78 - 129		
Surrogate: Toluene-d8	24.52			25.0000		98.1	84 - 117		



Certificate of Analysis

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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

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 B1C0585 - MSSEMI_W

Blank (B1C0585-BLK1)

Prepared: 3/30/2021 Analyzed: 3/31/2021

1,4-Dioxane	ND	2.0	0.84						
Surrogate: 1,2-Dichlorobenzene-d	54.41			100.000		54.4	17 - 119		
Surrogate: 2-Fluorobiphenyl	63.96			100.000		64.0	10 - 133		
Surrogate: 4-Terphenyl-d14	68.39			100.000		68.4	5 - 139		
Surrogate: Nitrobenzene-d5	55.74			100.000		55.7	13 - 150		

LCS (B1C0585-BS1)

Prepared: 3/30/2021 Analyzed: 3/31/2021

1,4-Dioxane	122.540	2.0	0.84	100.000		123	75 - 155		
Surrogate: 1,2-Dichlorobenzene-d	65.86			100.000		65.9	17 - 119		
Surrogate: 2-Fluorobiphenyl	77.12			100.000		77.1	10 - 133		
Surrogate: 4-Terphenyl-d14	60.67			100.000		60.7	5 - 139		
Surrogate: Nitrobenzene-d5	74.33			100.000		74.3	13 - 150		

LCS Dup (B1C0585-BSD1)

Prepared: 3/30/2021 Analyzed: 3/31/2021

1,4-Dioxane	101.210	2.0	0.84	100.000		101	75 - 155	19.1	20
Surrogate: 1,2-Dichlorobenzene-d	68.72			100.000		68.7	17 - 119		
Surrogate: 2-Fluorobiphenyl	74.12			100.000		74.1	10 - 133		
Surrogate: 4-Terphenyl-d14	67.20			100.000		67.2	5 - 139		
Surrogate: Nitrobenzene-d5	74.18			100.000		74.2	13 - 150		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

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	RPD Limit	Notes

Batch B1C0518 - MSSEMI_W

Blank (B1C0518-BLK1)

Prepared: 3/26/2021 Analyzed: 3/26/2021

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d	0.6416			1.00000		64.2	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.7358			1.00000		73.6	8 - 111		
Surrogate: 4-Terphenyl-d14	0.7939			1.00000		79.4	12 - 113		
Surrogate: Nitrobenzene-d5	0.5786			1.00000		57.9	15 - 121		

LCS (B1C0518-BS1)

Prepared: 3/26/2021 Analyzed: 3/26/2021

1,4-Dioxane	3.66097	0.20	0.05	1.00000		366	75 - 155		L5
Surrogate: 1,2-Dichlorobenzene-d	0.6356			1.00000		63.6	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.8090			1.00000		80.9	8 - 111		
Surrogate: 4-Terphenyl-d14	0.7332			1.00000		73.3	12 - 113		
Surrogate: Nitrobenzene-d5	0.6451			1.00000		64.5	15 - 121		

LCS Dup (B1C0518-BSD1)

Prepared: 3/26/2021 Analyzed: 3/26/2021

1,4-Dioxane	2.14789	0.20	0.05	1.00000		215	75 - 155	52.1	20 L5, R
Surrogate: 1,2-Dichlorobenzene-d	0.5824			1.00000		58.2	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.7365			1.00000		73.7	8 - 111		
Surrogate: 4-Terphenyl-d14	0.6269			1.00000		62.7	12 - 113		
Surrogate: Nitrobenzene-d5	0.5828			1.00000		58.3	15 - 121		



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/02/2021

Notes and Definitions

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.
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.



Raytheon Main GETS Mid Month Sample

TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Ross Horton

Phone 858.455.6500

Fax 858.455.6533

Sampled By:

Ruben Sanchez

SAMPLE COLLECTION

Total number of containers per analysis:	20	6	Total No. of Containers: 26

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

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.
- Consult project QA documents for specific instructions.

5.6°C Temperature on receipt

SCIR7

Date: 03/25/2021
Page 1 of 1

Laboratory

**Advanced Technology
Laboratories**
Attn: Rachelle Arada
3275 Walnut Ave
Signal Hill, CA 90755
(562) 989-4045

REMARKS

Send Results to:
Steve Netto & Ross Horton
 9171 Towne Centre Drive
 Suite 375
 San Diego, CA 92122
 Ph: 858.455.6500
snetto@hargis.com
rhorton@hargis.com



April 21, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2100809

Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on April 01, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Edgar P. Caballero', with a small 'En' written below it.

Edgar P. Caballero
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-040121	2100809-01	Water	4/01/21 8:00	4/01/21 14:56
CEFF	2100809-02	Groundwater	4/01/21 9:30	4/01/21 14:56
CBT	2100809-03	Groundwater	4/01/21 9:34	4/01/21 14:56
POX	2100809-04	Groundwater	4/01/21 9:40	4/01/21 14:56
PF	2100809-05	Groundwater	4/01/21 9:50	4/01/21 14:56
INF	2100809-06	Groundwater	4/01/21 9:58	4/01/21 14:56
EW-02	2100809-07	Groundwater	4/01/21 10:20	4/01/21 14:56
MW-29	2100809-08	Groundwater	4/01/21 10:40	4/01/21 14:56

CASE NARRATIVE

Samples for Bromate by IC-MS/MS was subcontracted to Element Materials Technology with CA-ELAP Cert. 2652.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: TB-040121

Lab ID: 2100809-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,1,1-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,1,2-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,1-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,1-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,1-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2,3-Trichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2-Dibromoethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,3-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,3-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
1,4-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
2,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
2-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
4-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
4-Isopropyltoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Benzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Bromobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Bromodichloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Bromoform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Bromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Carbon tetrachloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Chlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Chloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Chloroform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Chloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Dibromochloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: TB-040121

Lab ID: 2100809-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Dichlorodifluoromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Ethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Hexachlorobutadiene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Isopropylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
m,p-Xylene	ND	1.0	1	B1D0022	04/02/2021	04/02/21 17:26	
Methylene chloride	ND	1.0	1	B1D0022	04/02/2021	04/02/21 17:26	
n-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
n-Propylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Naphthalene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
o-Xylene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
sec-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Styrene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
tert-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Tetrachloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Toluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Trichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Trichlorofluoromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Vinyl chloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:26	
Surrogate: 1,2-Dichloroethane-d4	98.2 %	64 - 155		B1D0022	04/02/2021	04/02/21 17:26	
Surrogate: 4-Bromofluorobenzene	94.8 %	73 - 124		B1D0022	04/02/2021	04/02/21 17:26	
Surrogate: Dibromofluoromethane	100 %	78 - 129		B1D0022	04/02/2021	04/02/21 17:26	
Surrogate: Toluene-d8	97.2 %	84 - 117		B1D0022	04/02/2021	04/02/21 17:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: CEFF

Lab ID: 2100809-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,1,1-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,1,2-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,1-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,1-Dichloroethene	2.3	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,1-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2,3-Trichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2-Dibromoethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,3-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,3-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
1,4-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
2,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
2-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
4-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
4-Isopropyltoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Benzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Bromobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Bromodichloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Bromoform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Bromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Carbon tetrachloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Chlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Chloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Chloroform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Chloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Dibromochloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: CEFF

Lab ID: 2100809-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Dichlorodifluoromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Ethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Hexachlorobutadiene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Isopropylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
m,p-Xylene	ND	1.0	1	B1D0022	04/02/2021	04/02/21 17:51	
Methylene chloride	ND	1.0	1	B1D0022	04/02/2021	04/02/21 17:51	
n-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
n-Propylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Naphthalene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
o-Xylene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
sec-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Styrene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
tert-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Tetrachloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Toluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Trichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Trichlorofluoromethane	1.0	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
Vinyl chloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 17:51	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.8 %</i>	<i>64 - 155</i>		B1D0022	04/02/2021	<i>04/02/21 17:51</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.6 %</i>	<i>73 - 124</i>		B1D0022	04/02/2021	<i>04/02/21 17:51</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.4 %</i>	<i>78 - 129</i>		B1D0022	04/02/2021	<i>04/02/21 17:51</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.4 %</i>	<i>84 - 117</i>		B1D0022	04/02/2021	<i>04/02/21 17:51</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: CEFF

Lab ID: 2100809-02

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1D0046	04/02/2021	04/05/21 14:52	
Surrogate: 1,2-Dichlorobenzene-d4	49.3 %	13 - 99		B1D0046	04/02/2021	04/05/21 14:52	
Surrogate: 2-Fluorobiphenyl	62.2 %	8 - 111		B1D0046	04/02/2021	04/05/21 14:52	
Surrogate: 4-Terphenyl-d14	57.6 %	12 - 113		B1D0046	04/02/2021	04/05/21 14:52	
Surrogate: Nitrobenzene-d5	52.4 %	15 - 121		B1D0046	04/02/2021	04/05/21 14:52	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: CBT

Lab ID: 2100809-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,1,1-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,1,2-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,1-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,1-Dichloroethene	2.2	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,1-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2,3-Trichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2-Dibromoethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,3-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,3-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
1,4-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
2,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
2-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
4-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
4-Isopropyltoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Benzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Bromobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Bromodichloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Bromoform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Bromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Carbon tetrachloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Chlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Chloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Chloroform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Chloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Dibromochloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: CBT

Lab ID: 2100809-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Dichlorodifluoromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Ethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Hexachlorobutadiene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Isopropylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
m,p-Xylene	ND	1.0	1	B1D0022	04/02/2021	04/02/21 18:16	
Methylene chloride	ND	1.0	1	B1D0022	04/02/2021	04/02/21 18:16	
n-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
n-Propylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Naphthalene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
o-Xylene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
sec-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Styrene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
tert-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Tetrachloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Toluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Trichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Trichlorofluoromethane	1.0	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
Vinyl chloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:16	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.0 %</i>	<i>64 - 155</i>		B1D0022	04/02/2021	<i>04/02/21 18:16</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.2 %</i>	<i>73 - 124</i>		B1D0022	04/02/2021	<i>04/02/21 18:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.9 %</i>	<i>78 - 129</i>		B1D0022	04/02/2021	<i>04/02/21 18:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.8 %</i>	<i>84 - 117</i>		B1D0022	04/02/2021	<i>04/02/21 18:16</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: CBT

Lab ID: 2100809-03

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1D0046	04/02/2021	04/05/21 15:20	
Surrogate: 1,2-Dichlorobenzene-d4	30.7 %	13 - 99		B1D0046	04/02/2021	04/05/21 15:20	
Surrogate: 2-Fluorobiphenyl	39.7 %	8 - 111		B1D0046	04/02/2021	04/05/21 15:20	
Surrogate: 4-Terphenyl-d14	29.4 %	12 - 113		B1D0046	04/02/2021	04/05/21 15:20	
Surrogate: Nitrobenzene-d5	36.4 %	15 - 121		B1D0046	04/02/2021	04/05/21 15:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: POX

Lab ID: 2100809-04

Alkalinity, Speciated by SM 2320B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	220	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	
Alkalinity, Total (as CaCO ₃)	220	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	

Total Organic Carbon by SM 5310B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1D0129	04/07/2021	04/07/21 19:52	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,1,1-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,1,2-Trichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,1-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,1-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,1-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2,3-Trichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2-Dibromoethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2-Dichloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,3-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,3-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
1,4-Dichlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
2,2-Dichloropropane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
2-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: POX

Lab ID: 2100809-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
4-Isopropyltoluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Benzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Bromobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Bromodichloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Bromoform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Bromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Carbon tetrachloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Chlorobenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Chloroethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Chloroform	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Chloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Dibromochloromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Dibromomethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Dichlorodifluoromethane	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Ethylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Hexachlorobutadiene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Isopropylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
m,p-Xylene	ND	1.0	1	B1D0022	04/02/2021	04/02/21 18:41	
Methylene chloride	ND	1.0	1	B1D0022	04/02/2021	04/02/21 18:41	
n-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
n-Propylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Naphthalene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
o-Xylene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
sec-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Styrene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
tert-Butylbenzene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Tetrachloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Toluene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Trichloroethene	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Trichlorofluoromethane	1.0	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	
Vinyl chloride	ND	0.50	1	B1D0022	04/02/2021	04/02/21 18:41	

Surrogate: 1,2-Dichloroethane-d4

96.0 %

64 - 155

B1D0022

04/02/2021

04/02/21 18:41

Surrogate: 4-Bromofluorobenzene

93.9 %

73 - 124

B1D0022

04/02/2021

04/02/21 18:41



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: POX

Lab ID: 2100809-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Dibromofluoromethane</i>	99.5 %	78 - 129		B1D0022	04/02/2021	04/02/21 18:41	
<i>Surrogate: Toluene-d8</i>	98.0 %	84 - 117		B1D0022	04/02/2021	04/02/21 18:41	

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1D0046	04/02/2021	04/05/21 15:47	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61.4 %	13 - 99		B1D0046	04/02/2021	04/05/21 15:47	
<i>Surrogate: 2-Fluorobiphenyl</i>	70.9 %	8 - 111		B1D0046	04/02/2021	04/05/21 15:47	
<i>Surrogate: 4-Terphenyl-d14</i>	67.6 %	12 - 113		B1D0046	04/02/2021	04/05/21 15:47	
<i>Surrogate: Nitrobenzene-d5</i>	63.0 %	15 - 121		B1D0046	04/02/2021	04/05/21 15:47	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: PF

Lab ID: 2100809-05

UV Absorption by EPA 415.3

Analyst: AH

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B1D0047	04/02/2021	04/02/21 20:07	

Alkalinity, Speciated by SM 2320B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	220	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	
Alkalinity, Total (as CaCO ₃)	220	5.0	1	B1D0133	04/07/2021	04/07/21 18:38	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: AEG

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	2.0	1	B1D0069	04/05/2021	04/06/21 16:00	

Total Organic Carbon by SM 5310B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1D0129	04/07/2021	04/07/21 20:12	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: INF

Lab ID: 2100809-06

Bromide by Ion Chromatography EPA 300

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	ND	0.05	1	B1D0130	04/07/2021	04/07/21 18:22	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,1,1-Trichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,1,2-Trichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,1-Dichloroethane	0.52	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,1-Dichloroethene	53	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,1-Dichloropropene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2,3-Trichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2-Dibromoethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2-Dichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,2-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,3-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,3-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
1,4-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
2,2-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
2-Chlorotoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
4-Chlorotoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
4-Isopropyltoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Benzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Bromobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Bromodichloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Bromoform	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Bromomethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Carbon tetrachloride	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Chlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: INF

Lab ID: 2100809-06

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Chloroform	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Chloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Dibromochloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Dibromomethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Dichlorodifluoromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Ethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Hexachlorobutadiene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Isopropylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
m,p-Xylene	ND	1.0	1	B1D0081	04/06/2021	04/06/21 16:19	
Methylene chloride	ND	1.0	1	B1D0081	04/06/2021	04/06/21 16:19	
n-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
n-Propylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Naphthalene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
o-Xylene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
sec-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Styrene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
tert-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Tetrachloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Toluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Trichloroethene	0.63	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Trichlorofluoromethane	1.1	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
Vinyl chloride	ND	0.50	1	B1D0081	04/06/2021	04/06/21 16:19	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.6 %</i>	<i>64 - 155</i>		B1D0081	04/06/2021	<i>04/06/21 16:19</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.2 %</i>	<i>73 - 124</i>		B1D0081	04/06/2021	<i>04/06/21 16:19</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.2 %</i>	<i>78 - 129</i>		B1D0081	04/06/2021	<i>04/06/21 16:19</i>	
<i>Surrogate: Toluene-d8</i>	<i>88.5 %</i>	<i>84 - 117</i>		B1D0081	04/06/2021	<i>04/06/21 16:19</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: INF

Lab ID: 2100809-06

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	32	2.0	1	B1D0074	04/05/2021	04/06/21 14:21	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>56.7 %</i>	<i>17 - 119</i>		B1D0074	04/05/2021	<i>04/06/21 14:21</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>59.4 %</i>	<i>10 - 133</i>		B1D0074	04/05/2021	<i>04/06/21 14:21</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>64.4 %</i>	<i>5 - 139</i>		B1D0074	04/05/2021	<i>04/06/21 14:21</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>52.2 %</i>	<i>13 - 150</i>		B1D0074	04/05/2021	<i>04/06/21 14:21</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: EW-02

Lab ID: 2100809-07

Bromide by Ion Chromatography EPA 300

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	ND	0.05	1	B1D0130	04/07/2021	04/07/21 18:33	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,1,1-Trichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,1,2-Trichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,1-Dichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,1-Dichloroethene	14	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,1-Dichloropropene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2,3-Trichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2-Dibromoethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2-Dichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,2-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,3-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,3-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
1,4-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
2,2-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
2-Chlorotoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
4-Chlorotoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
4-Isopropyltoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Benzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Bromobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Bromodichloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Bromoform	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Bromomethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Carbon tetrachloride	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Chlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: EW-02

Lab ID: 2100809-07

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Chloroform	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Chloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Dibromochloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Dibromomethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Dichlorodifluoromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Ethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Hexachlorobutadiene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Isopropylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
m,p-Xylene	ND	1.0	1	B1D0081	04/06/2021	04/06/21 15:54	
Methylene chloride	ND	1.0	1	B1D0081	04/06/2021	04/06/21 15:54	
n-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
n-Propylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Naphthalene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
o-Xylene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
sec-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Styrene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
tert-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Tetrachloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Toluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Trichloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Trichlorofluoromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
Vinyl chloride	ND	0.50	1	B1D0081	04/06/2021	04/06/21 15:54	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.4 %</i>	<i>64 - 155</i>		B1D0081	04/06/2021	<i>04/06/21 15:54</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.8 %</i>	<i>73 - 124</i>		B1D0081	04/06/2021	<i>04/06/21 15:54</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.0 %</i>	<i>78 - 129</i>		B1D0081	04/06/2021	<i>04/06/21 15:54</i>	
<i>Surrogate: Toluene-d8</i>	<i>89.6 %</i>	<i>84 - 117</i>		B1D0081	04/06/2021	<i>04/06/21 15:54</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: EW-02

Lab ID: 2100809-07

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	6.7	2.0	1	B1D0074	04/05/2021	04/06/21 14:47	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>55.4 %</i>	<i>17 - 119</i>		<i>B1D0074</i>	<i>04/05/2021</i>	<i>04/06/21 14:47</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>53.2 %</i>	<i>10 - 133</i>		<i>B1D0074</i>	<i>04/05/2021</i>	<i>04/06/21 14:47</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>63.6 %</i>	<i>5 - 139</i>		<i>B1D0074</i>	<i>04/05/2021</i>	<i>04/06/21 14:47</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>52.7 %</i>	<i>13 - 150</i>		<i>B1D0074</i>	<i>04/05/2021</i>	<i>04/06/21 14:47</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: MW-29

Lab ID: 2100809-08

Bromide by Ion Chromatography EPA 300

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	ND	0.05	1	B1D0130	04/07/2021	04/07/21 18:45	

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,1,1-Trichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,1,2-Trichloroethane	0.61	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,1-Dichloroethane	1.4	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,1-Dichloroethene	190	25	50	B1D0081	04/06/2021	04/06/21 16:43	
1,1-Dichloropropene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2,3-Trichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2-Dibromoethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2-Dichloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,2-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,3-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,3-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
1,4-Dichlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
2,2-Dichloropropane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
2-Chlorotoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
4-Chlorotoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
4-Isopropyltoluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Benzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Bromobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Bromodichloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Bromoform	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Bromomethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Carbon tetrachloride	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Chlorobenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: MW-29

Lab ID: 2100809-08

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Chloroform	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Chloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Dibromochloromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Dibromomethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Dichlorodifluoromethane	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Ethylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Hexachlorobutadiene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Isopropylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
m,p-Xylene	ND	1.0	1	B1D0081	04/06/2021	04/06/21 17:08	
Methylene chloride	ND	1.0	1	B1D0081	04/06/2021	04/06/21 17:08	
n-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
n-Propylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Naphthalene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
o-Xylene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
sec-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Styrene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
tert-Butylbenzene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Tetrachloroethene	0.65	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Toluene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Trichloroethene	1.9	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Trichlorofluoromethane	1.7	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
Vinyl chloride	ND	0.50	1	B1D0081	04/06/2021	04/06/21 17:08	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.2 %</i>	<i>64 - 155</i>		B1D0081	04/06/2021	<i>04/06/21 17:08</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.2 %</i>	<i>64 - 155</i>		B1D0081	04/06/2021	<i>04/06/21 16:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.1 %</i>	<i>73 - 124</i>		B1D0081	04/06/2021	<i>04/06/21 16:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.7 %</i>	<i>73 - 124</i>		B1D0081	04/06/2021	<i>04/06/21 17:08</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.7 %</i>	<i>78 - 129</i>		B1D0081	04/06/2021	<i>04/06/21 17:08</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.8 %</i>	<i>78 - 129</i>		B1D0081	04/06/2021	<i>04/06/21 16:43</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.6 %</i>	<i>84 - 117</i>		B1D0081	04/06/2021	<i>04/06/21 17:08</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.0 %</i>	<i>84 - 117</i>		B1D0081	04/06/2021	<i>04/06/21 16:43</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Client Sample ID: MW-29

Lab ID: 2100809-08

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	120	2.0	1	B1D0074	04/05/2021	04/06/21 15:13	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>52.3 %</i>	<i>17 - 119</i>		B1D0074	04/05/2021	<i>04/06/21 15:13</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>60.3 %</i>	<i>10 - 133</i>		B1D0074	04/05/2021	<i>04/06/21 15:13</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>66.6 %</i>	<i>5 - 139</i>		B1D0074	04/05/2021	<i>04/06/21 15:13</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>50.9 %</i>	<i>13 - 150</i>		B1D0074	04/05/2021	<i>04/06/21 15:13</i>	



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QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

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

Batch B1D0133 - No_Prep_WC1_W

Blank (B1D0133-BLK1)

Prepared: 4/7/2021 Analyzed: 4/7/2021

Alkalinity, Bicarbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Total (as CaCO ₃)	ND	5.0	3.4

LCS (B1D0133-BS1)

Prepared: 4/7/2021 Analyzed: 4/7/2021

Alkalinity, Total (as CaCO ₃)	103.880	5.0	3.4	99.9580	104	80 - 120

Matrix Spike (B1D0133-MS1)

Source: 2100809-05

Prepared: 4/7/2021 Analyzed: 4/7/2021

Alkalinity, Total (as CaCO ₃)	321.340	5.0	3.4	99.9580	220.690	101	80 - 120

Matrix Spike Dup (B1D0133-MSD1)

Source: 2100809-05

Prepared: 4/7/2021 Analyzed: 4/7/2021

Alkalinity, Total (as CaCO ₃)	320.260	5.0	3.4	99.9580	220.690	99.6	80 - 120	0.337	20



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0069 - No_Prep_WC1_W

Blank (B1D0069-BLK1)

Prepared: 4/5/2021 Analyzed: 4/6/2021

Residue, Suspended ND 1.0 1.0

LCS (B1D0069-BS1)

Prepared: 4/5/2021 Analyzed: 4/6/2021

Residue, Suspended 90.0000 10 10 100.000 90.0 80 - 120

Duplicate (B1D0069-DUP1)

Source: 2100821-01

Prepared: 4/5/2021 Analyzed: 4/6/2021

Residue, Suspended 223.333 33 33 66.0000 109 10



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Bromide by Ion Chromatography EPA 300 - Quality Control

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

Batch B1D0130 - No_Prep_IC1_W

Blank (B1D0130-BLK1)

Prepared: 4/7/2021 Analyzed: 4/7/2021

Bromide	ND	0.05	0.02

LCS (B1D0130-BS1)

Prepared: 4/7/2021 Analyzed: 4/7/2021

Bromide	0.977100	0.05	0.02	1.00000	97.7	90 - 110

Duplicate (B1D0130-DUP1)

Source: 2100847-01

Prepared: 4/7/2021 Analyzed: 4/7/2021

Bromide	ND	0.05	0.02	ND	NR	20

Matrix Spike (B1D0130-MS1)

Source: 2100847-01

Prepared: 4/7/2021 Analyzed: 4/7/2021

Bromide	3.81600	0.05	0.02	2.50000	ND	153	80 - 120	M7

Matrix Spike Dup (B1D0130-MSD1)

Source: 2100847-01

Prepared: 4/7/2021 Analyzed: 4/7/2021

Bromide	3.84550	0.05	0.02	2.50000	ND	154	80 - 120	0.770	20	M7



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Project Number : Raytheon Main GETS Monthly Sample, 5

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UV Absorption by EPA 415.3 - Quality Control

Analyte	Result (1/cm)	PQL (1/cm)	MDL (1/cm)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B1D0047 - No_Prep_II_W

Blank (B1D0047-BLK1)

Prepared: 4/2/2021 Analyzed: 4/2/2021

UV Absorption ND 0.01 0.01

Duplicate (B1D0047-DUP1)

Source: 2100809-05

Prepared: 4/2/2021 Analyzed: 4/2/2021

UV Absorption ND 0.01 0.01 ND NR 20



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Total Organic Carbon by SM 5310B - Quality Control

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

Batch B1D0129 - No_Prep_II_W

Blank (B1D0129-BLK1)

Prepared: 4/7/2021 Analyzed: 4/7/2021

Organic Carbon, Total ND 3.0 1.3

LCS (B1D0129-BS1)

Prepared: 4/7/2021 Analyzed: 4/7/2021

Organic Carbon, Total 23.2600 3.0 1.3 25.0000 93.0 80 - 120

LCS Dup (B1D0129-BSD1)

Prepared: 4/7/2021 Analyzed: 4/7/2021

Organic Carbon, Total 22.9400 3.0 1.3 25.0000 91.8 80 - 120 1.39 20

Duplicate (B1D0129-DUP1)

Source: 2100809-05

Prepared: 4/7/2021 Analyzed: 4/7/2021

Organic Carbon, Total ND 3.0 1.3 ND NR 20



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

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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 B1D0022 - MSVOA_LL_W

Blank (B1D0022-BLK1)

Prepared: 4/2/2021 Analyzed: 4/2/2021

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



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0022 - MSVOA_LL_W (continued)

Blank (B1D0022-BLK1) - Continued

Prepared: 4/2/2021 Analyzed: 4/2/2021

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	24.62		25.0000	98.5	64 - 155
Surrogate: 4-Bromofluorobenzene	23.93		25.0000	95.7	73 - 124
Surrogate: Dibromofluoromethane	25.21		25.0000	101	78 - 129
Surrogate: Toluene-d8	24.48		25.0000	97.9	84 - 117

LCS (B1D0022-BS1)

Prepared: 4/2/2021 Analyzed: 4/2/2021

1,1,1,2-Tetrachloroethane	18.8200	0.50	0.11	20.0000	94.1	79 - 116
1,1,1-Trichloroethane	19.8300	0.50	0.21	20.0000	99.2	73 - 130
1,1,2,2-Tetrachloroethane	20.2600	0.50	0.36	20.0000	101	71 - 122
1,1,2-Trichloroethane	18.6900	0.50	0.25	20.0000	93.4	70 - 124
1,1-Dichloroethane	19.0600	0.50	0.09	20.0000	95.3	69 - 128
1,1-Dichloroethene	19.1700	0.50	0.13	20.0000	95.8	65 - 137
1,1-Dichloropropene	22.4800	0.50	0.13	20.0000	112	74 - 129
1,2,3-Trichloropropane	20.8700	0.50	0.39	20.0000	104	74 - 123
1,2,3-Trichlorobenzene	20.5800	0.50	0.18	20.0000	103	59 - 130
1,2,4-Trichlorobenzene	20.4000	0.50	0.16	20.0000	102	65 - 125
1,2,4-Trimethylbenzene	18.9300	0.50	0.14	20.0000	94.6	88 - 124
1,2-Dibromo-3-chloropropane	17.7800	0.50	0.41	20.0000	88.9	61 - 127
1,2-Dibromoethane	19.3200	0.50	0.24	20.0000	96.6	72 - 125
1,2-Dichlorobenzene	19.6600	0.50	0.20	20.0000	98.3	84 - 113
1,2-Dichloroethane	19.5900	0.50	0.20	20.0000	98.0	68 - 130
1,2-Dichloropropane	19.5700	0.50	0.15	20.0000	97.8	77 - 121
1,3,5-Trimethylbenzene	19.1500	0.50	0.13	20.0000	95.8	83 - 124
1,3-Dichlorobenzene	19.7000	0.50	0.16	20.0000	98.5	83 - 112
1,3-Dichloropropane	19.6800	0.50	0.21	20.0000	98.4	77 - 119



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0022 - MSVOA_LL_W (continued)

LCS (B1D0022-BS1) - Continued

Prepared: 4/2/2021 Analyzed: 4/2/2021

1,4-Dichlorobenzene	18.9500	0.50	0.17	20.0000		94.8	79 - 115		
2,2-Dichloropropane	20.8000	0.50	0.38	20.0000		104	67 - 149		
2-Chlorotoluene	19.3400	0.50	0.11	20.0000		96.7	81 - 119		
4-Chlorotoluene	18.9200	0.50	0.12	20.0000		94.6	86 - 117		
4-Isopropyltoluene	19.3100	0.50	0.11	20.0000		96.6	82 - 131		
Benzene	20.0900	0.50	0.13	20.0000		100	75 - 124		
Bromobenzene	19.0600	0.50	0.21	20.0000		95.3	82 - 108		
Bromodichloromethane	18.5900	0.50	0.14	20.0000		93.0	80 - 120		
Bromoform	17.0800	0.50	0.20	20.0000		85.4	70 - 123		
Bromomethane	26.8700	0.50	0.40	20.0000		134	44 - 151		
Carbon tetrachloride	20.7800	0.50	0.09	20.0000		104	62 - 140		
Chlorobenzene	19.3600	0.50	0.13	20.0000		96.8	80 - 112		
Chloroethane	19.3700	0.50	0.15	20.0000		96.8	42 - 167		
Chloroform	18.9400	0.50	0.11	20.0000		94.7	77 - 122		
Chloromethane	17.6500	0.50	0.12	20.0000		88.2	33 - 153		
cis-1,2-Dichloroethene	19.4000	0.50	0.14	20.0000		97.0	75 - 121		
cis-1,3-Dichloropropene	18.8600	0.50	0.13	20.0000		94.3	73 - 127		
Dibromochloromethane	18.1800	0.50	0.16	20.0000		90.9	77 - 122		
Dibromomethane	18.1100	0.50	0.19	20.0000		90.6	75 - 121		
Dichlorodifluoromethane	20.0700	0.50	0.18	20.0000		100	0 - 171		
Ethylbenzene	19.9200	0.50	0.13	20.0000		99.6	82 - 119		
Hexachlorobutadiene	21.0500	0.50	0.15	20.0000		105	71 - 131		
Isopropylbenzene	19.7300	0.50	0.10	20.0000		98.6	75 - 126		
m,p-Xylene	40.0900	1.0	0.19	40.0000		100	86 - 119		
Methylene chloride	20.2400	1.0	0.71	20.0000		101	76 - 125		
n-Butylbenzene	19.2200	0.50	0.11	20.0000		96.1	81 - 125		
n-Propylbenzene	19.9600	0.50	0.10	20.0000		99.8	78 - 130		
Naphthalene	19.2600	0.50	0.41	20.0000		96.3	47 - 128		
o-Xylene	19.5000	0.50	0.13	20.0000		97.5	85 - 119		
sec-Butylbenzene	20.0200	0.50	0.09	20.0000		100	78 - 130		
Styrene	19.9400	0.50	0.13	20.0000		99.7	62 - 148		
tert-Butylbenzene	19.7000	0.50	0.09	20.0000		98.5	77 - 125		
Tetrachloroethene	20.8600	0.50	0.10	20.0000		104	73 - 120		
Toluene	19.4000	0.50	0.12	20.0000		97.0	79 - 119		
trans-1,2-Dichloroethene	19.8100	0.50	0.09	20.0000		99.0	70 - 129		
Trichloroethene	19.5200	0.50	0.10	20.0000		97.6	73 - 117		
Trichlorofluoromethane	21.4000	0.50	0.23	20.0000		107	59 - 135		
Vinyl chloride	19.7100	0.50	0.13	20.0000		98.6	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	24.45			25.0000		97.8	64 - 155		
Surrogate: 4-Bromofluorobenzene	24.38			25.0000		97.5	73 - 124		
Surrogate: Dibromofluoromethane	24.48			25.0000		97.9	78 - 129		



Certificate of Analysis

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Report To : Steve Netto

Reported : 04/21/2021

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

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

Batch B1D0022 - MSVOA_LL_W (continued)

LCS (B1D0022-BS1) - Continued

Prepared: 4/2/2021 Analyzed: 4/2/2021

Surrogate: Toluene-d8 24.87 25.0000 99.5 84 - 117

LCS Dup (B1D0022-BS1)

Prepared: 4/2/2021 Analyzed: 4/2/2021

1,1,1,2-Tetrachloroethane	14.8000	0.50	0.11	20.0000	74.0	79 - 116	23.9	20	L3, R
1,1,1-Trichloroethane	15.1200	0.50	0.21	20.0000	75.6	73 - 130	27.0	20	R
1,1,2,2-Tetrachloroethane	16.5600	0.50	0.36	20.0000	82.8	71 - 122	20.1	20	R
1,1,2-Trichloroethane	15.1500	0.50	0.25	20.0000	75.8	70 - 124	20.9	20	R
1,1-Dichloroethane	15.2600	0.50	0.09	20.0000	76.3	69 - 128	22.1	20	R
1,1-Dichloroethene	14.7100	0.50	0.13	20.0000	73.6	65 - 137	26.3	20	R
1,1-Dichloropropene	17.2700	0.50	0.13	20.0000	86.4	74 - 129	26.2	20	R
1,2,3-Trichloropropane	16.3700	0.50	0.39	20.0000	81.8	74 - 123	24.2	20	R
1,2,3-Trichlorobenzene	17.5300	0.50	0.18	20.0000	87.6	59 - 130	16.0	20	
1,2,4-Trichlorobenzene	17.0700	0.50	0.16	20.0000	85.4	65 - 125	17.8	20	
1,2,4-Trimethylbenzene	15.7400	0.50	0.14	20.0000	78.7	88 - 124	18.4	20	L3
1,2-Dibromo-3-chloropropane	14.5300	0.50	0.41	20.0000	72.6	61 - 127	20.1	20	R
1,2-Dibromoethane	15.9300	0.50	0.24	20.0000	79.6	72 - 125	19.2	20	
1,2-Dichlorobenzene	16.1400	0.50	0.20	20.0000	80.7	84 - 113	19.7	20	L3
1,2-Dichloroethane	16.3500	0.50	0.20	20.0000	81.8	68 - 130	18.0	20	
1,2-Dichloropropane	15.9100	0.50	0.15	20.0000	79.6	77 - 121	20.6	20	R
1,3,5-Trimethylbenzene	15.6300	0.50	0.13	20.0000	78.2	83 - 124	20.2	20	L3, R
1,3-Dichlorobenzene	16.5200	0.50	0.16	20.0000	82.6	83 - 112	17.6	20	L3
1,3-Dichloropropane	16.0700	0.50	0.21	20.0000	80.4	77 - 119	20.2	20	R
1,4-Dichlorobenzene	15.7400	0.50	0.17	20.0000	78.7	79 - 115	18.5	20	L3
2,2-Dichloropropane	16.8800	0.50	0.38	20.0000	84.4	67 - 149	20.8	20	R
2-Chlorotoluene	15.9500	0.50	0.11	20.0000	79.8	81 - 119	19.2	20	L3
4-Chlorotoluene	15.6900	0.50	0.12	20.0000	78.4	86 - 117	18.7	20	L3
4-Isopropyltoluene	16.0100	0.50	0.11	20.0000	80.0	82 - 131	18.7	20	L3
Benzene	16.0200	0.50	0.13	20.0000	80.1	75 - 124	22.5	20	R
Bromobenzene	15.6500	0.50	0.21	20.0000	78.2	82 - 108	19.6	20	L3
Bromodichloromethane	15.0200	0.50	0.14	20.0000	75.1	80 - 120	21.2	20	L3, R
Bromoform	13.6300	0.50	0.20	20.0000	68.2	70 - 123	22.5	20	L3, R
Bromomethane	20.3700	0.50	0.40	20.0000	102	44 - 151	27.5	20	R
Carbon tetrachloride	15.5200	0.50	0.09	20.0000	77.6	62 - 140	29.0	20	R
Chlorobenzene	15.7600	0.50	0.13	20.0000	78.8	80 - 112	20.5	20	L3, R
Chloroethane	15.7000	0.50	0.15	20.0000	78.5	42 - 167	20.9	20	R
Chloroform	15.5200	0.50	0.11	20.0000	77.6	77 - 122	19.8	20	
Chloromethane	13.8000	0.50	0.12	20.0000	69.0	33 - 153	24.5	20	R
cis-1,2-Dichloroethene	15.3400	0.50	0.14	20.0000	76.7	75 - 121	23.4	20	R
cis-1,3-Dichloropropene	14.9500	0.50	0.13	20.0000	74.8	73 - 127	23.1	20	R
Dibromochloromethane	14.7600	0.50	0.16	20.0000	73.8	77 - 122	20.8	20	L3, R
Dibromomethane	14.8800	0.50	0.19	20.0000	74.4	75 - 121	19.6	20	L3
Dichlorodifluoromethane	15.2500	0.50	0.18	20.0000	76.2	0 - 171	27.3	20	R



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1D0022 - MSVOA_LL_W (continued)

LCS Dup (B1D0022-BSD1) - Continued

Prepared: 4/2/2021 Analyzed: 4/2/2021

Ethylbenzene	16.3100	0.50	0.13	20.0000		81.6	82 - 119	19.9	20	L3
Hexachlorobutadiene	16.8400	0.50	0.15	20.0000		84.2	71 - 131	22.2	20	R
Isopropylbenzene	15.8700	0.50	0.10	20.0000		79.4	75 - 126	21.7	20	R
m,p-Xylene	32.9100	1.0	0.19	40.0000		82.3	86 - 119	19.7	20	L3
Methylene chloride	16.0600	1.0	0.71	20.0000		80.3	76 - 125	23.0	20	R
n-Butylbenzene	15.8400	0.50	0.11	20.0000		79.2	81 - 125	19.3	20	L3
n-Propylbenzene	16.2400	0.50	0.10	20.0000		81.2	78 - 130	20.6	20	R
Naphthalene	16.2600	0.50	0.41	20.0000		81.3	47 - 128	16.9	20	
o-Xylene	16.0200	0.50	0.13	20.0000		80.1	85 - 119	19.6	20	L3
sec-Butylbenzene	16.1300	0.50	0.09	20.0000		80.6	78 - 130	21.5	20	R
Styrene	16.5000	0.50	0.13	20.0000		82.5	62 - 148	18.9	20	
tert-Butylbenzene	15.8900	0.50	0.09	20.0000		79.4	77 - 125	21.4	20	R
Tetrachloroethene	16.6600	0.50	0.10	20.0000		83.3	73 - 120	22.4	20	R
Toluene	15.4300	0.50	0.12	20.0000		77.2	79 - 119	22.8	20	R, L3
trans-1,2-Dichloroethene	15.5900	0.50	0.09	20.0000		78.0	70 - 129	23.8	20	R
Trichloroethene	15.6000	0.50	0.10	20.0000		78.0	73 - 117	22.3	20	R
Trichlorofluoromethane	16.2000	0.50	0.23	20.0000		81.0	59 - 135	27.7	20	R
Vinyl chloride	15.0400	0.50	0.13	20.0000		75.2	58 - 132	26.9	20	R
Surrogate: 1,2-Dichloroethane-d4	23.86			25.0000		95.4	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.63			25.0000		98.5	73 - 124			
Surrogate: Dibromofluoromethane	25.35			25.0000		101	78 - 129			
Surrogate: Toluene-d8	24.81			25.0000		99.2	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B1D0081 - MSVOA_LL_W

Blank (B1D0081-BLK1)

Prepared: 4/6/2021 Analyzed: 4/6/2021

Surrogate: 1,2-Dichloroethane-d4	25.22		25.0000		101	64 - 155
Surrogate: 4-Bromofluorobenzene	24.97		25.0000		99.9	73 - 124
Surrogate: Dibromofluoromethane	24.82		25.0000		99.3	78 - 129
Surrogate: Toluene-d8	25.02		25.0000		100	84 - 117

Blank (B1D0081-BLK2)

Prepared: 4/6/2021 Analyzed: 4/6/2021

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0081 - MSVOA_LL_W (continued)

Blank (B1D0081-BLK2) - Continued

Prepared: 4/6/2021 Analyzed: 4/6/2021

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
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	24.70		25.0000	98.8	64 - 155
Surrogate: 4-Bromofluorobenzene	23.41		25.0000	93.6	73 - 124
Surrogate: Dibromofluoromethane	24.63		25.0000	98.5	78 - 129
Surrogate: Toluene-d8	24.07		25.0000	96.3	84 - 117

LCS (B1D0081-BS1)

Prepared: 4/6/2021 Analyzed: 4/6/2021

Surrogate: 1,2-Dichloroethane-d4	24.75		25.0000	99.0	64 - 155
Surrogate: 4-Bromofluorobenzene	24.55		25.0000	98.2	73 - 124
Surrogate: Dibromofluoromethane	24.94		25.0000	99.8	78 - 129
Surrogate: Toluene-d8	25.15		25.0000	101	84 - 117

LCS (B1D0081-BS2)

Prepared: 4/6/2021 Analyzed: 4/6/2021

1,1,1,2-Tetrachloroethane	17.8800	0.50	0.11	20.0000	89.4	79 - 116
1,1,1-Trichloroethane	18.6500	0.50	0.21	20.0000	93.2	73 - 130
1,1,2,2-Tetrachloroethane	19.1200	0.50	0.36	20.0000	95.6	71 - 122
1,1,2-Trichloroethane	17.9900	0.50	0.25	20.0000	90.0	70 - 124
1,1-Dichloroethane	18.5300	0.50	0.09	20.0000	92.6	69 - 128
1,1-Dichloroethene	18.5200	0.50	0.13	20.0000	92.6	65 - 137
1,1-Dichloropropene	21.9900	0.50	0.13	20.0000	110	74 - 129



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0081 - MSVOA_LL_W (continued)

LCS (B1D0081-BS2) - Continued

Prepared: 4/6/2021 Analyzed: 4/6/2021

1,2,3-Trichloropropane	18.6900	0.50	0.39	20.0000		93.4	74 - 123		
1,2,3-Trichlorobenzene	20.3100	0.50	0.18	20.0000		102	59 - 130		
1,2,4-Trichlorobenzene	19.6900	0.50	0.16	20.0000		98.4	65 - 125		
1,2,4-Trimethylbenzene	17.3300	0.50	0.14	20.0000		86.6	88 - 124		L3
1,2-Dibromo-3-chloropropane	16.2900	0.50	0.41	20.0000		81.4	61 - 127		
1,2-Dibromoethane	18.6900	0.50	0.24	20.0000		93.4	72 - 125		
1,2-Dichlorobenzene	18.3400	0.50	0.20	20.0000		91.7	84 - 113		
1,2-Dichloroethane	19.7700	0.50	0.20	20.0000		98.8	68 - 130		
1,2-Dichloropropane	18.9500	0.50	0.15	20.0000		94.8	77 - 121		
1,3,5-Trimethylbenzene	17.9900	0.50	0.13	20.0000		90.0	83 - 124		
1,3-Dichlorobenzene	18.9000	0.50	0.16	20.0000		94.5	83 - 112		
1,3-Dichloropropane	18.5300	0.50	0.21	20.0000		92.6	77 - 119		
1,4-Dichlorobenzene	18.1300	0.50	0.17	20.0000		90.6	79 - 115		
2,2-Dichloropropane	17.8000	0.50	0.38	20.0000		89.0	67 - 149		
2-Chlorotoluene	18.3400	0.50	0.11	20.0000		91.7	81 - 119		
4-Chlorotoluene	17.8600	0.50	0.12	20.0000		89.3	86 - 117		
4-Isopropyltoluene	17.5300	0.50	0.11	20.0000		87.6	82 - 131		
Benzene	20.1500	0.50	0.13	20.0000		101	75 - 124		
Bromobenzene	17.9000	0.50	0.21	20.0000		89.5	82 - 108		
Bromodichloromethane	18.0100	0.50	0.14	20.0000		90.0	80 - 120		
Bromoform	14.9700	0.50	0.20	20.0000		74.8	70 - 123		
Bromomethane	34.3100	0.50	0.40	20.0000		172	44 - 151		L5
Carbon tetrachloride	19.9300	0.50	0.09	20.0000		99.6	62 - 140		
Chlorobenzene	19.0200	0.50	0.13	20.0000		95.1	80 - 112		
Chloroethane	21.6300	0.50	0.15	20.0000		108	42 - 167		
Chloroform	18.8600	0.50	0.11	20.0000		94.3	77 - 122		
Chloromethane	18.4400	0.50	0.12	20.0000		92.2	33 - 153		
cis-1,2-Dichloroethene	18.8800	0.50	0.14	20.0000		94.4	75 - 121		
cis-1,3-Dichloropropene	16.2400	0.50	0.13	20.0000		81.2	73 - 127		
Dibromochloromethane	17.0500	0.50	0.16	20.0000		85.2	77 - 122		
Dibromomethane	17.8600	0.50	0.19	20.0000		89.3	75 - 121		
Dichlorodifluoromethane	35.7300	0.50	0.18	20.0000		179	0 - 171		L4
Ethylbenzene	19.6500	0.50	0.13	20.0000		98.2	82 - 119		
Hexachlorobutadiene	20.7300	0.50	0.15	20.0000		104	71 - 131		
Isopropylbenzene	18.6500	0.50	0.10	20.0000		93.2	75 - 126		
m,p-Xylene	38.8500	1.0	0.19	40.0000		97.1	86 - 119		
Methylene chloride	19.3300	1.0	0.71	20.0000		96.6	76 - 125		
n-Butylbenzene	17.2500	0.50	0.11	20.0000		86.2	81 - 125		
n-Propylbenzene	18.7800	0.50	0.10	20.0000		93.9	78 - 130		
Naphthalene	17.9700	0.50	0.41	20.0000		89.8	47 - 128		
o-Xylene	18.9100	0.50	0.13	20.0000		94.6	85 - 119		
sec-Butylbenzene	18.7600	0.50	0.09	20.0000		93.8	78 - 130		



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0081 - MSVOA_LL_W (continued)

LCS (B1D0081-BS2) - Continued

Prepared: 4/6/2021 Analyzed: 4/6/2021

Styrene	19.4700	0.50	0.13	20.0000		97.4	62 - 148		
tert-Butylbenzene	18.6000	0.50	0.09	20.0000		93.0	77 - 125		
Tetrachloroethene	20.3900	0.50	0.10	20.0000		102	73 - 120		
Toluene	19.1000	0.50	0.12	20.0000		95.5	79 - 119		
trans-1,2-Dichloroethene	19.1500	0.50	0.09	20.0000		95.8	70 - 129		
Trichloroethene	19.5100	0.50	0.10	20.0000		97.6	73 - 117		
Trichlorofluoromethane	23.4800	0.50	0.23	20.0000		117	59 - 135		
Vinyl chloride	23.9000	0.50	0.13	20.0000		120	58 - 132		

Surrogate: 1,2-Dichloroethane-d4

24.29

25.0000

97.2

64 - 155

Surrogate: 4-Bromofluorobenzene

23.85

25.0000

95.4

73 - 124

Surrogate: Dibromofluoromethane

25.17

25.0000

101

78 - 129

Surrogate: Toluene-d8

24.70

25.0000

98.8

84 - 117

LCS Dup (B1D0081-BSD1)

Prepared: 4/6/2021 Analyzed: 4/6/2021

Surrogate: 1,2-Dichloroethane-d4	24.75			25.0000		99.0	64 - 155		
Surrogate: 4-Bromofluorobenzene	25.07			25.0000		100	73 - 124		
Surrogate: Dibromofluoromethane	25.32			25.0000		101	78 - 129		
Surrogate: Toluene-d8	25.03			25.0000		100	84 - 117		

LCS Dup (B1D0081-BSD2)

Prepared: 4/6/2021 Analyzed: 4/6/2021

1,1,1,2-Tetrachloroethane	17.5800	0.50	0.11	20.0000		87.9	79 - 116	1.69	20
1,1,1-Trichloroethane	18.2500	0.50	0.21	20.0000		91.2	73 - 130	2.17	20
1,1,2,2-Tetrachloroethane	19.3300	0.50	0.36	20.0000		96.6	71 - 122	1.09	20
1,1,2-Trichloroethane	18.1100	0.50	0.25	20.0000		90.6	70 - 124	0.665	20
1,1-Dichloroethane	17.8600	0.50	0.09	20.0000		89.3	69 - 128	3.68	20
1,1-Dichloroethene	17.9200	0.50	0.13	20.0000		89.6	65 - 137	3.29	20
1,1-Dichloropropene	20.9400	0.50	0.13	20.0000		105	74 - 129	4.89	20
1,2,3-Trichloropropane	19.1800	0.50	0.39	20.0000		95.9	74 - 123	2.59	20
1,2,3-Trichlorobenzene	19.9800	0.50	0.18	20.0000		99.9	59 - 130	1.64	20
1,2,4-Trichlorobenzene	19.6800	0.50	0.16	20.0000		98.4	65 - 125	0.0508	20
1,2,4-Trimethylbenzene	17.4000	0.50	0.14	20.0000		87.0	88 - 124	0.403	20
1,2-Dibromo-3-chloropropane	16.2100	0.50	0.41	20.0000		81.0	61 - 127	0.492	20
1,2-Dibromoethane	18.4900	0.50	0.24	20.0000		92.4	72 - 125	1.08	20
1,2-Dichlorobenzene	18.6400	0.50	0.20	20.0000		93.2	84 - 113	1.62	20
1,2-Dichloroethane	19.8300	0.50	0.20	20.0000		99.2	68 - 130	0.303	20
1,2-Dichloropropane	18.6500	0.50	0.15	20.0000		93.2	77 - 121	1.60	20
1,3,5-Trimethylbenzene	17.6100	0.50	0.13	20.0000		88.0	83 - 124	2.13	20
1,3-Dichlorobenzene	18.9300	0.50	0.16	20.0000		94.6	83 - 112	0.159	20
1,3-Dichloropropane	18.4500	0.50	0.21	20.0000		92.2	77 - 119	0.433	20
1,4-Dichlorobenzene	18.3200	0.50	0.17	20.0000		91.6	79 - 115	1.04	20
2,2-Dichloropropane	16.8200	0.50	0.38	20.0000		84.1	67 - 149	5.66	20

L3



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0081 - MSVOA_LL_W (continued)

LCS Dup (B1D0081-BSD2) - Continued

Prepared: 4/6/2021 Analyzed: 4/6/2021

2-Chlorotoluene	18.1600	0.50	0.11	20.0000		90.8	81 - 119	0.986	20	
4-Chlorotoluene	17.4500	0.50	0.12	20.0000		87.2	86 - 117	2.32	20	
4-Isopropyltoluene	17.6600	0.50	0.11	20.0000		88.3	82 - 131	0.739	20	
Benzene	19.4000	0.50	0.13	20.0000		97.0	75 - 124	3.79	20	
Bromobenzene	18.3200	0.50	0.21	20.0000		91.6	82 - 108	2.32	20	
Bromodichloromethane	17.9500	0.50	0.14	20.0000		89.8	80 - 120	0.334	20	
Bromoform	15.4400	0.50	0.20	20.0000		77.2	70 - 123	3.09	20	
Bromomethane	34.4700	0.50	0.40	20.0000		172	44 - 151	0.465	20	L5
Carbon tetrachloride	19.0300	0.50	0.09	20.0000		95.2	62 - 140	4.62	20	
Chlorobenzene	18.5100	0.50	0.13	20.0000		92.6	80 - 112	2.72	20	
Chloroethane	20.6500	0.50	0.15	20.0000		103	42 - 167	4.64	20	
Chloroform	18.5000	0.50	0.11	20.0000		92.5	77 - 122	1.93	20	
Chloromethane	17.4200	0.50	0.12	20.0000		87.1	33 - 153	5.69	20	
cis-1,2-Dichloroethene	18.2500	0.50	0.14	20.0000		91.2	75 - 121	3.39	20	
cis-1,3-Dichloropropene	16.2600	0.50	0.13	20.0000		81.3	73 - 127	0.123	20	
Dibromochloromethane	16.7600	0.50	0.16	20.0000		83.8	77 - 122	1.72	20	
Dibromomethane	17.9000	0.50	0.19	20.0000		89.5	75 - 121	0.224	20	
Dichlorodifluoromethane	34.8000	0.50	0.18	20.0000		174	0 - 171	2.64	20	L4
Ethylbenzene	18.9300	0.50	0.13	20.0000		94.6	82 - 119	3.73	20	
Hexachlorobutadiene	20.5200	0.50	0.15	20.0000		103	71 - 131	1.02	20	
Isopropylbenzene	18.4900	0.50	0.10	20.0000		92.4	75 - 126	0.862	20	
m,p-Xylene	38.2000	1.0	0.19	40.0000		95.5	86 - 119	1.69	20	
Methylene chloride	18.9400	1.0	0.71	20.0000		94.7	76 - 125	2.04	20	
n-Butylbenzene	18.0000	0.50	0.11	20.0000		90.0	81 - 125	4.26	20	
n-Propylbenzene	18.4000	0.50	0.10	20.0000		92.0	78 - 130	2.04	20	
Naphthalene	18.5300	0.50	0.41	20.0000		92.6	47 - 128	3.07	20	
o-Xylene	18.2400	0.50	0.13	20.0000		91.2	85 - 119	3.61	20	
sec-Butylbenzene	18.4400	0.50	0.09	20.0000		92.2	78 - 130	1.72	20	
Styrene	18.9400	0.50	0.13	20.0000		94.7	62 - 148	2.76	20	
tert-Butylbenzene	18.2400	0.50	0.09	20.0000		91.2	77 - 125	1.95	20	
Tetrachloroethene	19.9600	0.50	0.10	20.0000		99.8	73 - 120	2.13	20	
Toluene	18.4900	0.50	0.12	20.0000		92.4	79 - 119	3.25	20	
trans-1,2-Dichloroethene	18.6100	0.50	0.09	20.0000		93.0	70 - 129	2.86	20	
Trichloroethene	18.8100	0.50	0.10	20.0000		94.0	73 - 117	3.65	20	
Trichlorofluoromethane	22.5600	0.50	0.23	20.0000		113	59 - 135	4.00	20	
Vinyl chloride	22.9500	0.50	0.13	20.0000		115	58 - 132	4.06	20	
Surrogate: 1,2-Dichloroethane-d4	24.30			25.0000		97.2	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.17			25.0000		96.7	73 - 124			
Surrogate: Dibromofluoromethane	24.58			25.0000		98.3	78 - 129			
Surrogate: Toluene-d8	24.14			25.0000		96.6	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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 B1D0074 - MSSEMI_W

Blank (B1D0074-BLK1)

Prepared: 4/5/2021 Analyzed: 4/6/2021

1,4-Dioxane	ND	2.0	0.84						
Surrogate: 1,2-Dichlorobenzene-d	62.77			100.000		62.8	17 - 119		
Surrogate: 2-Fluorobiphenyl	68.44			100.000		68.4	10 - 133		
Surrogate: 4-Terphenyl-d14	68.01			100.000		68.0	5 - 139		
Surrogate: Nitrobenzene-d5	59.45			100.000		59.4	13 - 150		

LCS (B1D0074-BS1)

Prepared: 4/5/2021 Analyzed: 4/6/2021

1,4-Dioxane	108.070	2.0	0.84	100.000		108	75 - 155		
Surrogate: 1,2-Dichlorobenzene-d	49.74			100.000		49.7	17 - 119		
Surrogate: 2-Fluorobiphenyl	63.24			100.000		63.2	10 - 133		
Surrogate: 4-Terphenyl-d14	81.23			100.000		81.2	5 - 139		
Surrogate: Nitrobenzene-d5	60.05			100.000		60.0	13 - 150		

LCS Dup (B1D0074-BSD1)

Prepared: 4/5/2021 Analyzed: 4/6/2021

1,4-Dioxane	111.810	2.0	0.84	100.000		112	75 - 155	3.40	20
Surrogate: 1,2-Dichlorobenzene-d	59.81			100.000		59.8	17 - 119		
Surrogate: 2-Fluorobiphenyl	68.33			100.000		68.3	10 - 133		
Surrogate: 4-Terphenyl-d14	69.81			100.000		69.8	5 - 139		
Surrogate: Nitrobenzene-d5	60.56			100.000		60.6	13 - 150		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

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	RPD Limit	Notes

Batch B1D0046 - MSSEMI_W

Blank (B1D0046-BLK1)

Prepared: 4/2/2021 Analyzed: 4/5/2021

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d	0.6478			1.00000		64.8	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.8054			1.00000		80.5	8 - 111		
Surrogate: 4-Terphenyl-d14	0.7261			1.00000		72.6	12 - 113		
Surrogate: Nitrobenzene-d5	0.7015			1.00000		70.2	15 - 121		

LCS (B1D0046-BS1)

Prepared: 4/2/2021 Analyzed: 4/5/2021

1,4-Dioxane	1.70233	0.20	0.05	1.00000		170	75 - 155		L2
Surrogate: 1,2-Dichlorobenzene-d	0.6834			1.00000		68.3	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.9276			1.00000		92.8	8 - 111		
Surrogate: 4-Terphenyl-d14	0.7426			1.00000		74.3	12 - 113		
Surrogate: Nitrobenzene-d5	0.7468			1.00000		74.7	15 - 121		

LCS Dup (B1D0046-BSD1)

Prepared: 4/2/2021 Analyzed: 4/5/2021

1,4-Dioxane	2.56937	0.20	0.05	1.00000		257	75 - 155	40.6	20 L2, R1
Surrogate: 1,2-Dichlorobenzene-d	0.6930			1.00000		69.3	13 - 99		
Surrogate: 2-Fluorobiphenyl	0.9380			1.00000		93.8	8 - 111		
Surrogate: 4-Terphenyl-d14	1.034			1.00000		103	12 - 113		
Surrogate: Nitrobenzene-d5	0.7764			1.00000		77.6	15 - 121		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2021

Notes and Definitions

R1	RPD value outside acceptance criteria. Reanalysis not possible due to insufficient amount of sample.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M7	Matrix spike was high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
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.
L2	Laboratory control sample outside of acceptance limits. Reextraction and/or reanalysis is not possible due to limited amount of sample.
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.

2100909

Date: 04/01/2021
Page 1 of 1

PROJECT: Raytheon Main GETS Monthly Sample

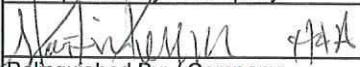
TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Ross Horton

Phone 858.455.6500

Fax 858.455.6533

Sampled By:		SAMPLE COLLECTION		MATRIX		PRESERVATION		CONTAINERS		ANALYSIS REQUESTED		Expected Concentration Range (ppb) for VOAs		SPECIAL HANDLING		Laboratory Advanced Technology Laboratories Attn: Rachelle Arada 3275 Walnut Ave Signal Hill, CA 90755 (562) 989-4045	REMARKS																			
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1L Amber			VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270 SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 Hour TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested	
1	TB-040121	4/1/2021	8:00		X	X			X	2						X										X										
2	CEFF	4/1/2021	09:30	X		X			X	3					1	X									X	X							X			
3	CBT	4/1/2021	09:34	X		X			X	3					1	X								X	X								X			
4	POX	4/1/2021	09:40	X		X		X	X	5	1	1			1	X	X		X	X				X	X								X			
5	PF	4/1/2021	09:50	X		X		X	X	2		1	1	1					X	X	X	X											X			
6	INF	4/1/2021	09:58	X		X			X	3	2				1	X	X	X					X				X						X			
7	EW-02	4/1/2021	10:20	X		X			X	3	1				1	X		X					X			X							X			
8	MW-29	4/1/2021	10:40	X		X			X	3	1				1	X		X					X			X							X			
Total number of containers per analysis:										24	5	2	1	1	6	Total No. of Containers: <u>39</u>																				
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																							
				4-1-2021 14:56					4/1/21 14:57																											
Relinquished By: / Company:				Date / Time	Received By: / Company				Date / Time																											

Instructions
 Completely and sign
 point pen. Draw
 indicate the
 Note applicable
 Consult project QA documents for specific instructions.

1.7 Temperature on receipt
 10F SCIRT11

Send Results to:
Steve Netto & Ross Horton
 9171 Towne Centre Drive
 Suite 375
 San Diego, CA 92122
 Ph: 858.455.6500
snetto@hargis.com
rhorton@hargis.com

Laboratory Report

April 20, 2021

Advanced Technology Laboratories
PO Box 92797
Long Beach, CA 90809-2797

Attn: Tina Nguyen

Element Job No: 246447
Purchase Order: COD
Project Name: 2100809 / Groundwater
Samples Received: 2
Date Received: 04-02-2021

Analysis	Page
Bromate by SOP 5600, Rev 4	2



Michael Shelton
Technical Director



Cathy Moore Ph.D
Principal Chemist

Bromate by SOP 5600, Rev. 4
Ion Chromatography-Tandem Mass Spectrometry

Sample preparation: An aliquot of sample was spiked with internal standard (bromate-¹⁸O₃), and diluted with water. The sample solutions were analyzed using IC-MS/MS.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>
ATL Lab#: 2100809-04 / POX	ND
ATL Lab#: 2100809-06 / INF	ND
Method Blank	ND
Detection Limit	0.5
Date Analyzed: 04-12-2021	

Quality Control Summary

Sample ID: ATL Lab#: 2100809-06 / INF

Units: Parts Per Billion (µg/L)

<u>Analyte</u>	<u>Sample Result</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>	<u>Spike Duplicate</u>	<u>Duplicate % Rec</u>	<u>RPD</u>
Bromate	ND	5.00	5.35	107	5.16	103	3
QC Guidelines				80-120		80-120	NMT 15

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 2100809

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Tina Nguyen
(Tina.Nguyen@atlglobal.com)
Sampler: Ruben Sanchez

RECEIVING LABORATORY:

Element Materials Technology
9240 Santa Fe Springs Road
Santa Fe Springs, CA 90670
Phone: (562) 948-2225
Fax: (562) 948-5850
PO#: SC15142 - STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

QC Requirements:

☒ Routine ☐ RWQCB
☐ Caltrans ☐ Level IV*
☐ Legal ☐ Other: _____

* All Level IV sample containers (including empty ones) must be returned to ATL 30 days after receipt.

EDD Requirements:

☒ Standard Excel
☐ Geotracker EDF
☐ Other: _____

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 2100809-04 [~] POX Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS] 1-Poly Unpres 125mL	04/16/21 17:00	Groundwater 04/29/21 09:40	04/01/21 09:40	
ATL Lab#: 2100809-06 [~] INF Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS] 1-Poly Unpres 125mL	04/16/21 17:00	Groundwater 04/29/21 09:58	04/01/21 09:58	

04-02-2021 OK, @ALSO has

Approved by

ATL Project Manager

Released By ATL Sample Control

Released By Courier

Date

Date

Date

Time

Time

Time

Received By Courier

Received By Subcontract Laboratory

Date

Date

Date

Time

Time

Time



April 29, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2100910

Client Reference : Raytheon Main GETS Mid Month Sample 532.15

Enclosed are the results for sample(s) received on April 15, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "Edgar P. Caballero", with a long horizontal flourish extending to the right.

Edgar P. Caballero
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-041521	2100910-01	Lab Prepared Water	4/15/21 8:00	4/15/21 15:42
CEFF	2100910-02	Groundwater	4/15/21 12:20	4/15/21 15:42
CBT	2100910-03	Groundwater	4/15/21 12:30	4/15/21 15:42
POX	2100910-04	Groundwater	4/15/21 12:35	4/15/21 15:42
INF	2100910-05	Groundwater	4/15/21 12:45	4/15/21 15:42
EW-02	2100910-06	Groundwater	4/15/21 13:10	4/15/21 15:42
MW-29	2100910-07	Groundwater	4/15/21 13:20	4/15/21 15:42



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: TB-041521

Lab ID: 2100910-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,1,1-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,1,2-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,1-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,1-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,1-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2,3-Trichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2-Dibromoethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,3-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,3-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
1,4-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
2,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
2-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
4-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
4-Isopropyltoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Benzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Bromobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Bromodichloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Bromoform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Bromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Carbon tetrachloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Chlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Chloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Chloroform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Chloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Dibromochloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: TB-041521

Lab ID: 2100910-01

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Dichlorodifluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Ethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Hexachlorobutadiene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Isopropylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
m,p-Xylene	ND	1.0	1	B1D0313	04/16/2021	04/16/21 12:44	
Methylene chloride	ND	1.0	1	B1D0313	04/16/2021	04/16/21 12:44	
n-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
n-Propylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Naphthalene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
o-Xylene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
sec-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Styrene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
tert-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Tetrachloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Toluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Trichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Trichlorofluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Vinyl chloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 12:44	
Surrogate: 1,2-Dichloroethane-d4	90.0 %	64 - 155		B1D0313	04/16/2021	04/16/21 12:44	
Surrogate: 4-Bromofluorobenzene	90.2 %	73 - 124		B1D0313	04/16/2021	04/16/21 12:44	
Surrogate: Dibromofluoromethane	101 %	78 - 129		B1D0313	04/16/2021	04/16/21 12:44	
Surrogate: Toluene-d8	95.1 %	84 - 117		B1D0313	04/16/2021	04/16/21 12:44	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: CEFF

Lab ID: 2100910-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,1,1-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,1,2-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,1-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,1-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,1-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2,3-Trichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2-Dibromoethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,3-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,3-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
1,4-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
2,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
2-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
4-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
4-Isopropyltoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Benzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Bromobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Bromodichloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Bromoform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Bromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Carbon tetrachloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Chlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Chloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Chloroform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Chloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Dibromochloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: CEFF

Lab ID: 2100910-02

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Dichlorodifluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Ethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Hexachlorobutadiene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Isopropylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
m,p-Xylene	ND	1.0	1	B1D0313	04/16/2021	04/16/21 13:09	
Methylene chloride	ND	1.0	1	B1D0313	04/16/2021	04/16/21 13:09	
n-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
n-Propylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Naphthalene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
o-Xylene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
sec-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Styrene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
tert-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Tetrachloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Toluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Trichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Trichlorofluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Vinyl chloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:09	
Surrogate: 1,2-Dichloroethane-d4	91.6 %	64 - 155		B1D0313	04/16/2021	04/16/21 13:09	
Surrogate: 4-Bromofluorobenzene	89.5 %	73 - 124		B1D0313	04/16/2021	04/16/21 13:09	
Surrogate: Dibromofluoromethane	99.6 %	78 - 129		B1D0313	04/16/2021	04/16/21 13:09	
Surrogate: Toluene-d8	97.1 %	84 - 117		B1D0313	04/16/2021	04/16/21 13:09	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: CEFF

Lab ID: 2100910-02

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1D0434	04/21/2021	04/23/21 16:40	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>83.3 %</i>	<i>8 - 111</i>		B1D0434	04/21/2021	<i>04/23/21 16:40</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>79.2 %</i>	<i>12 - 113</i>		B1D0434	04/21/2021	<i>04/23/21 16:40</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>67.1 %</i>	<i>15 - 121</i>		B1D0434	04/21/2021	<i>04/23/21 16:40</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: CBT

Lab ID: 2100910-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,1,1-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,1,2-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,1-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,1-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,1-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2,3-Trichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2-Dibromoethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,3-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,3-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
1,4-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
2,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
2-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
4-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
4-Isopropyltoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Benzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Bromobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Bromodichloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Bromoform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Bromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Carbon tetrachloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Chlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Chloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Chloroform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Chloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Dibromochloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: CBT

Lab ID: 2100910-03

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Dichlorodifluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Ethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Hexachlorobutadiene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Isopropylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
m,p-Xylene	ND	1.0	1	B1D0313	04/16/2021	04/16/21 13:33	
Methylene chloride	ND	1.0	1	B1D0313	04/16/2021	04/16/21 13:33	
n-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
n-Propylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Naphthalene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
o-Xylene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
sec-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Styrene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
tert-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Tetrachloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Toluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Trichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Trichlorofluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Vinyl chloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:33	
Surrogate: 1,2-Dichloroethane-d4	90.0 %	64 - 155		B1D0313	04/16/2021	04/16/21 13:33	
Surrogate: 4-Bromofluorobenzene	93.6 %	73 - 124		B1D0313	04/16/2021	04/16/21 13:33	
Surrogate: Dibromofluoromethane	97.4 %	78 - 129		B1D0313	04/16/2021	04/16/21 13:33	
Surrogate: Toluene-d8	98.3 %	84 - 117		B1D0313	04/16/2021	04/16/21 13:33	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: CBT

Lab ID: 2100910-03

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1D0434	04/21/2021	04/23/21 17:06	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.2 %</i>	<i>8 - 111</i>		B1D0434	04/21/2021	<i>04/23/21 17:06</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.5 %</i>	<i>12 - 113</i>		B1D0434	04/21/2021	<i>04/23/21 17:06</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>61.0 %</i>	<i>15 - 121</i>		B1D0434	04/21/2021	<i>04/23/21 17:06</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: POX

Lab ID: 2100910-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,1,1-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,1,2-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,1-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,1-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,1-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2,3-Trichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2-Dibromoethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,3-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,3-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
1,4-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
2,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
2-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
4-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
4-Isopropyltoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Benzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Bromobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Bromodichloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Bromoform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Bromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Carbon tetrachloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Chlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Chloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Chloroform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Chloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Dibromochloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: POX

Lab ID: 2100910-04

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Dichlorodifluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Ethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Hexachlorobutadiene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Isopropylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
m,p-Xylene	ND	1.0	1	B1D0313	04/16/2021	04/16/21 13:58	
Methylene chloride	ND	1.0	1	B1D0313	04/16/2021	04/16/21 13:58	
n-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
n-Propylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Naphthalene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
o-Xylene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
sec-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Styrene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
tert-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Tetrachloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Toluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Trichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Trichlorofluoromethane	1.0	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
Vinyl chloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 13:58	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93.4 %</i>	<i>64 - 155</i>		B1D0313	04/16/2021	<i>04/16/21 13:58</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.0 %</i>	<i>73 - 124</i>		B1D0313	04/16/2021	<i>04/16/21 13:58</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.9 %</i>	<i>78 - 129</i>		B1D0313	04/16/2021	<i>04/16/21 13:58</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.7 %</i>	<i>84 - 117</i>		B1D0313	04/16/2021	<i>04/16/21 13:58</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: POX

Lab ID: 2100910-04

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1D0434	04/21/2021	04/23/21 17:33	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>83.5 %</i>	<i>8 - 111</i>		B1D0434	04/21/2021	<i>04/23/21 17:33</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>91.7 %</i>	<i>12 - 113</i>		B1D0434	04/21/2021	<i>04/23/21 17:33</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>74.6 %</i>	<i>15 - 121</i>		B1D0434	04/21/2021	<i>04/23/21 17:33</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: INF

Lab ID: 2100910-05

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,1,1-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,1,2-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,1-Dichloroethane	0.50	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,1-Dichloroethene	55	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,1-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2,3-Trichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2-Dibromoethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,3-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,3-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
1,4-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
2,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
2-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
4-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
4-Isopropyltoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Benzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Bromobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Bromodichloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Bromoform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Bromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Carbon tetrachloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Chlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Chloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Chloroform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Chloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Dibromochloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: INF

Lab ID: 2100910-05

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Dichlorodifluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Ethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Hexachlorobutadiene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Isopropylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
m,p-Xylene	ND	1.0	1	B1D0313	04/16/2021	04/16/21 16:55	
Methylene chloride	ND	1.0	1	B1D0313	04/16/2021	04/16/21 16:55	
n-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
n-Propylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Naphthalene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
o-Xylene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
sec-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Styrene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
tert-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Tetrachloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Toluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Trichloroethene	0.64	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Trichlorofluoromethane	1.0	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
Vinyl chloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 16:55	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.6 %</i>	<i>64 - 155</i>		B1D0313	04/16/2021	<i>04/16/21 16:55</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.8 %</i>	<i>73 - 124</i>		B1D0313	04/16/2021	<i>04/16/21 16:55</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.6 %</i>	<i>78 - 129</i>		B1D0313	04/16/2021	<i>04/16/21 16:55</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.8 %</i>	<i>84 - 117</i>		B1D0313	04/16/2021	<i>04/16/21 16:55</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: INF

Lab ID: 2100910-05

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	31	2.0	1	B1D0443	04/21/2021	04/27/21 23:31	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>38.9 %</i>	<i>17 - 119</i>		B1D0443	04/21/2021	<i>04/27/21 23:31</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>138 %</i>	<i>10 - 133</i>		B1D0443	04/21/2021	<i>04/27/21 23:31</i>	S16
<i>Surrogate: 4-Terphenyl-d14</i>	<i>145 %</i>	<i>5 - 139</i>		B1D0443	04/21/2021	<i>04/27/21 23:31</i>	S16
<i>Surrogate: Nitrobenzene-d5</i>	<i>109 %</i>	<i>13 - 150</i>		B1D0443	04/21/2021	<i>04/27/21 23:31</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: EW-02

Lab ID: 2100910-06

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,1,1-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,1,2-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,1-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,1-Dichloroethene	15	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,1-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2,3-Trichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2-Dibromoethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,3-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,3-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
1,4-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
2,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
2-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
4-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
4-Isopropyltoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Benzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Bromobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Bromodichloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Bromoform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Bromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Carbon tetrachloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Chlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Chloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Chloroform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Chloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Dibromochloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: EW-02

Lab ID: 2100910-06

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Dichlorodifluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Ethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Hexachlorobutadiene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Isopropylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
m,p-Xylene	ND	1.0	1	B1D0313	04/16/2021	04/16/21 14:23	
Methylene chloride	ND	1.0	1	B1D0313	04/16/2021	04/16/21 14:23	
n-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
n-Propylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Naphthalene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
o-Xylene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
sec-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Styrene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
tert-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Tetrachloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Toluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Trichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Trichlorofluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Vinyl chloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 14:23	
Surrogate: 1,2-Dichloroethane-d4	92.8 %	64 - 155		B1D0313	04/16/2021	04/16/21 14:23	
Surrogate: 4-Bromofluorobenzene	90.4 %	73 - 124		B1D0313	04/16/2021	04/16/21 14:23	
Surrogate: Dibromofluoromethane	100 %	78 - 129		B1D0313	04/16/2021	04/16/21 14:23	
Surrogate: Toluene-d8	97.8 %	84 - 117		B1D0313	04/16/2021	04/16/21 14:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: EW-02

Lab ID: 2100910-06

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	4.2	2.0	1	B1D0443	04/21/2021	04/27/21 23:58	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>48.7 %</i>	<i>17 - 119</i>		<i>B1D0443</i>	<i>04/21/2021</i>	<i>04/27/21 23:58</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>172 %</i>	<i>10 - 133</i>		<i>B1D0443</i>	<i>04/21/2021</i>	<i>04/27/21 23:58</i>	<i>S16</i>
<i>Surrogate: 4-Terphenyl-d14</i>	<i>154 %</i>	<i>5 - 139</i>		<i>B1D0443</i>	<i>04/21/2021</i>	<i>04/27/21 23:58</i>	<i>S16</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>134 %</i>	<i>13 - 150</i>		<i>B1D0443</i>	<i>04/21/2021</i>	<i>04/27/21 23:58</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: MW-29

Lab ID: 2100910-07

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,1,1-Trichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,1,2-Trichloroethane	0.62	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,1-Dichloroethane	1.6	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,1-Dichloroethene	180	10	20	B1D0313	04/16/2021	04/16/21 16:30	
1,1-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2,3-Trichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2,3-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2,4-Trichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2,4-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2-Dibromoethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2-Dichloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,3,5-Trimethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,3-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,3-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
1,4-Dichlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
2,2-Dichloropropane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
2-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
4-Chlorotoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
4-Isopropyltoluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Benzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Bromobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Bromodichloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Bromoform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Bromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Carbon tetrachloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Chlorobenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Chloroethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Chloroform	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Chloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
cis-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
cis-1,3-Dichloropropene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Dibromochloromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: MW-29

Lab ID: 2100910-07

Volatile Organic Compounds by EPA 8260B

Analyst: JBL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Dichlorodifluoromethane	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Ethylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Hexachlorobutadiene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Isopropylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
m,p-Xylene	ND	1.0	1	B1D0313	04/16/2021	04/16/21 17:45	
Methylene chloride	ND	1.0	1	B1D0313	04/16/2021	04/16/21 17:45	
n-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
n-Propylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Naphthalene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
o-Xylene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
sec-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Styrene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
tert-Butylbenzene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Tetrachloroethene	0.68	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Toluene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
trans-1,2-Dichloroethene	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Trichloroethene	2.1	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Trichlorofluoromethane	1.6	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
Vinyl chloride	ND	0.50	1	B1D0313	04/16/2021	04/16/21 17:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.0 %</i>	<i>64 - 155</i>		B1D0313	04/16/2021	<i>04/16/21 17:45</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93.1 %</i>	<i>64 - 155</i>		B1D0313	04/16/2021	<i>04/16/21 16:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.6 %</i>	<i>73 - 124</i>		B1D0313	04/16/2021	<i>04/16/21 16:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.0 %</i>	<i>73 - 124</i>		B1D0313	04/16/2021	<i>04/16/21 17:45</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.0 %</i>	<i>78 - 129</i>		B1D0313	04/16/2021	<i>04/16/21 17:45</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.8 %</i>	<i>78 - 129</i>		B1D0313	04/16/2021	<i>04/16/21 16:30</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.5 %</i>	<i>84 - 117</i>		B1D0313	04/16/2021	<i>04/16/21 17:45</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.8 %</i>	<i>84 - 117</i>		B1D0313	04/16/2021	<i>04/16/21 16:30</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Client Sample ID: MW-29

Lab ID: 2100910-07

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	110	2.0	1	B1D0443	04/21/2021	04/28/21 00:25	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>39.0 %</i>	<i>17 - 119</i>		B1D0443	04/21/2021	<i>04/28/21 00:25</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>138 %</i>	<i>10 - 133</i>		B1D0443	04/21/2021	<i>04/28/21 00:25</i>	S16
<i>Surrogate: 4-Terphenyl-d14</i>	<i>147 %</i>	<i>5 - 139</i>		B1D0443	04/21/2021	<i>04/28/21 00:25</i>	S16
<i>Surrogate: Nitrobenzene-d5</i>	<i>108 %</i>	<i>13 - 150</i>		B1D0443	04/21/2021	<i>04/28/21 00:25</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

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 B1D0313 - MSVOA_LL_W

Blank (B1D0313-BLK1)

Prepared: 4/16/2021 Analyzed: 4/16/2021

1,1,1,2-Tetrachloroethane	ND	0.50	0.11
1,1,1-Trichloroethane	ND	0.50	0.21
1,1,1,2-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



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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

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 B1D0313 - MSVOA_LL_W (continued)

Blank (B1D0313-BLK1) - Continued

Prepared: 4/16/2021 Analyzed: 4/16/2021

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
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	23.15		25.0000	92.6	64 - 155
Surrogate: 4-Bromofluorobenzene	23.01		25.0000	92.0	73 - 124
Surrogate: Dibromofluoromethane	24.79		25.0000	99.2	78 - 129
Surrogate: Toluene-d8	24.48		25.0000	97.9	84 - 117

LCS (B1D0313-BS1)

Prepared: 4/16/2021 Analyzed: 4/16/2021

1,1,1,2-Tetrachloroethane	16.9000	0.50	0.11	20.0000	84.5	79 - 116
1,1,1-Trichloroethane	17.5200	0.50	0.21	20.0000	87.6	73 - 130
1,1,2,2-Tetrachloroethane	17.5900	0.50	0.36	20.0000	88.0	71 - 122
1,1,2-Trichloroethane	16.7000	0.50	0.25	20.0000	83.5	70 - 124
1,1-Dichloroethane	16.8700	0.50	0.09	20.0000	84.4	69 - 128
1,1-Dichloroethene	17.0600	0.50	0.13	20.0000	85.3	65 - 137
1,1-Dichloropropene	20.3600	0.50	0.13	20.0000	102	74 - 129
1,2,3-Trichloropropane	18.3100	0.50	0.39	20.0000	91.6	74 - 123
1,2,3-Trichlorobenzene	21.7600	0.50	0.18	20.0000	109	59 - 130
1,2,4-Trichlorobenzene	21.5400	0.50	0.16	20.0000	108	65 - 125
1,2,4-Trimethylbenzene	18.5700	0.50	0.14	20.0000	92.8	88 - 124
1,2-Dibromo-3-chloropropane	18.3200	0.50	0.41	20.0000	91.6	61 - 127
1,2-Dibromoethane	18.0700	0.50	0.24	20.0000	90.4	72 - 125
1,2-Dichlorobenzene	18.4100	0.50	0.20	20.0000	92.0	84 - 113
1,2-Dichloroethane	18.7700	0.50	0.20	20.0000	93.8	68 - 130
1,2-Dichloropropane	18.0600	0.50	0.15	20.0000	90.3	77 - 121
1,3,5-Trimethylbenzene	18.6000	0.50	0.13	20.0000	93.0	83 - 124



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

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 B1D0313 - MSVOA_LL_W (continued)

LCS (B1D0313-BS1) - Continued

Prepared: 4/16/2021 Analyzed: 4/16/2021

1,3-Dichlorobenzene	19.0900	0.50	0.16	20.0000		95.4	83 - 112		
1,3-Dichloropropane	18.0900	0.50	0.21	20.0000		90.4	77 - 119		
1,4-Dichlorobenzene	18.1500	0.50	0.17	20.0000		90.8	79 - 115		
2,2-Dichloropropane	18.9300	0.50	0.38	20.0000		94.6	67 - 149		
2-Chlorotoluene	18.3800	0.50	0.11	20.0000		91.9	81 - 119		
4-Chlorotoluene	18.5600	0.50	0.12	20.0000		92.8	86 - 117		
4-Isopropyltoluene	18.9800	0.50	0.11	20.0000		94.9	82 - 131		
Benzene	18.8600	0.50	0.13	20.0000		94.3	75 - 124		
Bromobenzene	18.6000	0.50	0.21	20.0000		93.0	82 - 108		
Bromodichloromethane	18.0300	0.50	0.14	20.0000		90.2	80 - 120		
Bromoform	16.1600	0.50	0.20	20.0000		80.8	70 - 123		
Bromomethane	16.1800	0.50	0.40	20.0000		80.9	44 - 151		
Carbon tetrachloride	19.2100	0.50	0.09	20.0000		96.0	62 - 140		
Chlorobenzene	18.0700	0.50	0.13	20.0000		90.4	80 - 112		
Chloroethane	20.1300	0.50	0.15	20.0000		101	42 - 167		
Chloroform	17.4000	0.50	0.11	20.0000		87.0	77 - 122		
Chloromethane	19.4900	0.50	0.12	20.0000		97.4	33 - 153		
cis-1,2-Dichloroethene	17.4800	0.50	0.14	20.0000		87.4	75 - 121		
cis-1,3-Dichloropropene	17.4200	0.50	0.13	20.0000		87.1	73 - 127		
Dibromochloromethane	17.6600	0.50	0.16	20.0000		88.3	77 - 122		
Dibromomethane	17.5800	0.50	0.19	20.0000		87.9	75 - 121		
Dichlorodifluoromethane	30.2600	0.50	0.18	20.0000		151	0 - 171		
Ethylbenzene	18.7600	0.50	0.13	20.0000		93.8	82 - 119		
Hexachlorobutadiene	22.7100	0.50	0.15	20.0000		114	71 - 131		
Isopropylbenzene	18.9500	0.50	0.10	20.0000		94.8	75 - 126		
m,p-Xylene	38.1300	1.0	0.19	40.0000		95.3	86 - 119		
Methylene chloride	17.8500	1.0	0.71	20.0000		89.2	76 - 125		
n-Butylbenzene	19.1900	0.50	0.11	20.0000		96.0	81 - 125		
n-Propylbenzene	19.5700	0.50	0.10	20.0000		97.8	78 - 130		
Naphthalene	20.3100	0.50	0.41	20.0000		102	47 - 128		
o-Xylene	18.1600	0.50	0.13	20.0000		90.8	85 - 119		
sec-Butylbenzene	19.2900	0.50	0.09	20.0000		96.4	78 - 130		
Styrene	19.2700	0.50	0.13	20.0000		96.4	62 - 148		
tert-Butylbenzene	19.0700	0.50	0.09	20.0000		95.4	77 - 125		
Tetrachloroethene	19.9700	0.50	0.10	20.0000		99.8	73 - 120		
Toluene	17.8000	0.50	0.12	20.0000		89.0	79 - 119		
trans-1,2-Dichloroethene	17.9000	0.50	0.09	20.0000		89.5	70 - 129		
Trichloroethene	18.6100	0.50	0.10	20.0000		93.0	73 - 117		
Trichlorofluoromethane	21.4300	0.50	0.23	20.0000		107	59 - 135		
Vinyl chloride	21.3400	0.50	0.13	20.0000		107	58 - 132		

Surrogate: 1,2-Dichloroethane-d4	22.48			25.0000		89.9	64 - 155		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

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

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

Batch B1D0313 - MSVOA_LL_W (continued)

LCS (B1D0313-BS1) - Continued

Prepared: 4/16/2021 Analyzed: 4/16/2021

Surrogate: 4-Bromofluorobenzene	23.09		25.0000		92.4	73 - 124			
Surrogate: Dibromofluoromethane	24.73		25.0000		98.9	78 - 129			
Surrogate: Toluene-d8	24.43		25.0000		97.7	84 - 117			

LCS Dup (B1D0313-BSD1)

Prepared: 4/16/2021 Analyzed: 4/16/2021

1,1,1,2-Tetrachloroethane	17.0000	0.50	0.11	20.0000	85.0	79 - 116	0.590	20	
1,1,1-Trichloroethane	18.3100	0.50	0.21	20.0000	91.6	73 - 130	4.41	20	
1,1,2,2-Tetrachloroethane	18.0500	0.50	0.36	20.0000	90.2	71 - 122	2.58	20	
1,1,2-Trichloroethane	17.7200	0.50	0.25	20.0000	88.6	70 - 124	5.93	20	
1,1-Dichloroethane	17.4100	0.50	0.09	20.0000	87.0	69 - 128	3.15	20	
1,1-Dichloroethene	18.2800	0.50	0.13	20.0000	91.4	65 - 137	6.90	20	
1,1-Dichloropropene	22.3200	0.50	0.13	20.0000	112	74 - 129	9.18	20	
1,2,3-Trichloropropane	18.2800	0.50	0.39	20.0000	91.4	74 - 123	0.164	20	
1,2,3-Trichlorobenzene	22.0300	0.50	0.18	20.0000	110	59 - 130	1.23	20	
1,2,4-Trichlorobenzene	21.9600	0.50	0.16	20.0000	110	65 - 125	1.93	20	
1,2,4-Trimethylbenzene	19.5400	0.50	0.14	20.0000	97.7	88 - 124	5.09	20	
1,2-Dibromo-3-chloropropane	17.8900	0.50	0.41	20.0000	89.4	61 - 127	2.38	20	
1,2-Dibromoethane	18.6700	0.50	0.24	20.0000	93.4	72 - 125	3.27	20	
1,2-Dichlorobenzene	19.3600	0.50	0.20	20.0000	96.8	84 - 113	5.03	20	
1,2-Dichloroethane	19.0900	0.50	0.20	20.0000	95.4	68 - 130	1.69	20	
1,2-Dichloropropane	18.7800	0.50	0.15	20.0000	93.9	77 - 121	3.91	20	
1,3,5-Trimethylbenzene	19.7300	0.50	0.13	20.0000	98.6	83 - 124	5.90	20	
1,3-Dichlorobenzene	20.0200	0.50	0.16	20.0000	100	83 - 112	4.76	20	
1,3-Dichloropropane	18.4200	0.50	0.21	20.0000	92.1	77 - 119	1.81	20	
1,4-Dichlorobenzene	19.3700	0.50	0.17	20.0000	96.8	79 - 115	6.50	20	
2,2-Dichloropropane	19.3400	0.50	0.38	20.0000	96.7	67 - 149	2.14	20	
2-Chlorotoluene	19.6000	0.50	0.11	20.0000	98.0	81 - 119	6.42	20	
4-Chlorotoluene	19.0000	0.50	0.12	20.0000	95.0	86 - 117	2.34	20	
4-Isopropyltoluene	20.0200	0.50	0.11	20.0000	100	82 - 131	5.33	20	
Benzene	19.8500	0.50	0.13	20.0000	99.2	75 - 124	5.11	20	
Bromobenzene	19.6500	0.50	0.21	20.0000	98.2	82 - 108	5.49	20	
Bromodichloromethane	18.4100	0.50	0.14	20.0000	92.0	80 - 120	2.09	20	
Bromoform	15.3400	0.50	0.20	20.0000	76.7	70 - 123	5.21	20	
Bromomethane	17.9400	0.50	0.40	20.0000	89.7	44 - 151	10.3	20	
Carbon tetrachloride	20.2300	0.50	0.09	20.0000	101	62 - 140	5.17	20	
Chlorobenzene	18.7000	0.50	0.13	20.0000	93.5	80 - 112	3.43	20	
Chloroethane	20.6900	0.50	0.15	20.0000	103	42 - 167	2.74	20	
Chloroform	18.0600	0.50	0.11	20.0000	90.3	77 - 122	3.72	20	
Chloromethane	20.3600	0.50	0.12	20.0000	102	33 - 153	4.37	20	
cis-1,2-Dichloroethene	18.4200	0.50	0.14	20.0000	92.1	75 - 121	5.24	20	
cis-1,3-Dichloropropene	17.4300	0.50	0.13	20.0000	87.2	73 - 127	0.0574	20	
Dibromochloromethane	17.8000	0.50	0.16	20.0000	89.0	77 - 122	0.790	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1D0313 - MSVOA_LL_W (continued)

LCS Dup (B1D0313-BSD1) - Continued

Prepared: 4/16/2021 Analyzed: 4/16/2021

Dibromomethane	17.5600	0.50	0.19	20.0000		87.8	75 - 121	0.114	20	
Dichlorodifluoromethane	31.3600	0.50	0.18	20.0000		157	0 - 171	3.57	20	
Ethylbenzene	19.4100	0.50	0.13	20.0000		97.0	82 - 119	3.41	20	
Hexachlorobutadiene	23.9100	0.50	0.15	20.0000		120	71 - 131	5.15	20	
Isopropylbenzene	20.1900	0.50	0.10	20.0000		101	75 - 126	6.34	20	
m,p-Xylene	39.1000	1.0	0.19	40.0000		97.8	86 - 119	2.51	20	
Methylene chloride	18.6600	1.0	0.71	20.0000		93.3	76 - 125	4.44	20	
n-Butylbenzene	20.1700	0.50	0.11	20.0000		101	81 - 125	4.98	20	
n-Propylbenzene	20.5400	0.50	0.10	20.0000		103	78 - 130	4.84	20	
Naphthalene	20.6000	0.50	0.41	20.0000		103	47 - 128	1.42	20	
o-Xylene	18.7700	0.50	0.13	20.0000		93.8	85 - 119	3.30	20	
sec-Butylbenzene	20.5900	0.50	0.09	20.0000		103	78 - 130	6.52	20	
Styrene	19.8900	0.50	0.13	20.0000		99.4	62 - 148	3.17	20	
tert-Butylbenzene	20.2200	0.50	0.09	20.0000		101	77 - 125	5.85	20	
Tetrachloroethene	20.3400	0.50	0.10	20.0000		102	73 - 120	1.84	20	
Toluene	18.7700	0.50	0.12	20.0000		93.8	79 - 119	5.30	20	
trans-1,2-Dichloroethene	18.3500	0.50	0.09	20.0000		91.8	70 - 129	2.48	20	
Trichloroethene	19.3400	0.50	0.10	20.0000		96.7	73 - 117	3.85	20	
Trichlorofluoromethane	22.7200	0.50	0.23	20.0000		114	59 - 135	5.84	20	
Vinyl chloride	22.8000	0.50	0.13	20.0000		114	58 - 132	6.62	20	
Surrogate: 1,2-Dichloroethane-d4	22.85			25.0000		91.4	64 - 155			
Surrogate: 4-Bromofluorobenzene	22.71			25.0000		90.8	73 - 124			
Surrogate: Dibromofluoromethane	25.03			25.0000		100	78 - 129			
Surrogate: Toluene-d8	24.82			25.0000		99.3	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

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 B1D0443 - MSSEMI_W

Blank (B1D0443-BLK1)

Prepared: 4/21/2021 Analyzed: 4/27/2021

1,4-Dioxane	ND	2.0	0.84						
Surrogate: 1,2-Dichlorobenzene-d	21.91			50.0000		43.8	17 - 119		
Surrogate: 2-Fluorobiphenyl	77.15			50.0000		154	10 - 133		S16
Surrogate: 4-Terphenyl-d14	74.51			50.0000		149	5 - 139		S16
Surrogate: Nitrobenzene-d5	62.59			50.0000		125	13 - 150		

LCS (B1D0443-BS1)

Prepared: 4/21/2021 Analyzed: 4/27/2021

1,4-Dioxane	116.760	2.0	0.84	100.000		117	75 - 155		
Surrogate: 1,2-Dichlorobenzene-d	20.74			50.0000		41.5	17 - 119		
Surrogate: 2-Fluorobiphenyl	78.77			50.0000		158	10 - 133		S16
Surrogate: 4-Terphenyl-d14	73.62			50.0000		147	5 - 139		S16
Surrogate: Nitrobenzene-d5	66.43			50.0000		133	13 - 150		

LCS Dup (B1D0443-BSD1)

Prepared: 4/21/2021 Analyzed: 4/27/2021

1,4-Dioxane	115.170	2.0	0.84	100.000		115	75 - 155	1.37	20
Surrogate: 1,2-Dichlorobenzene-d	18.11			50.0000		36.2	17 - 119		
Surrogate: 2-Fluorobiphenyl	77.19			50.0000		154	10 - 133		S16
Surrogate: 4-Terphenyl-d14	74.00			50.0000		148	5 - 139		S16
Surrogate: Nitrobenzene-d5	65.82			50.0000		132	13 - 150		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

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 B1D0434 - MSSEMI_W

Blank (B1D0434-BLK1)

Prepared: 4/21/2021 Analyzed: 4/23/2021

1,4-Dioxane	ND	0.20	0.05							
Surrogate: 2-Fluorobiphenyl	0.7700			1.00000		77.0	8 - 111			
Surrogate: 4-Terphenyl-d14	0.8513			1.00000		85.1	12 - 113			
Surrogate: Nitrobenzene-d5	0.6715			1.00000		67.1	15 - 121			

LCS (B1D0434-BS1)

Prepared: 4/21/2021 Analyzed: 4/23/2021

1,4-Dioxane	2.64406	0.20	0.05	1.00000		264	75 - 155			L2
Surrogate: 2-Fluorobiphenyl	0.9635			1.00000		96.3	8 - 111			
Surrogate: 4-Terphenyl-d14	0.8905			1.00000		89.1	12 - 113			
Surrogate: Nitrobenzene-d5	0.8555			1.00000		85.5	15 - 121			

LCS Dup (B1D0434-BSD1)

Prepared: 4/21/2021 Analyzed: 4/23/2021

1,4-Dioxane	2.90107	0.20	0.05	1.00000		290	75 - 155	9.27	20	L2
Surrogate: 2-Fluorobiphenyl	0.8654			1.00000		86.5	8 - 111			
Surrogate: 4-Terphenyl-d14	0.9095			1.00000		91.0	12 - 113			
Surrogate: Nitrobenzene-d5	0.7259			1.00000		72.6	15 - 121			



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 04/29/2021

Notes and Definitions

S16	Surrogate recovery is outside the laboratory acceptance limit. Re-extraction is not possible due to insufficient sample.
L2	Laboratory control sample outside of acceptance limits. Reextraction and/or reanalysis is not possible due to limited amount of sample.
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.

Raytheon Main GETS Mid Month Sample

Fax 858.455.6533

Ruben Sanchez

[illegible]

20

6

Total No. of Containers: 26

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

Date / Time

5. Consult project QA documents for specific instructions.

Temperature on receipt

5.8°

ice SECRET 11

Send Results to:
Steve Netto & Ross Horton
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.6500
snetto@hargis.com
rhorton@hargis.com



May 27, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2101036

Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on May 06, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amy Leung', with a long horizontal flourish extending to the right.

Amy Leung
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-050621	2101036-01	Water	5/06/21 8:00	5/06/21 15:13
CEFF	2101036-02	Water	5/06/21 11:15	5/06/21 15:13
CBT	2101036-03	Water	5/06/21 11:20	5/06/21 15:13
POX	2101036-04	Water	5/06/21 11:25	5/06/21 15:13
PF	2101036-05	Water	5/06/21 11:35	5/06/21 15:13
INF	2101036-06	Water	5/06/21 11:40	5/06/21 15:13
EW-02	2101036-07	Water	5/06/21 11:55	5/06/21 15:13
MW-29	2101036-08	Water	5/06/21 12:10	5/06/21 15:13

CASE NARRATIVE

Sample/s for Bromate analysis was/were subcontracted to Element Materials.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: TB-050621

Lab ID: 2101036-01

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,1,1-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,1,2-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,1-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,1-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,1-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2,3-Trichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2-Dibromoethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,3-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,3-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
1,4-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
2,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
2-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
4-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
4-Isopropyltoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Benzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Bromobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Bromodichloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Bromoform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Bromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Carbon tetrachloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Chlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Chloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Chloroform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Chloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Dibromochloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: TB-050621

Lab ID: 2101036-01

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Dichlorodifluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Ethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Hexachlorobutadiene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Isopropylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
m,p-Xylene	ND	1.0	1	B1E0079	05/07/2021	05/07/21 17:55	
Methylene chloride	ND	1.0	1	B1E0079	05/07/2021	05/07/21 17:55	
n-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
n-Propylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Naphthalene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
o-Xylene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
sec-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Styrene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
tert-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Tetrachloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Toluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Trichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Trichlorofluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Vinyl chloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 17:55	
Surrogate: 1,2-Dichloroethane-d4	102 %	64 - 155		B1E0079	05/07/2021	05/07/21 17:55	
Surrogate: 4-Bromofluorobenzene	92.2 %	73 - 124		B1E0079	05/07/2021	05/07/21 17:55	
Surrogate: Dibromofluoromethane	102 %	78 - 129		B1E0079	05/07/2021	05/07/21 17:55	
Surrogate: Toluene-d8	103 %	84 - 117		B1E0079	05/07/2021	05/07/21 17:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: CEFF

Lab ID: 2101036-02

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,1,1-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,1,2-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,1-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,1-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,1-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2,3-Trichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2-Dibromoethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,3-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,3-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
1,4-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
2,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
2-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
4-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
4-Isopropyltoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Benzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Bromobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Bromodichloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Bromoform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Bromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Carbon tetrachloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Chlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Chloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Chloroform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Chloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Dibromochloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: CEFF

Lab ID: 2101036-02

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Dichlorodifluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Ethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Hexachlorobutadiene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Isopropylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
m,p-Xylene	ND	1.0	1	B1E0079	05/07/2021	05/07/21 18:20	
Methylene chloride	ND	1.0	1	B1E0079	05/07/2021	05/07/21 18:20	
n-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
n-Propylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Naphthalene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
o-Xylene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
sec-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Styrene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
tert-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Tetrachloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Toluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Trichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Trichlorofluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Vinyl chloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:20	
Surrogate: 1,2-Dichloroethane-d4	101 %	64 - 155		B1E0079	05/07/2021	05/07/21 18:20	
Surrogate: 4-Bromofluorobenzene	93.6 %	73 - 124		B1E0079	05/07/2021	05/07/21 18:20	
Surrogate: Dibromofluoromethane	98.4 %	78 - 129		B1E0079	05/07/2021	05/07/21 18:20	
Surrogate: Toluene-d8	99.8 %	84 - 117		B1E0079	05/07/2021	05/07/21 18:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: CEFF

Lab ID: 2101036-02

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1E0195	05/13/2021	05/13/21 13:49	
Surrogate: 1,2-Dichlorobenzene-d4	70.3 %	13 - 99		B1E0195	05/13/2021	05/13/21 13:49	
Surrogate: 2-Fluorobiphenyl	86.7 %	8 - 111		B1E0195	05/13/2021	05/13/21 13:49	
Surrogate: 4-Terphenyl-d14	64.7 %	12 - 113		B1E0195	05/13/2021	05/13/21 13:49	
Surrogate: Nitrobenzene-d5	55.4 %	15 - 121		B1E0195	05/13/2021	05/13/21 13:49	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: CBT

Lab ID: 2101036-03

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,1,1-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,1,2-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,1-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,1-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,1-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2,3-Trichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2-Dibromoethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,3-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,3-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
1,4-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
2,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
2-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
4-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
4-Isopropyltoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Benzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Bromobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Bromodichloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Bromoform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Bromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Carbon tetrachloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Chlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Chloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Chloroform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Chloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Dibromochloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: CBT

Lab ID: 2101036-03

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Dichlorodifluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Ethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Hexachlorobutadiene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Isopropylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
m,p-Xylene	ND	1.0	1	B1E0079	05/07/2021	05/07/21 18:45	
Methylene chloride	ND	1.0	1	B1E0079	05/07/2021	05/07/21 18:45	
n-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
n-Propylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Naphthalene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
o-Xylene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
sec-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Styrene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
tert-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Tetrachloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Toluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Trichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Trichlorofluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Vinyl chloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 18:45	
Surrogate: 1,2-Dichloroethane-d4	101 %	64 - 155		B1E0079	05/07/2021	05/07/21 18:45	
Surrogate: 4-Bromofluorobenzene	96.7 %	73 - 124		B1E0079	05/07/2021	05/07/21 18:45	
Surrogate: Dibromofluoromethane	100 %	78 - 129		B1E0079	05/07/2021	05/07/21 18:45	
Surrogate: Toluene-d8	100 %	84 - 117		B1E0079	05/07/2021	05/07/21 18:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: CBT

Lab ID: 2101036-03

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1E0195	05/13/2021	05/13/21 14:16	
Surrogate: 1,2-Dichlorobenzene-d4	73.6 %	13 - 99		B1E0195	05/13/2021	05/13/21 14:16	
Surrogate: 2-Fluorobiphenyl	75.4 %	8 - 111		B1E0195	05/13/2021	05/13/21 14:16	
Surrogate: 4-Terphenyl-d14	66.4 %	12 - 113		B1E0195	05/13/2021	05/13/21 14:16	
Surrogate: Nitrobenzene-d5	54.7 %	15 - 121		B1E0195	05/13/2021	05/13/21 14:16	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: POX

Lab ID: 2101036-04

Alkalinity, Speciated by SM 2320B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	220	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	
Alkalinity, Total (as CaCO ₃)	220	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	

Total Organic Carbon by SM 5310B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1E0191	05/12/2021	05/13/21 00:31	

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,1,1-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,1,2-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,1-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,1-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,1-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2,3-Trichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2-Dibromoethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,3-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,3-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
1,4-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
2,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
2-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: POX

Lab ID: 2101036-04

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
4-Isopropyltoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Benzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Bromobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Bromodichloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Bromoform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Bromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Carbon tetrachloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Chlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Chloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Chloroform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Chloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Dibromochloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Dibromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Dichlorodifluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Ethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Hexachlorobutadiene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Isopropylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
m,p-Xylene	ND	1.0	1	B1E0079	05/07/2021	05/07/21 19:10	
Methylene chloride	ND	1.0	1	B1E0079	05/07/2021	05/07/21 19:10	
n-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
n-Propylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Naphthalene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
o-Xylene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
sec-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Styrene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
tert-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Tetrachloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Toluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Trichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Trichlorofluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	
Vinyl chloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:10	

Surrogate: 1,2-Dichloroethane-d4 98.8 % 64 - 155 B1E0079 05/07/2021 05/07/21 19:10

Surrogate: 4-Bromofluorobenzene 91.4 % 73 - 124 B1E0079 05/07/2021 05/07/21 19:10



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: POX

Lab ID: 2101036-04

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Dibromofluoromethane</i>	100 %	78 - 129		B1E0079	05/07/2021	05/07/21 19:10	
<i>Surrogate: Toluene-d8</i>	99.4 %	84 - 117		B1E0079	05/07/2021	05/07/21 19:10	

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B1E0195	05/13/2021	05/13/21 14:42	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	68.1 %	13 - 99		B1E0195	05/13/2021	05/13/21 14:42	
<i>Surrogate: 2-Fluorobiphenyl</i>	52.6 %	8 - 111		B1E0195	05/13/2021	05/13/21 14:42	
<i>Surrogate: 4-Terphenyl-d14</i>	58.7 %	12 - 113		B1E0195	05/13/2021	05/13/21 14:42	
<i>Surrogate: Nitrobenzene-d5</i>	52.1 %	15 - 121		B1E0195	05/13/2021	05/13/21 14:42	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: PF

Lab ID: 2101036-05

UV Absorption by EPA 415.3

Analyst: AH

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B1E0084	05/07/2021	05/07/21 18:55	

Alkalinity, Speciated by SM 2320B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	220	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	
Alkalinity, Total (as CaCO ₃)	220	5.0	1	B1E0082	05/07/2021	05/07/21 17:00	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	0.84	1	B1E0078	05/07/2021	05/07/21 14:52	

Total Organic Carbon by SM 5310B

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B1E0191	05/12/2021	05/13/21 00:53	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: INF

Lab ID: 2101036-06

Bromide by Ion Chromatography EPA 300

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.37	0.05	1	B1E0192	05/12/2021	05/13/21 16:37	

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,1,1-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,1,2-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,1-Dichloroethane	0.59	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,1-Dichloroethene	79	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,1-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2,3-Trichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2-Dibromoethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,3-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,3-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
1,4-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
2,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
2-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
4-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
4-Isopropyltoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Benzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Bromobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Bromodichloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Bromoform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Bromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Carbon tetrachloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Chlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: INF

Lab ID: 2101036-06

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Chloroform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Chloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Dibromochloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Dibromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Dichlorodifluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Ethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Hexachlorobutadiene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Isopropylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
m,p-Xylene	ND	1.0	1	B1E0079	05/07/2021	05/07/21 19:35	
Methylene chloride	ND	1.0	1	B1E0079	05/07/2021	05/07/21 19:35	
n-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
n-Propylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Naphthalene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
o-Xylene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
sec-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Styrene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
tert-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Tetrachloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Toluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Trichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Trichlorofluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Vinyl chloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 19:35	
Surrogate: 1,2-Dichloroethane-d4	102 %	64 - 155		B1E0079	05/07/2021	05/07/21 19:35	
Surrogate: 4-Bromofluorobenzene	97.3 %	73 - 124		B1E0079	05/07/2021	05/07/21 19:35	
Surrogate: Dibromofluoromethane	102 %	78 - 129		B1E0079	05/07/2021	05/07/21 19:35	
Surrogate: Toluene-d8	101 %	84 - 117		B1E0079	05/07/2021	05/07/21 19:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: INF

Lab ID: 2101036-06

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	35	2.0	1	B1E0175	05/12/2021	05/13/21 14:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.2 %</i>	<i>17 - 119</i>		B1E0175	05/12/2021	<i>05/13/21 14:02</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.6 %</i>	<i>10 - 133</i>		B1E0175	05/12/2021	<i>05/13/21 14:02</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>76.6 %</i>	<i>5 - 139</i>		B1E0175	05/12/2021	<i>05/13/21 14:02</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>71.7 %</i>	<i>13 - 150</i>		B1E0175	05/12/2021	<i>05/13/21 14:02</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: EW-02

Lab ID: 2101036-07

Bromide by Ion Chromatography EPA 300

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.23	0.05	1	B1E0192	05/12/2021	05/13/21 16:49	

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,1,1-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,1,2-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,1-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,1-Dichloroethene	20	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,1-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2,3-Trichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2-Dibromoethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,3-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,3-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
1,4-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
2,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
2-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
4-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
4-Isopropyltoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Benzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Bromobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Bromodichloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Bromoform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Bromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Carbon tetrachloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Chlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: EW-02

Lab ID: 2101036-07

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Chloroform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Chloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Dibromochloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Dibromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Dichlorodifluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Ethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Hexachlorobutadiene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Isopropylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
m,p-Xylene	ND	1.0	1	B1E0079	05/07/2021	05/07/21 20:00	
Methylene chloride	ND	1.0	1	B1E0079	05/07/2021	05/07/21 20:00	
n-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
n-Propylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Naphthalene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
o-Xylene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
sec-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Styrene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
tert-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Tetrachloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Toluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Trichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Trichlorofluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Vinyl chloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 20:00	
Surrogate: 1,2-Dichloroethane-d4	96.6 %	64 - 155		B1E0079	05/07/2021	05/07/21 20:00	
Surrogate: 4-Bromofluorobenzene	94.2 %	73 - 124		B1E0079	05/07/2021	05/07/21 20:00	
Surrogate: Dibromofluoromethane	97.2 %	78 - 129		B1E0079	05/07/2021	05/07/21 20:00	
Surrogate: Toluene-d8	100 %	84 - 117		B1E0079	05/07/2021	05/07/21 20:00	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: EW-02

Lab ID: 2101036-07

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	7.1	2.0	1	B1E0175	05/12/2021	05/13/21 14:28	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>65.4 %</i>	<i>17 - 119</i>		<i>B1E0175</i>	<i>05/12/2021</i>	<i>05/13/21 14:28</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>67.3 %</i>	<i>10 - 133</i>		<i>B1E0175</i>	<i>05/12/2021</i>	<i>05/13/21 14:28</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>73.1 %</i>	<i>5 - 139</i>		<i>B1E0175</i>	<i>05/12/2021</i>	<i>05/13/21 14:28</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>70.6 %</i>	<i>13 - 150</i>		<i>B1E0175</i>	<i>05/12/2021</i>	<i>05/13/21 14:28</i>	



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9171 Towne Centre Drive, Suite 375

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: MW-29

Lab ID: 2101036-08

Bromide by Ion Chromatography EPA 300

Analyst: AH

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.58	0.05	1	B1E0192	05/12/2021	05/13/21 17:00	

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,1,1-Trichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,1,2-Trichloroethane	0.57	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,1-Dichloroethane	1.8	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,1-Dichloroethene	260	5.0	10	B1E0079	05/07/2021	05/07/21 20:28	
1,1-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2,3-Trichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2-Dibromoethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2-Dichloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,3-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,3-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
1,4-Dichlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
2,2-Dichloropropane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
2-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
4-Chlorotoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
4-Isopropyltoluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Benzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Bromobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Bromodichloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Bromoform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Bromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Carbon tetrachloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Chlorobenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: MW-29

Lab ID: 2101036-08

Volatile Organic Compounds by EPA 8260B

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Chloroform	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Chloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Dibromochloromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Dibromomethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Dichlorodifluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Ethylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Hexachlorobutadiene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Isopropylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
m,p-Xylene	ND	1.0	1	B1E0079	05/07/2021	05/07/21 21:18	
Methylene chloride	ND	1.0	1	B1E0079	05/07/2021	05/07/21 21:18	
n-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
n-Propylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Naphthalene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
o-Xylene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
sec-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Styrene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
tert-Butylbenzene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Tetrachloroethene	0.62	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Toluene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Trichloroethene	2.1	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Trichlorofluoromethane	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
Vinyl chloride	ND	0.50	1	B1E0079	05/07/2021	05/07/21 21:18	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>64 - 155</i>		B1E0079	05/07/2021	<i>05/07/21 20:28</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>64 - 155</i>		B1E0079	05/07/2021	<i>05/07/21 21:18</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.0 %</i>	<i>73 - 124</i>		B1E0079	05/07/2021	<i>05/07/21 20:28</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.6 %</i>	<i>73 - 124</i>		B1E0079	05/07/2021	<i>05/07/21 21:18</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>78 - 129</i>		B1E0079	05/07/2021	<i>05/07/21 20:28</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>78 - 129</i>		B1E0079	05/07/2021	<i>05/07/21 21:18</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.8 %</i>	<i>84 - 117</i>		B1E0079	05/07/2021	<i>05/07/21 21:18</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.2 %</i>	<i>84 - 117</i>		B1E0079	05/07/2021	<i>05/07/21 20:28</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Client Sample ID: MW-29

Lab ID: 2101036-08

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

Analyst: EM

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	110	2.0	1	B1E0175	05/12/2021	05/13/21 14:55	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.8 %</i>	<i>17 - 119</i>		B1E0175	05/12/2021	<i>05/13/21 14:55</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.0 %</i>	<i>10 - 133</i>		B1E0175	05/12/2021	<i>05/13/21 14:55</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>82.4 %</i>	<i>5 - 139</i>		B1E0175	05/12/2021	<i>05/13/21 14:55</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>74.5 %</i>	<i>13 - 150</i>		B1E0175	05/12/2021	<i>05/13/21 14:55</i>	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

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

Batch B1E0082 - No_Prep_WC1_W

Blank (B1E0082-BLK1)

Prepared: 5/7/2021 Analyzed: 5/7/2021

Alkalinity, Bicarbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	3.4
Alkalinity, Total (as CaCO ₃)	ND	5.0	3.4

LCS (B1E0082-BS1)

Prepared: 5/7/2021 Analyzed: 5/7/2021

Alkalinity, Total (as CaCO ₃)	101.940	5.0	3.4	99.9580	102	80 - 120

Matrix Spike (B1E0082-MS1)

Source: 2101036-05

Prepared: 5/7/2021 Analyzed: 5/7/2021

Alkalinity, Total (as CaCO ₃)	323.920	5.0	3.4	100.184	216.810	107	80 - 120

Matrix Spike Dup (B1E0082-MSD1)

Source: 2101036-05

Prepared: 5/7/2021 Analyzed: 5/7/2021

Alkalinity, Total (as CaCO ₃)	322.840	5.0	3.4	100.184	216.810	106	80 - 120	0.334	20



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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 B1E0078 - No_Prep_WC1_W

Blank (B1E0078-BLK1)

Prepared: 5/7/2021 Analyzed: 5/7/2021

Residue, Suspended ND 1.0 1.0

LCS (B1E0078-BS1)

Prepared: 5/7/2021 Analyzed: 5/7/2021

Residue, Suspended 93.0000 10 10 100.000 93.0 80 - 120

Duplicate (B1E0078-DUP1)

Source: 2101033-01

Prepared: 5/7/2021 Analyzed: 5/7/2021

Residue, Suspended 19.0000 2.5 2.5 32.7500 53.1 10 R1



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Bromide by Ion Chromatography EPA 300 - Quality Control

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

Batch B1E0192 - No_Prep_IC1_W

Blank (B1E0192-BLK1)

Prepared: 5/12/2021 Analyzed: 5/13/2021

Bromide ND 0.05 0.02

LCS (B1E0192-BS1)

Prepared: 5/12/2021 Analyzed: 5/13/2021

Bromide 1.03690 0.05 0.02 1.00000 104 90 - 110

Duplicate (B1E0192-DUP1)

Source: 2101036-08

Prepared: 5/12/2021 Analyzed: 5/13/2021

Bromide 0.527200 0.05 0.02 0.576200 8.88 20

Matrix Spike (B1E0192-MS1)

Source: 2101036-08

Prepared: 5/12/2021 Analyzed: 5/13/2021

Bromide 3.11710 0.05 0.02 2.50000 0.576200 102 80 - 120

Matrix Spike Dup (B1E0192-MSD1)

Source: 2101036-08

Prepared: 5/12/2021 Analyzed: 5/13/2021

Bromide 3.16770 0.05 0.02 2.50000 0.576200 104 80 - 120 1.61 20



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

UV Absorption by EPA 415.3 - Quality Control

Analyte	Result (1/cm)	PQL (1/cm)	MDL (1/cm)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B1E0084 - No_Prep_II_W

Duplicate (B1E0084-DUP1)

Source: 2101036-05

Prepared: 5/7/2021 Analyzed: 5/7/2021

UV Absorption	ND	0.01	0.01		ND			NR	20	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Total Organic Carbon by SM 5310B - Quality Control

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

Batch B1E0191 - No_Prep_II_W

Blank (B1E0191-BLK1)

Prepared: 5/12/2021 Analyzed: 5/12/2021

Organic Carbon, Total ND 3.0 1.3

LCS (B1E0191-BS1)

Prepared: 5/12/2021 Analyzed: 5/12/2021

Organic Carbon, Total 22.4500 3.0 1.3 25.0152 89.7 80 - 120

LCS Dup (B1E0191-BSD1)

Prepared: 5/12/2021 Analyzed: 5/12/2021

Organic Carbon, Total 22.1500 3.0 1.3 25.0152 88.5 80 - 120 1.35 20

Duplicate (B1E0191-DUP1)

Source: 2101039-01

Prepared: 5/12/2021 Analyzed: 5/13/2021

Organic Carbon, Total 6.42000 3.0 1.3 5.34000 18.4 20



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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 B1E0079 - MSVOA_W

Blank (B1E0079-BLK1)

Prepared: 5/7/2021 Analyzed: 5/7/2021

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.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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 B1E0079 - MSVOA_W (continued)

Blank (B1E0079-BLK1) - Continued

Prepared: 5/7/2021 Analyzed: 5/7/2021

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	25.01		25.0000	100	64 - 155
Surrogate: 4-Bromofluorobenzene	23.06		25.0000	92.2	73 - 124
Surrogate: Dibromofluoromethane	25.14		25.0000	101	78 - 129
Surrogate: Toluene-d8	24.72		25.0000	98.9	84 - 117

LCS (B1E0079-BS1)

Prepared: 5/7/2021 Analyzed: 5/7/2021

1,1,1,2-Tetrachloroethane	19.6100	0.50	0.11	20.0000	98.0	79 - 116
1,1,1-Trichloroethane	19.6100	0.50	0.21	20.0000	98.0	73 - 130
1,1,2,2-Tetrachloroethane	16.8400	0.50	0.36	20.0000	84.2	71 - 122
1,1,2-Trichloroethane	16.9600	0.50	0.25	20.0000	84.8	70 - 124
1,1-Dichloroethane	18.4400	0.50	0.09	20.0000	92.2	69 - 128
1,1-Dichloroethene	19.1000	0.50	0.13	20.0000	95.5	65 - 137
1,1-Dichloropropene	19.0600	0.50	0.13	20.0000	95.3	74 - 129
1,2,3-Trichloropropane	16.5600	0.50	0.39	20.0000	82.8	74 - 123
1,2,3-Trichlorobenzene	17.8200	0.50	0.18	20.0000	89.1	59 - 130
1,2,4-Trichlorobenzene	17.5400	0.50	0.16	20.0000	87.7	65 - 125
1,2,4-Trimethylbenzene	19.5300	0.50	0.14	20.0000	97.6	88 - 124
1,2-Dibromo-3-chloropropane	17.3100	0.50	0.41	20.0000	86.6	61 - 127
1,2-Dibromoethane	17.0500	0.50	0.24	20.0000	85.2	72 - 125
1,2-Dichlorobenzene	18.1800	0.50	0.20	20.0000	90.9	84 - 113
1,2-Dichloroethane	17.7500	0.50	0.20	20.0000	88.8	68 - 130
1,2-Dichloropropane	17.1900	0.50	0.15	20.0000	86.0	77 - 121
1,3,5-Trimethylbenzene	19.3700	0.50	0.13	20.0000	96.8	83 - 124
1,3-Dichlorobenzene	18.5800	0.50	0.16	20.0000	92.9	83 - 112
1,3-Dichloropropane	17.9800	0.50	0.21	20.0000	89.9	77 - 119



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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 B1E0079 - MSVOA_W (continued)

LCS (B1E0079-BS1) - Continued

Prepared: 5/7/2021 Analyzed: 5/7/2021

1,4-Dichlorobenzene	18.0100	0.50	0.17	20.0000		90.0	79 - 115		
2,2-Dichloropropane	19.2800	0.50	0.38	20.0000		96.4	67 - 149		
2-Chlorotoluene	18.7900	0.50	0.11	20.0000		94.0	81 - 119		
4-Chlorotoluene	18.7700	0.50	0.12	20.0000		93.8	86 - 117		
4-Isopropyltoluene	19.5100	0.50	0.11	20.0000		97.6	82 - 131		
Benzene	18.5900	0.50	0.13	20.0000		93.0	75 - 124		
Bromobenzene	18.5100	0.50	0.21	20.0000		92.6	82 - 108		
Bromodichloromethane	18.5500	0.50	0.14	20.0000		92.8	80 - 120		
Bromoform	20.0000	0.50	0.20	20.0000		100	70 - 123		
Bromomethane	23.8200	0.50	0.40	20.0000		119	44 - 151		
Carbon tetrachloride	20.1300	0.50	0.09	20.0000		101	62 - 140		
Chlorobenzene	18.5600	0.50	0.13	20.0000		92.8	80 - 112		
Chloroethane	19.0700	0.50	0.15	20.0000		95.4	42 - 167		
Chloroform	18.4900	0.50	0.11	20.0000		92.4	77 - 122		
Chloromethane	17.9700	0.50	0.12	20.0000		89.8	33 - 153		
cis-1,2-Dichloroethene	18.2600	0.50	0.14	20.0000		91.3	75 - 121		
cis-1,3-Dichloropropene	18.4400	0.50	0.13	20.0000		92.2	73 - 127		
Dibromochloromethane	19.2000	0.50	0.16	20.0000		96.0	77 - 122		
Dibromomethane	17.0200	0.50	0.19	20.0000		85.1	75 - 121		
Dichlorodifluoromethane	19.8800	0.50	0.18	20.0000		99.4	0 - 171		
Ethylbenzene	19.3000	0.50	0.13	20.0000		96.5	82 - 119		
Hexachlorobutadiene	19.1700	0.50	0.15	20.0000		95.8	71 - 131		
Isopropylbenzene	19.2700	0.50	0.10	20.0000		96.4	75 - 126		
m,p-Xylene	39.1900	1.0	0.19	40.0000		98.0	86 - 119		
Methylene chloride	19.6300	1.0	0.71	20.0000		98.2	76 - 125		
n-Butylbenzene	19.3100	0.50	0.11	20.0000		96.6	81 - 125		
n-Propylbenzene	19.5300	0.50	0.10	20.0000		97.6	78 - 130		
Naphthalene	16.5400	0.50	0.41	20.0000		82.7	47 - 128		
o-Xylene	19.0700	0.50	0.13	20.0000		95.4	85 - 119		
sec-Butylbenzene	19.8500	0.50	0.09	20.0000		99.2	78 - 130		
Styrene	20.3400	0.50	0.13	20.0000		102	62 - 148		
tert-Butylbenzene	19.3900	0.50	0.09	20.0000		97.0	77 - 125		
Tetrachloroethene	19.2400	0.50	0.10	20.0000		96.2	73 - 120		
Toluene	18.2300	0.50	0.12	20.0000		91.2	79 - 119		
trans-1,2-Dichloroethene	18.6100	0.50	0.09	20.0000		93.0	70 - 129		
Trichloroethene	18.3900	0.50	0.10	20.0000		92.0	73 - 117		
Trichlorofluoromethane	22.7200	0.50	0.23	20.0000		114	59 - 135		
Vinyl chloride	18.5700	0.50	0.13	20.0000		92.8	58 - 132		
Surrogate: 1,2-Dichloroethane-d4	24.42			25.0000		97.7	64 - 155		
Surrogate: 4-Bromofluorobenzene	24.44			25.0000		97.8	73 - 124		
Surrogate: Dibromofluoromethane	25.27			25.0000		101	78 - 129		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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

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

Batch B1E0079 - MSVOA_W (continued)

LCS (B1E0079-BS1) - Continued

Prepared: 5/7/2021 Analyzed: 5/7/2021

Surrogate: Toluene-d8 24.43 25.0000 97.7 84 - 117

LCS Dup (B1E0079-BS1)

Prepared: 5/7/2021 Analyzed: 5/7/2021

1,1,1,2-Tetrachloroethane	20.0600	0.50	0.11	20.0000	100	79 - 116	2.27	20
1,1,1-Trichloroethane	19.2100	0.50	0.21	20.0000	96.0	73 - 130	2.06	20
1,1,2,2-Tetrachloroethane	18.6300	0.50	0.36	20.0000	93.2	71 - 122	10.1	20
1,1,2-Trichloroethane	19.2800	0.50	0.25	20.0000	96.4	70 - 124	12.8	20
1,1-Dichloroethane	18.7400	0.50	0.09	20.0000	93.7	69 - 128	1.61	20
1,1-Dichloroethene	18.1900	0.50	0.13	20.0000	91.0	65 - 137	4.88	20
1,1-Dichloropropene	19.6800	0.50	0.13	20.0000	98.4	74 - 129	3.20	20
1,2,3-Trichloropropane	18.3100	0.50	0.39	20.0000	91.6	74 - 123	10.0	20
1,2,3-Trichlorobenzene	19.8600	0.50	0.18	20.0000	99.3	59 - 130	10.8	20
1,2,4-Trichlorobenzene	19.3800	0.50	0.16	20.0000	96.9	65 - 125	9.97	20
1,2,4-Trimethylbenzene	19.5200	0.50	0.14	20.0000	97.6	88 - 124	0.0512	20
1,2-Dibromo-3-chloropropane	21.0400	0.50	0.41	20.0000	105	61 - 127	19.5	20
1,2-Dibromoethane	18.8300	0.50	0.24	20.0000	94.2	72 - 125	9.92	20
1,2-Dichlorobenzene	19.1800	0.50	0.20	20.0000	95.9	84 - 113	5.35	20
1,2-Dichloroethane	19.6600	0.50	0.20	20.0000	98.3	68 - 130	10.2	20
1,2-Dichloropropane	18.8600	0.50	0.15	20.0000	94.3	77 - 121	9.26	20
1,3,5-Trimethylbenzene	19.2000	0.50	0.13	20.0000	96.0	83 - 124	0.882	20
1,3-Dichlorobenzene	18.6200	0.50	0.16	20.0000	93.1	83 - 112	0.215	20
1,3-Dichloropropane	18.6100	0.50	0.21	20.0000	93.0	77 - 119	3.44	20
1,4-Dichlorobenzene	18.0400	0.50	0.17	20.0000	90.2	79 - 115	0.166	20
2,2-Dichloropropane	18.7400	0.50	0.38	20.0000	93.7	67 - 149	2.84	20
2-Chlorotoluene	18.8300	0.50	0.11	20.0000	94.2	81 - 119	0.213	20
4-Chlorotoluene	19.3300	0.50	0.12	20.0000	96.6	86 - 117	2.94	20
4-Isopropyltoluene	19.3100	0.50	0.11	20.0000	96.6	82 - 131	1.03	20
Benzene	19.4100	0.50	0.13	20.0000	97.0	75 - 124	4.32	20
Bromobenzene	18.2400	0.50	0.21	20.0000	91.2	82 - 108	1.47	20
Bromodichloromethane	19.9600	0.50	0.14	20.0000	99.8	80 - 120	7.32	20
Bromoform	20.5700	0.50	0.20	20.0000	103	70 - 123	2.81	20
Bromomethane	25.0200	0.50	0.40	20.0000	125	44 - 151	4.91	20
Carbon tetrachloride	21.1400	0.50	0.09	20.0000	106	62 - 140	4.89	20
Chlorobenzene	18.4200	0.50	0.13	20.0000	92.1	80 - 112	0.757	20
Chloroethane	19.4600	0.50	0.15	20.0000	97.3	42 - 167	2.02	20
Chloroform	18.6700	0.50	0.11	20.0000	93.4	77 - 122	0.969	20
Chloromethane	17.5400	0.50	0.12	20.0000	87.7	33 - 153	2.42	20
cis-1,2-Dichloroethene	18.9800	0.50	0.14	20.0000	94.9	75 - 121	3.87	20
cis-1,3-Dichloropropene	19.8300	0.50	0.13	20.0000	99.2	73 - 127	7.26	20
Dibromochloromethane	19.9500	0.50	0.16	20.0000	99.8	77 - 122	3.83	20
Dibromomethane	19.4600	0.50	0.19	20.0000	97.3	75 - 121	13.4	20
Dichlorodifluoromethane	18.9600	0.50	0.18	20.0000	94.8	0 - 171	4.74	20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B1E0079 - MSVOA_W (continued)

LCS Dup (B1E0079-BSD1) - Continued

Prepared: 5/7/2021 Analyzed: 5/7/2021

Ethylbenzene	19.1300	0.50	0.13	20.0000		95.6	82 - 119	0.885	20	
Hexachlorobutadiene	19.3900	0.50	0.15	20.0000		97.0	71 - 131	1.14	20	
Isopropylbenzene	19.3000	0.50	0.10	20.0000		96.5	75 - 126	0.156	20	
m,p-Xylene	38.7800	1.0	0.19	40.0000		97.0	86 - 119	1.05	20	
Methylene chloride	19.3700	1.0	0.71	20.0000		96.8	76 - 125	1.33	20	
n-Butylbenzene	19.1700	0.50	0.11	20.0000		95.8	81 - 125	0.728	20	
n-Propylbenzene	19.2900	0.50	0.10	20.0000		96.4	78 - 130	1.24	20	
Naphthalene	19.8500	0.50	0.41	20.0000		99.2	47 - 128	18.2	20	
o-Xylene	18.9400	0.50	0.13	20.0000		94.7	85 - 119	0.684	20	
sec-Butylbenzene	19.7400	0.50	0.09	20.0000		98.7	78 - 130	0.556	20	
Styrene	20.1500	0.50	0.13	20.0000		101	62 - 148	0.939	20	
tert-Butylbenzene	19.2400	0.50	0.09	20.0000		96.2	77 - 125	0.777	20	
Tetrachloroethene	19.2400	0.50	0.10	20.0000		96.2	73 - 120	0.00	20	
Toluene	19.5500	0.50	0.12	20.0000		97.8	79 - 119	6.99	20	
trans-1,2-Dichloroethene	18.6300	0.50	0.09	20.0000		93.2	70 - 129	0.107	20	
Trichloroethene	18.8000	0.50	0.10	20.0000		94.0	73 - 117	2.20	20	
Trichlorofluoromethane	22.2000	0.50	0.23	20.0000		111	59 - 135	2.32	20	
Vinyl chloride	18.1300	0.50	0.13	20.0000		90.6	58 - 132	2.40	20	
Surrogate: 1,2-Dichloroethane-d4	24.15			25.0000		96.6	64 - 155			
Surrogate: 4-Bromofluorobenzene	24.46			25.0000		97.8	73 - 124			
Surrogate: Dibromofluoromethane	24.95			25.0000		99.8	78 - 129			
Surrogate: Toluene-d8	25.54			25.0000		102	84 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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 B1E0175 - MSSEMI_W

Blank (B1E0175-BLK1)

Prepared: 5/12/2021 Analyzed: 5/13/2021

1,4-Dioxane	ND	2.0	0.84						
Surrogate: 1,2-Dichlorobenzene-d	53.93			100.000		53.9	17 - 119		
Surrogate: 2-Fluorobiphenyl	59.76			100.000		59.8	10 - 133		
Surrogate: 4-Terphenyl-d14	70.44			100.000		70.4	5 - 139		
Surrogate: Nitrobenzene-d5	61.29			100.000		61.3	13 - 150		

LCS (B1E0175-BS1)

Prepared: 5/12/2021 Analyzed: 5/13/2021

1,4-Dioxane	109.590	2.0	0.84	100.000		110	75 - 155		
Surrogate: 1,2-Dichlorobenzene-d	55.25			100.000		55.2	17 - 119		
Surrogate: 2-Fluorobiphenyl	68.56			100.000		68.6	10 - 133		
Surrogate: 4-Terphenyl-d14	77.42			100.000		77.4	5 - 139		
Surrogate: Nitrobenzene-d5	71.39			100.000		71.4	13 - 150		

LCS Dup (B1E0175-BSD1)

Prepared: 5/12/2021 Analyzed: 5/13/2021

1,4-Dioxane	111.080	2.0	0.84	100.000		111	75 - 155	1.35	20
Surrogate: 1,2-Dichlorobenzene-d	56.15			100.000		56.2	17 - 119		
Surrogate: 2-Fluorobiphenyl	67.89			100.000		67.9	10 - 133		
Surrogate: 4-Terphenyl-d14	75.88			100.000		75.9	5 - 139		
Surrogate: Nitrobenzene-d5	72.67			100.000		72.7	13 - 150		



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

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	RPD Limit	Notes

Batch B1E0195 - MSSEMI_W

Blank (B1E0195-BLK1)

Prepared: 5/13/2021 Analyzed: 5/13/2021

1,4-Dioxane	ND	0.20	0.05						
Surrogate: 1,2-Dichlorobenzene-d	1.294			1.00000	129	13 - 99			S12
Surrogate: 2-Fluorobiphenyl	1.139			1.00000	114	8 - 111			S12
Surrogate: 4-Terphenyl-d14	6.192			1.00000	619	12 - 113			S16
Surrogate: Nitrobenzene-d5	1.062			1.00000	106	15 - 121			

LCS (B1E0195-BS1)

Prepared: 5/13/2021 Analyzed: 5/13/2021

1,4-Dioxane	3.44349	0.20	0.05	1.00000	344	75 - 155			L5
Surrogate: 1,2-Dichlorobenzene-d	0.6704			1.00000	67.0	13 - 99			
Surrogate: 2-Fluorobiphenyl	0.7768			1.00000	77.7	8 - 111			
Surrogate: 4-Terphenyl-d14	0.5085			1.00000	50.8	12 - 113			
Surrogate: Nitrobenzene-d5	0.6857			1.00000	68.6	15 - 121			

LCS Dup (B1E0195-BSD1)

Prepared: 5/13/2021 Analyzed: 5/13/2021

1,4-Dioxane	2.09737	0.20	0.05	1.00000	210	75 - 155	48.6	20	L5, R
Surrogate: 1,2-Dichlorobenzene-d	0.3075			1.00000	30.7	13 - 99			
Surrogate: 2-Fluorobiphenyl	0.3778			1.00000	37.8	8 - 111			
Surrogate: 4-Terphenyl-d14	0.2561			1.00000	25.6	12 - 113			
Surrogate: Nitrobenzene-d5	0.2716			1.00000	27.2	15 - 121			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/27/2021

Notes and Definitions

S16	Surrogate recovery is outside the laboratory acceptance limit. Re-extraction is not possible due to insufficient sample.
S12	Surrogate recovery outside in-house established limit but within method default criteria.
R1	RPD value outside acceptance criteria. Reanalysis not possible due to insufficient amount of sample.
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.
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.

Laboratory Report

May 25, 2021

Advanced Technology Laboratories
PO Box 92797
Long Beach, CA 90809-2797

Attn: Rahul Nair

Element Job No: 247292
Purchase Order: COD - CC
Project Name: 2101036 / Groundwater
Samples Received: 2
Date Received: 05-07-2021

Analysis

Page

Bromate by SOP 5600, Rev 4

2


Michael Shelton
Technical Director
Cathy Moore Ph.D
Principal Chemist

Bromate by SOP 5600, Rev. 4
Ion Chromatography-Tandem Mass Spectrometry

Sample preparation: An aliquot of sample was spiked with internal standard (bromate-¹⁸O₃), and diluted with water. The sample solutions were analyzed using IC-MS/MS.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>
ATL Lab#: 2101036-04 / POX	ND
ATL Lab#: 2101036-06 / INF	ND
Method Blank	ND
Detection Limit	0.5
Date Analyzed: 05-20-2021	

Quality Control Summary

Sample ID: ATL Lab#: 2101036-06 / INF

Units: Parts Per Billion (µg/L)

<u>Analyte</u>	<u>Sample Result</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>	<u>Spike Duplicate</u>	<u>Duplicate % Rec</u>	<u>RPD</u>
Bromate	ND	5.00	4.89	98	5.56	111	13
QC Guidelines				80-120		80-120	NMT 15

ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 2101036

SENDING LABORATORY:

Advanced Technology Laboratories
 3275 Walnut Avenue
 Signal Hill, CA 90755
 Phone: 562.989.4045
 Fax: 562.989.6348
 Project Manager: Rahul Nair
 (Rahul.Nair@atlglobal.com)
 Sampler: Ruben Sanchez

RECEIVING LABORATORY:

Element Materials Technology
 9240 Santa Fe Springs Road
 Santa Fe Springs, CA 90670
 Phone : (562) 948-2225
 Fax: (562) 948-5850
 PO#: SC15190-Standard TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

QC Requirements:

☒ Routine ☐ RWQCB
☐ Caltrans ☐ Level IV*
☐ Legal ☐ Other: _____

* All Level IV sample containers (including empty ones) must be returned to ATL 30 days after receipt.

EDD Requirements:

☐ Standard Excel
☐ Geotracker EDF
☐ Other: _____

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 2101036-04 ^① / POX Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS] 1-Poly Unpres - 125mL	05/21/21 17:00	Water 06/03/21 11:25	05/06/21 11:25	
ATL Lab#: 2101036-06 ^② / INF Bromate_ICMS/MS_SUB [Bromate by IC-MS/MS]	05/21/21 17:00	Water 06/03/21 11:40	05/06/21 11:40	

05-07-2021 Also has: ① F
② A

247292

Approved by:

ATL Project Manager [Signature] 5/6/21
 Date
 Released By ATL Sample Control [Signature] 5/17/21 1041
 Date Time
 Released By Courier Max Rothacker 5/17/21 11:20
 Date Time

Received By Courier Max Rothacker 5/17/21 1041
 Date Time
 Received By Subcontract Laboratory Javi Jy 05-07-2021 11:20
 Date Time

Released By Date Time

Received By Date Time

2101036

Date: 5/6/2021
Page 1 of 1

PROJECT: Raytheon Main GETS Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto
QA Manager Ross Horton
Phone 858.455.6500
Fax 858.455.6533

Sampled By: Ruben Sanchez				SAMPLE COLLECTION		MATRIX		PRESERVATION		CONTAINERS		ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOAs		SPECIAL HANDLING				Laboratory								
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270 SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 Hour TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested	REMARKS		
	TB-050621	5/6/2021	8:00		X	X			X	2						X																				
	CEFF	5/6/2021	11:15	X		X			X	3					1	X									X	X										
	CBT	5/6/2021	11:20	X		X			X	3					1	X								X	X											
	POX	5/6/2021	11:25	X		X		X	X	5	1	1			1	X	X		X	X				X	X											
	PF	5/6/2021	11:35	X				X	X	2		1	1	1					X	X	X	X														
	INF	5/6/2021	11:40	X		X			X	3	2				1	X	X	X					X					X								
	EW-02	5/6/2021	11:55	X		X			X	3	1				1	X		X					X				X									
	MW-29	5/6/2021	12:10	X		X			X	3	1				1	X		X					X				X									
Total number of containers per analysis:										24	5	2	1	1	1	6											Total No. of Containers: 39									

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<i>[Signature]</i> H+H	5-6-21 12:30	<i>[Signature]</i> H+H	5-6-21 12:30
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<i>[Signature]</i> H+H	5-6-21 15:13	<i>[Signature]</i> A72	5-6-21 15:13

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

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.

3.6

Temperature on receipt

Send Results to:
Steve Netto & Ross Horton
 9171 Towne Centre Drive
 Suite 375
 San Diego, CA 92122
 Ph: 858.455.6500
snetto@hargis.com
rhorton@hargis.com



May 28, 2021

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

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

Re: ATL Work Order Number : 2101143

Client Reference : Raytheon Main GETS Mid Month Sample 532.15

Enclosed are the results for sample(s) received on May 20, 2021 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 your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amy Leung', with a long horizontal flourish extending to the right.

Amy Leung
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

3275 Walnut Avenue, Signal Hill, CA 90755 • Tel: 562-989-4045 • Fax: 562-989-4040
www.atlglobal.com



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-052021	2101143-01	Water	5/20/21 8:00	5/20/21 15:33
CEFF	2101143-02	Water	5/20/21 8:58	5/20/21 15:33
CBT	2101143-03	Water	5/20/21 9:04	5/20/21 15:33
POX	2101143-04	Water	5/20/21 9:12	5/20/21 15:33
INF	2101143-05	Water	5/20/21 9:31	5/20/21 15:33
EW-02	2101143-06	Water	5/20/21 10:06	5/20/21 15:33
MW-29	2101143-07	Water	5/20/21 10:32	5/20/21 15:33



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: TB-052021

Lab ID: 2101143-01

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	B1E0433	05/26/2021	05/26/21 20:30	
1,1,1-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,1,2-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,1-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,1-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,1-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2,3-Trichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2-Dibromoethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,3-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,3-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
1,4-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
2,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
2-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
4-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
4-Isopropyltoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Benzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Bromobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Bromodichloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Bromoform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Bromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Carbon tetrachloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Chlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Chloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Chloroform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Chloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: TB-052021

Lab ID: 2101143-01

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Dibromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Dichlorodifluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Ethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Hexachlorobutadiene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Isopropylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
m,p-Xylene	ND	1.0	1	B1E0433	05/26/2021	05/26/21 20:30	
Methylene chloride	ND	1.0	1	B1E0433	05/26/2021	05/26/21 20:30	
n-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
n-Propylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Naphthalene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
o-Xylene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
sec-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Styrene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
tert-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Tetrachloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Toluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Trichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Trichlorofluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
Vinyl chloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.2 %</i>	<i>64 - 155</i>		B1E0433	05/26/2021	<i>05/26/21 20:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.7 %</i>	<i>73 - 124</i>		B1E0433	05/26/2021	<i>05/26/21 20:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.4 %</i>	<i>78 - 129</i>		B1E0433	05/26/2021	<i>05/26/21 20:30</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.4 %</i>	<i>84 - 117</i>		B1E0433	05/26/2021	<i>05/26/21 20:30</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: CEFF

Lab ID: 2101143-02

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	B1E0433	05/26/2021	05/26/21 20:55	
1,1,1-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,1,2-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,1-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,1-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,1-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2,3-Trichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2-Dibromoethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,3-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,3-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
1,4-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
2,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
2-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
4-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
4-Isopropyltoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Benzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Bromobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Bromodichloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Bromoform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Bromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Carbon tetrachloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Chlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Chloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Chloroform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Chloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: CEFF

Lab ID: 2101143-02

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Dibromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Dichlorodifluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Ethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Hexachlorobutadiene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Isopropylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
m,p-Xylene	ND	1.0	1	B1E0433	05/26/2021	05/26/21 20:55	
Methylene chloride	ND	1.0	1	B1E0433	05/26/2021	05/26/21 20:55	
n-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
n-Propylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Naphthalene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
o-Xylene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
sec-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Styrene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
tert-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Tetrachloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Toluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Trichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Trichlorofluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
Vinyl chloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 20:55	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.0 %</i>	<i>64 - 155</i>		B1E0433	05/26/2021	<i>05/26/21 20:55</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.0 %</i>	<i>73 - 124</i>		B1E0433	05/26/2021	<i>05/26/21 20:55</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.1 %</i>	<i>78 - 129</i>		B1E0433	05/26/2021	<i>05/26/21 20:55</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.4 %</i>	<i>84 - 117</i>		B1E0433	05/26/2021	<i>05/26/21 20:55</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: CEFF

Lab ID: 2101143-02

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

Analyst: AC

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	B1E0364	05/21/2021	05/24/21 16:51	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>71.6 %</i>		<i>13 - 99</i>		B1E0364	05/21/2021	<i>05/24/21 16:51</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>15.9 %</i>		<i>8 - 111</i>		B1E0364	05/21/2021	<i>05/24/21 16:51</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>185 %</i>		<i>12 - 113</i>		B1E0364	05/21/2021	<i>05/24/21 16:51</i>	S16
<i>Surrogate: Nitrobenzene-d5</i>	<i>29.2 %</i>		<i>15 - 121</i>		B1E0364	05/21/2021	<i>05/24/21 16:51</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: CBT

Lab ID: 2101143-03

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	B1E0433	05/26/2021	05/26/21 21:20	
1,1,1-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,1,2-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,1-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,1-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,1-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2,3-Trichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2-Dibromoethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,3-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,3-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
1,4-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
2,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
2-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
4-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
4-Isopropyltoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Benzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Bromobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Bromodichloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Bromoform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Bromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Carbon tetrachloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Chlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Chloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Chloroform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Chloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: CBT

Lab ID: 2101143-03

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Dibromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Dichlorodifluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Ethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Hexachlorobutadiene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Isopropylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
m,p-Xylene	ND	1.0	1	B1E0433	05/26/2021	05/26/21 21:20	
Methylene chloride	ND	1.0	1	B1E0433	05/26/2021	05/26/21 21:20	
n-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
n-Propylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Naphthalene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
o-Xylene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
sec-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Styrene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
tert-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Tetrachloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Toluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Trichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Trichlorofluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
Vinyl chloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.4 %</i>	<i>64 - 155</i>		B1E0433	05/26/2021	<i>05/26/21 21:20</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.3 %</i>	<i>73 - 124</i>		B1E0433	05/26/2021	<i>05/26/21 21:20</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>96.7 %</i>	<i>78 - 129</i>		B1E0433	05/26/2021	<i>05/26/21 21:20</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>84 - 117</i>		B1E0433	05/26/2021	<i>05/26/21 21:20</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: CBT

Lab ID: 2101143-03

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

Analyst: AC

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	B1E0364	05/21/2021	05/24/21 17:18	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	78.3 %		13 - 99		B1E0364	05/21/2021	05/24/21 17:18	
<i>Surrogate: 2-Fluorobiphenyl</i>	9.49 %		8 - 111		B1E0364	05/21/2021	05/24/21 17:18	
<i>Surrogate: 4-Terphenyl-d14</i>	290 %		12 - 113		B1E0364	05/21/2021	05/24/21 17:18	S16
<i>Surrogate: Nitrobenzene-d5</i>	13.1 %		15 - 121		B1E0364	05/21/2021	05/24/21 17:18	S16



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: POX

Lab ID: 2101143-04

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	B1E0433	05/26/2021	05/26/21 21:45	
1,1,1-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,1,2-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,1-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,1-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,1-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2,3-Trichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2-Dibromoethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,3-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,3-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
1,4-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
2,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
2-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
4-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
4-Isopropyltoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Benzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Bromobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Bromodichloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Bromoform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Bromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Carbon tetrachloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Chlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Chloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Chloroform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Chloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: POX

Lab ID: 2101143-04

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Dibromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Dichlorodifluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Ethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Hexachlorobutadiene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Isopropylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
m,p-Xylene	ND	1.0	1	B1E0433	05/26/2021	05/26/21 21:45	
Methylene chloride	ND	1.0	1	B1E0433	05/26/2021	05/26/21 21:45	
n-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
n-Propylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Naphthalene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
o-Xylene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
sec-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Styrene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
tert-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Tetrachloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Toluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Trichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Trichlorofluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
Vinyl chloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 21:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.3 %</i>	<i>64 - 155</i>		B1E0433	05/26/2021	<i>05/26/21 21:45</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.0 %</i>	<i>73 - 124</i>		B1E0433	05/26/2021	<i>05/26/21 21:45</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>96.7 %</i>	<i>78 - 129</i>		B1E0433	05/26/2021	<i>05/26/21 21:45</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.9 %</i>	<i>84 - 117</i>		B1E0433	05/26/2021	<i>05/26/21 21:45</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: POX

Lab ID: 2101143-04

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

Analyst: AC

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	B1E0364	05/21/2021	05/24/21 17:46	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>81.0 %</i>		<i>13 - 99</i>		B1E0364	05/21/2021	<i>05/24/21 17:46</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>69.1 %</i>		<i>8 - 111</i>		B1E0364	05/21/2021	<i>05/24/21 17:46</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>92.6 %</i>		<i>12 - 113</i>		B1E0364	05/21/2021	<i>05/24/21 17:46</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>30.8 %</i>		<i>15 - 121</i>		B1E0364	05/21/2021	<i>05/24/21 17:46</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: INF

Lab ID: 2101143-05

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	B1E0433	05/26/2021	05/26/21 22:10	
1,1,1-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,1,2-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,1-Dichloroethane	0.59	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,1-Dichloroethene	79	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,1-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2,3-Trichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2-Dibromoethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,3-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,3-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
1,4-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
2,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
2-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
4-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
4-Isopropyltoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Benzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Bromobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Bromodichloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Bromoform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Bromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Carbon tetrachloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Chlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Chloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Chloroform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Chloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: INF

Lab ID: 2101143-05

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Dibromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Dichlorodifluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Ethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Hexachlorobutadiene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Isopropylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
m,p-Xylene	ND	1.0	1	B1E0433	05/26/2021	05/26/21 22:10	
Methylene chloride	ND	1.0	1	B1E0433	05/26/2021	05/26/21 22:10	
n-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
n-Propylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Naphthalene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
o-Xylene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
sec-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Styrene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
tert-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Tetrachloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Toluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Trichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Trichlorofluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Vinyl chloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:10	
Surrogate: 1,2-Dichloroethane-d4	95.0 %	64 - 155		B1E0433	05/26/2021	05/26/21 22:10	
Surrogate: 4-Bromofluorobenzene	94.3 %	73 - 124		B1E0433	05/26/2021	05/26/21 22:10	
Surrogate: Dibromofluoromethane	97.8 %	78 - 129		B1E0433	05/26/2021	05/26/21 22:10	
Surrogate: Toluene-d8	96.8 %	84 - 117		B1E0433	05/26/2021	05/26/21 22:10	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: INF

Lab ID: 2101143-05

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

Analyst: AC

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	37	2.0	0.84	1	B1E0394	05/24/2021	05/24/21 19:25	B
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.8 %</i>	<i>17 - 119</i>			B1E0394	05/24/2021	<i>05/24/21 19:25</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.4 %</i>	<i>10 - 133</i>			B1E0394	05/24/2021	<i>05/24/21 19:25</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>77.7 %</i>	<i>5 - 139</i>			B1E0394	05/24/2021	<i>05/24/21 19:25</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.6 %</i>	<i>13 - 150</i>			B1E0394	05/24/2021	<i>05/24/21 19:25</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: EW-02

Lab ID: 2101143-06

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	B1E0433	05/26/2021	05/26/21 22:35	
1,1,1-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,1,2-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,1-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,1-Dichloroethene	19	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,1-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2,3-Trichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2-Dibromoethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,3-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,3-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
1,4-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
2,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
2-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
4-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
4-Isopropyltoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Benzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Bromobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Bromodichloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Bromoform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Bromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Carbon tetrachloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Chlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Chloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Chloroform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Chloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: EW-02

Lab ID: 2101143-06

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Dibromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Dichlorodifluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Ethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Hexachlorobutadiene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Isopropylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
m,p-Xylene	ND	1.0	1	B1E0433	05/26/2021	05/26/21 22:35	
Methylene chloride	ND	1.0	1	B1E0433	05/26/2021	05/26/21 22:35	
n-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
n-Propylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Naphthalene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
o-Xylene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
sec-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Styrene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
tert-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Tetrachloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Toluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Trichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Trichlorofluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Vinyl chloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 22:35	
Surrogate: 1,2-Dichloroethane-d4	92.2 %	64 - 155		B1E0433	05/26/2021	05/26/21 22:35	
Surrogate: 4-Bromofluorobenzene	93.3 %	73 - 124		B1E0433	05/26/2021	05/26/21 22:35	
Surrogate: Dibromofluoromethane	97.8 %	78 - 129		B1E0433	05/26/2021	05/26/21 22:35	
Surrogate: Toluene-d8	103 %	84 - 117		B1E0433	05/26/2021	05/26/21 22:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: EW-02

Lab ID: 2101143-06

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

Analyst: AC

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	9.5	2.0	0.84	1	B1E0394	05/24/2021	05/24/21 19:52	B
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.0 %</i>		<i>17 - 119</i>		B1E0394	05/24/2021	<i>05/24/21 19:52</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.8 %</i>		<i>10 - 133</i>		B1E0394	05/24/2021	<i>05/24/21 19:52</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>78.9 %</i>		<i>5 - 139</i>		B1E0394	05/24/2021	<i>05/24/21 19:52</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>66.5 %</i>		<i>13 - 150</i>		B1E0394	05/24/2021	<i>05/24/21 19:52</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: MW-29

Lab ID: 2101143-07

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	B1E0433	05/26/2021	05/26/21 23:00	
1,1,1-Trichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,1,2-Trichloroethane	0.57	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,1-Dichloroethane	1.6	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,1-Dichloroethene	240	2.5	5	B1E0433	05/26/2021	05/26/21 23:25	
1,1-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2,3-Trichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2,3-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2,4-Trichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2,4-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2-Dibromoethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2-Dichloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,3,5-Trimethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,3-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,3-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
1,4-Dichlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
2,2-Dichloropropane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
2-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
4-Chlorotoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
4-Isopropyltoluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Benzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Bromobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Bromodichloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Bromoform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Bromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Carbon tetrachloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Chlorobenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Chloroethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Chloroform	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Chloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
cis-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
cis-1,3-Dichloropropene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: MW-29

Lab ID: 2101143-07

Volatile Organic Compounds by EPA 8260B

Analyst: KL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Dibromomethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Dichlorodifluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Ethylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Hexachlorobutadiene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Isopropylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
m,p-Xylene	ND	1.0	1	B1E0433	05/26/2021	05/26/21 23:00	
Methylene chloride	ND	1.0	1	B1E0433	05/26/2021	05/26/21 23:00	
n-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
n-Propylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Naphthalene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
o-Xylene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
sec-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Styrene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
tert-Butylbenzene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Tetrachloroethene	0.55	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Toluene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
trans-1,2-Dichloroethene	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Trichloroethene	1.8	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Trichlorofluoromethane	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
Vinyl chloride	ND	0.50	1	B1E0433	05/26/2021	05/26/21 23:00	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.5 %</i>	<i>64 - 155</i>		B1E0433	05/26/2021	<i>05/26/21 23:25</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.7 %</i>	<i>64 - 155</i>		B1E0433	05/26/2021	<i>05/26/21 23:00</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.4 %</i>	<i>73 - 124</i>		B1E0433	05/26/2021	<i>05/26/21 23:25</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.6 %</i>	<i>73 - 124</i>		B1E0433	05/26/2021	<i>05/26/21 23:00</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.3 %</i>	<i>78 - 129</i>		B1E0433	05/26/2021	<i>05/26/21 23:25</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.4 %</i>	<i>78 - 129</i>		B1E0433	05/26/2021	<i>05/26/21 23:00</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.0 %</i>	<i>84 - 117</i>		B1E0433	05/26/2021	<i>05/26/21 23:00</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>84 - 117</i>		B1E0433	05/26/2021	<i>05/26/21 23:25</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Client Sample ID: MW-29

Lab ID: 2101143-07

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

Analyst: AC

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	110	2.0	0.84	1	B1E0394	05/24/2021	05/24/21 20:19	B
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.4 %</i>	<i>17 - 119</i>			B1E0394	05/24/2021	<i>05/24/21 20:19</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>65.2 %</i>	<i>10 - 133</i>			B1E0394	05/24/2021	<i>05/24/21 20:19</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>74.7 %</i>	<i>5 - 139</i>			B1E0394	05/24/2021	<i>05/24/21 20:19</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>63.4 %</i>	<i>13 - 150</i>			B1E0394	05/24/2021	<i>05/24/21 20:19</i>	



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Project Number : Raytheon Main GETS Mid Month Sample

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Reported : 05/28/2021

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 B1E0433 - MSVOA_LL_W

Blank (B1E0433-BLK1)

Prepared: 5/26/2021 Analyzed: 5/26/2021

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



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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

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 B1E0433 - MSVOA_LL_W (continued)

Blank (B1E0433-BLK1) - Continued

Prepared: 5/26/2021 Analyzed: 5/26/2021

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
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	23.96		25.0000	95.8	64 - 155
Surrogate: 4-Bromofluorobenzene	23.68		25.0000	94.7	73 - 124
Surrogate: Dibromofluoromethane	24.23		25.0000	96.9	78 - 129
Surrogate: Toluene-d8	24.45		25.0000	97.8	84 - 117

LCS (B1E0433-BS1)

Prepared: 5/26/2021 Analyzed: 5/26/2021

1,1,1,2-Tetrachloroethane	18.9400	0.50	0.11	20.0000	94.7	79 - 116
1,1,1-Trichloroethane	18.6900	0.50	0.21	20.0000	93.4	73 - 130
1,1,2,2-Tetrachloroethane	18.4900	0.50	0.36	20.0000	92.4	71 - 122
1,1,2-Trichloroethane	18.9900	0.50	0.25	20.0000	95.0	70 - 124
1,1-Dichloroethane	17.6800	0.50	0.09	20.0000	88.4	69 - 128
1,1-Dichloroethene	17.4300	0.50	0.13	20.0000	87.2	65 - 137
1,1-Dichloropropene	21.0800	0.50	0.13	20.0000	105	74 - 129
1,2,3-Trichloropropane	18.3600	0.50	0.39	20.0000	91.8	74 - 123
1,2,3-Trichlorobenzene	20.6700	0.50	0.18	20.0000	103	59 - 130
1,2,4-Trichlorobenzene	20.4900	0.50	0.16	20.0000	102	65 - 125
1,2,4-Trimethylbenzene	21.3200	0.50	0.14	20.0000	107	88 - 124
1,2-Dibromo-3-chloropropane	20.4300	0.50	0.41	20.0000	102	61 - 127
1,2-Dibromoethane	18.6600	0.50	0.24	20.0000	93.3	72 - 125
1,2-Dichlorobenzene	19.3600	0.50	0.20	20.0000	96.8	84 - 113
1,2-Dichloroethane	18.8900	0.50	0.20	20.0000	94.4	68 - 130



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Project Number : Raytheon Main GETS Mid Month Sample

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Reported : 05/28/2021

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 B1E0433 - MSVOA_LL_W (continued)

LCS (B1E0433-BS1) - Continued

Prepared: 5/26/2021 Analyzed: 5/26/2021

1,2-Dichloropropane	18.0800	0.50	0.15	20.0000		90.4	77 - 121		
1,3,5-Trimethylbenzene	20.8700	0.50	0.13	20.0000		104	83 - 124		
1,3-Dichlorobenzene	19.1800	0.50	0.16	20.0000		95.9	83 - 112		
1,3-Dichloropropane	18.2500	0.50	0.21	20.0000		91.2	77 - 119		
1,4-Dichlorobenzene	19.1100	0.50	0.17	20.0000		95.6	79 - 115		
2,2-Dichloropropane	18.2500	0.50	0.38	20.0000		91.2	67 - 149		
2-Chlorotoluene	19.5600	0.50	0.11	20.0000		97.8	81 - 119		
4-Chlorotoluene	19.7000	0.50	0.12	20.0000		98.5	86 - 117		
4-Isopropyltoluene	21.7600	0.50	0.11	20.0000		109	82 - 131		
Benzene	19.1300	0.50	0.13	20.0000		95.6	75 - 124		
Bromobenzene	18.6500	0.50	0.21	20.0000		93.2	82 - 108		
Bromodichloromethane	19.0200	0.50	0.14	20.0000		95.1	80 - 120		
Bromoform	19.6300	0.50	0.20	20.0000		98.2	70 - 123		
Bromomethane	29.8300	0.50	0.40	20.0000		149	44 - 151		
Carbon tetrachloride	19.8700	0.50	0.09	20.0000		99.4	62 - 140		
Chlorobenzene	18.4500	0.50	0.13	20.0000		92.2	80 - 112		
Chloroethane	21.6400	0.50	0.15	20.0000		108	42 - 167		
Chloroform	18.0400	0.50	0.11	20.0000		90.2	77 - 122		
Chloromethane	22.8100	0.50	0.12	20.0000		114	33 - 153		
cis-1,2-Dichloroethene	17.9300	0.50	0.14	20.0000		89.6	75 - 121		
cis-1,3-Dichloropropene	19.7600	0.50	0.13	20.0000		98.8	73 - 127		
Dibromochloromethane	18.8500	0.50	0.16	20.0000		94.2	77 - 122		
Dibromomethane	17.5900	0.50	0.19	20.0000		88.0	75 - 121		
Dichlorodifluoromethane	43.8200	0.50	0.18	20.0000		219	0 - 171		L5
Ethylbenzene	19.8200	0.50	0.13	20.0000		99.1	82 - 119		
Hexachlorobutadiene	19.8900	0.50	0.15	20.0000		99.4	71 - 131		
Isopropylbenzene	20.1100	0.50	0.10	20.0000		101	75 - 126		
m,p-Xylene	40.2000	1.0	0.19	40.0000		100	86 - 119		
Methylene chloride	18.6100	1.0	0.71	20.0000		93.0	76 - 125		
n-Butylbenzene	20.7900	0.50	0.11	20.0000		104	81 - 125		
n-Propylbenzene	20.4500	0.50	0.10	20.0000		102	78 - 130		
Naphthalene	20.8000	0.50	0.41	20.0000		104	47 - 128		
o-Xylene	20.1100	0.50	0.13	20.0000		101	85 - 119		
sec-Butylbenzene	20.9800	0.50	0.09	20.0000		105	78 - 130		
Styrene	21.7600	0.50	0.13	20.0000		109	62 - 148		
tert-Butylbenzene	20.5900	0.50	0.09	20.0000		103	77 - 125		
Tetrachloroethene	19.8000	0.50	0.10	20.0000		99.0	73 - 120		
Toluene	19.3200	0.50	0.12	20.0000		96.6	79 - 119		
trans-1,2-Dichloroethene	18.1800	0.50	0.09	20.0000		90.9	70 - 129		
Trichloroethene	18.6900	0.50	0.10	20.0000		93.4	73 - 117		



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

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 B1E0433 - MSVOA_LL_W (continued)

LCS (B1E0433-BS1) - Continued

Prepared: 5/26/2021 Analyzed: 5/26/2021

Trichlorofluoromethane	24.7500	0.50	0.23	20.0000	124	59 - 135			
Vinyl chloride	22.6500	0.50	0.13	20.0000	113	58 - 132			
Surrogate: 1,2-Dichloroethane-d4	23.89			25.0000	95.6	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.19			25.0000	101	73 - 124			
Surrogate: Dibromofluoromethane	24.02			25.0000	96.1	78 - 129			
Surrogate: Toluene-d8	25.48			25.0000	102	84 - 117			

LCS Dup (B1E0433-BS1)

Prepared: 5/26/2021 Analyzed: 5/26/2021

1,1,1,2-Tetrachloroethane	19.6600	0.50	0.11	20.0000	98.3	79 - 116	3.73	20	
1,1,1-Trichloroethane	18.3100	0.50	0.21	20.0000	91.6	73 - 130	2.05	20	
1,1,2,2-Tetrachloroethane	18.2800	0.50	0.36	20.0000	91.4	71 - 122	1.14	20	
1,1,2-Trichloroethane	18.5600	0.50	0.25	20.0000	92.8	70 - 124	2.29	20	
1,1-Dichloroethane	17.4600	0.50	0.09	20.0000	87.3	69 - 128	1.25	20	
1,1-Dichloroethene	17.1700	0.50	0.13	20.0000	85.8	65 - 137	1.50	20	
1,1-Dichloropropene	18.8500	0.50	0.13	20.0000	94.2	74 - 129	11.2	20	
1,2,3-Trichloropropane	18.5100	0.50	0.39	20.0000	92.6	74 - 123	0.814	20	
1,2,3-Trichlorobenzene	20.4100	0.50	0.18	20.0000	102	59 - 130	1.27	20	
1,2,4-Trichlorobenzene	19.9100	0.50	0.16	20.0000	99.6	65 - 125	2.87	20	
1,2,4-Trimethylbenzene	20.5900	0.50	0.14	20.0000	103	88 - 124	3.48	20	
1,2-Dibromo-3-chloropropane	20.3600	0.50	0.41	20.0000	102	61 - 127	0.343	20	
1,2-Dibromoethane	18.4100	0.50	0.24	20.0000	92.0	72 - 125	1.35	20	
1,2-Dichlorobenzene	19.2700	0.50	0.20	20.0000	96.4	84 - 113	0.466	20	
1,2-Dichloroethane	18.0800	0.50	0.20	20.0000	90.4	68 - 130	4.38	20	
1,2-Dichloropropane	17.1900	0.50	0.15	20.0000	86.0	77 - 121	5.05	20	
1,3,5-Trimethylbenzene	19.9600	0.50	0.13	20.0000	99.8	83 - 124	4.46	20	
1,3-Dichlorobenzene	18.7800	0.50	0.16	20.0000	93.9	83 - 112	2.11	20	
1,3-Dichloropropane	18.6300	0.50	0.21	20.0000	93.2	77 - 119	2.06	20	
1,4-Dichlorobenzene	18.5900	0.50	0.17	20.0000	93.0	79 - 115	2.76	20	
2,2-Dichloropropane	18.3200	0.50	0.38	20.0000	91.6	67 - 149	0.383	20	
2-Chlorotoluene	19.0200	0.50	0.11	20.0000	95.1	81 - 119	2.80	20	
4-Chlorotoluene	18.8500	0.50	0.12	20.0000	94.2	86 - 117	4.41	20	
4-Isopropyltoluene	20.6800	0.50	0.11	20.0000	103	82 - 131	5.09	20	
Benzene	18.1200	0.50	0.13	20.0000	90.6	75 - 124	5.42	20	
Bromobenzene	18.4600	0.50	0.21	20.0000	92.3	82 - 108	1.02	20	
Bromodichloromethane	18.4800	0.50	0.14	20.0000	92.4	80 - 120	2.88	20	
Bromoform	20.8900	0.50	0.20	20.0000	104	70 - 123	6.22	20	
Bromomethane	29.4100	0.50	0.40	20.0000	147	44 - 151	1.42	20	
Carbon tetrachloride	19.6700	0.50	0.09	20.0000	98.4	62 - 140	1.01	20	
Chlorobenzene	18.6200	0.50	0.13	20.0000	93.1	80 - 112	0.917	20	
Chloroethane	21.2300	0.50	0.15	20.0000	106	42 - 167	1.91	20	



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San Diego , CA 92122

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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	RPD Limit	Notes

Batch B1E0433 - MSVOA_LL_W (continued)

LCS Dup (B1E0433-BSD1) - Continued

Prepared: 5/26/2021 Analyzed: 5/26/2021

Chloroform	18.4500	0.50	0.11	20.0000		92.2	77 - 122	2.25	20	
Chloromethane	22.6900	0.50	0.12	20.0000		113	33 - 153	0.527	20	
cis-1,2-Dichloroethene	17.9400	0.50	0.14	20.0000		89.7	75 - 121	0.0558	20	
cis-1,3-Dichloropropene	19.1900	0.50	0.13	20.0000		96.0	73 - 127	2.93	20	
Dibromochloromethane	19.8500	0.50	0.16	20.0000		99.2	77 - 122	5.17	20	
Dibromomethane	17.6900	0.50	0.19	20.0000		88.4	75 - 121	0.567	20	
Dichlorodifluoromethane	43.1800	0.50	0.18	20.0000		216	0 - 171	1.47	20	L5
Ethylbenzene	19.6800	0.50	0.13	20.0000		98.4	82 - 119	0.709	20	
Hexachlorobutadiene	19.6200	0.50	0.15	20.0000		98.1	71 - 131	1.37	20	
Isopropylbenzene	19.7800	0.50	0.10	20.0000		98.9	75 - 126	1.65	20	
m,p-Xylene	40.4400	1.0	0.19	40.0000		101	86 - 119	0.595	20	
Methylene chloride	19.1200	1.0	0.71	20.0000		95.6	76 - 125	2.70	20	
n-Butylbenzene	20.0700	0.50	0.11	20.0000		100	81 - 125	3.52	20	
n-Propylbenzene	19.6900	0.50	0.10	20.0000		98.4	78 - 130	3.79	20	
Naphthalene	21.6800	0.50	0.41	20.0000		108	47 - 128	4.14	20	
o-Xylene	20.2300	0.50	0.13	20.0000		101	85 - 119	0.595	20	
sec-Butylbenzene	20.0900	0.50	0.09	20.0000		100	78 - 130	4.33	20	
Styrene	21.8900	0.50	0.13	20.0000		109	62 - 148	0.596	20	
tert-Butylbenzene	20.1300	0.50	0.09	20.0000		101	77 - 125	2.26	20	
Tetrachloroethene	19.3500	0.50	0.10	20.0000		96.8	73 - 120	2.30	20	
Toluene	18.3200	0.50	0.12	20.0000		91.6	79 - 119	5.31	20	
trans-1,2-Dichloroethene	18.0500	0.50	0.09	20.0000		90.2	70 - 129	0.718	20	
Trichloroethene	18.2800	0.50	0.10	20.0000		91.4	73 - 117	2.22	20	
Trichlorofluoromethane	24.3600	0.50	0.23	20.0000		122	59 - 135	1.59	20	
Vinyl chloride	21.7200	0.50	0.13	20.0000		109	58 - 132	4.19	20	
Surrogate: 1,2-Dichloroethane-d4	24.46			25.0000		97.8	64 - 155			
Surrogate: 4-Bromofluorobenzene	25.59			25.0000		102	73 - 124			
Surrogate: Dibromofluoromethane	24.14			25.0000		96.6	78 - 129			
Surrogate: Toluene-d8	25.09			25.0000		100	84 - 117			



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Reported : 05/28/2021

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	RPD Limit	Notes

Batch B1E0394 - MSSEMI_W

Blank (B1E0394-BLK1)

Prepared: 5/24/2021 Analyzed: 5/24/2021

1,4-Dioxane	2.79000	2.0	0.84						B
Surrogate: 1,2-Dichlorobenzene-d	63.23			100.000	63.2	17 - 119			
Surrogate: 2-Fluorobiphenyl	75.38			100.000	75.4	10 - 133			
Surrogate: 4-Terphenyl-d14	84.93			100.000	84.9	5 - 139			
Surrogate: Nitrobenzene-d5	71.84			100.000	71.8	13 - 150			

LCS (B1E0394-BS1)

Prepared: 5/24/2021 Analyzed: 5/24/2021

1,4-Dioxane	108.540	2.0	0.84	100.000	109	75 - 155			B
Surrogate: 1,2-Dichlorobenzene-d	59.12			100.000	59.1	17 - 119			
Surrogate: 2-Fluorobiphenyl	79.80			100.000	79.8	10 - 133			
Surrogate: 4-Terphenyl-d14	81.54			100.000	81.5	5 - 139			
Surrogate: Nitrobenzene-d5	77.63			100.000	77.6	13 - 150			

LCS Dup (B1E0394-BSD1)

Prepared: 5/24/2021 Analyzed: 5/24/2021

1,4-Dioxane	111.310	2.0	0.84	100.000	111	75 - 155	2.52	20	B
Surrogate: 1,2-Dichlorobenzene-d	56.12			100.000	56.1	17 - 119			
Surrogate: 2-Fluorobiphenyl	73.43			100.000	73.4	10 - 133			
Surrogate: 4-Terphenyl-d14	76.65			100.000	76.6	5 - 139			
Surrogate: Nitrobenzene-d5	70.27			100.000	70.3	13 - 150			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

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 B1E0364 - MSSEMI_W

Blank (B1E0364-BLK1)

Prepared: 5/21/2021 Analyzed: 5/24/2021

1,4-Dioxane	ND	0.20	0.05							
Surrogate: 1,2-Dichlorobenzene-d	0.8013			1.00000		80.1	13 - 99			
Surrogate: 2-Fluorobiphenyl	0.7432			1.00000		74.3	8 - 111			
Surrogate: 4-Terphenyl-d14	2.115			1.00000		212	12 - 113			S16
Surrogate: Nitrobenzene-d5	0.5320			1.00000		53.2	15 - 121			

LCS (B1E0364-BS1)

Prepared: 5/21/2021 Analyzed: 5/24/2021

1,4-Dioxane	1.09700	0.20	0.05	1.00000		110	75 - 155			
Surrogate: 1,2-Dichlorobenzene-d	0.7922			1.00000		79.2	13 - 99			
Surrogate: 2-Fluorobiphenyl	0.4092			1.00000		40.9	8 - 111			
Surrogate: 4-Terphenyl-d14	0.6124			1.00000		61.2	12 - 113			
Surrogate: Nitrobenzene-d5	0.1594			1.00000		15.9	15 - 121			

LCS Dup (B1E0364-BSD1)

Prepared: 5/21/2021 Analyzed: 5/24/2021

1,4-Dioxane	1.04185	0.20	0.05	1.00000		104	75 - 155	5.16	20	
Surrogate: 1,2-Dichlorobenzene-d	0.7350			1.00000		73.5	13 - 99			
Surrogate: 2-Fluorobiphenyl	0.6545			1.00000		65.4	8 - 111			
Surrogate: 4-Terphenyl-d14	0.5246			1.00000		52.5	12 - 113			
Surrogate: Nitrobenzene-d5	0.4189			1.00000		41.9	15 - 121			



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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 05/28/2021

Notes and Definitions

S16	Surrogate recovery is outside the laboratory acceptance limit. Re-extraction is not possible due to insufficient sample.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was 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.

PROJECT: Raytheon Main GETS Mid Month Sample

TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Ross Horton

Phone 858.455.6500

Fax 858.455.6533

Sampled By: <u>MARTY PERSON</u>				SAMPLE COLLECTION		MATRIX		PRESERVATION		CONTAINERS				ANALYSIS REQUESTED										Expected Concentration Range (ppb) for				SPECIAL HANDLING				REMARKS			
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270C SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 Hour TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested		
1	TB-052021	5/20/2021	8:00		X	X		X		2						X									X										
2	CEFF	5/20/2021	8:58	X	X			X		3					1	X								X	X										
3	CBT	5/20/2021	9:04	X	X			X		3					1	X							X	X											
4	POX	5/20/2021	9:12	X	X			X		3					1	X							X	X											
5	INF	5/20/2021	9:31	X	X			X		3					1	X						X					X								
6	EW-02	5/20/2021	10:06	X	X			X		3					1	X						X				X									
7	MW-29	5/20/2021	10:32	X	X			X		3					1	X						X					X								
Total number of containers per analysis:										20	6										Total No. of Containers: 26														
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																							
Relinquished By: / Company:				Date / Time		Received By: / Company				Date / Time																									

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.

Temperature on receipt

Send Results to:
Steve Netto & Ross Horton
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.6500
snetto@hargis.com
rhorton@hargis.com