



HARGIS + ASSOCIATES, INC.

HYDROGEOLOGY • ENGINEERING

La Jolla Gateway
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Phone: 858.455.6500
Fax: 858.455.6533

September 25, 2013

VIA FEDERAL EXPRESS STANDARD

Mr. William F. Jeffers, PE
Hazardous Substances Engineer
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Southern California Region
9211 Oakdale Avenue
Chatsworth, CA 91311-6520

Re: Data Submittal for Groundwater Monitoring and Groundwater Extraction
and Treatment Pilot Testing, Third Quarter 2013, Raytheon Company (Former
Hughes Aircraft Company Facility), 1901 West Malvern Avenue, Fullerton, California

Dear Mr. Jeffers:

This letter has been prepared for the submittal of groundwater monitoring and groundwater treatment pilot testing data collected during the third quarter 2013 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 Workplan 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 third quarter 2013 in general accordance with the DTSC-approved Groundwater Extraction and Treatment Pilot Testing, Corrective Measures Study Workplan Addendum No. 4A (DTSC, 2009; H+A, 2009a and 2009b). The results of the third quarter 2013 quarterly groundwater monitoring and pilot groundwater extraction and treatment system (GETS) operation from June through August 2013 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 and groundwater samples were collected in August 2013 at all monitor wells and piezometers in general accordance with the GMWPSAP and Addendum No.1 (Table 1).

Monitor wells MW-38, MW-39, and MW-40 were installed in July 2013 after the approval of the proposed optimization to groundwater monitoring program and Amendment A of Addendum No. 1. to the GMWPSAP; these monitor wells have been incorporated into the quarterly groundwater monitoring program at the Site (Table 1; Figure 2) (DTSC, 2011 and 2013; H+A, 2011a, 2011b, and 2013).

Other Offices:
Mesa, AZ
Tucson, AZ

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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). Water levels were measured on August 12, 2013 (Table 2).

Initial groundwater samples were collected from monitor wells MW-38, MW-39, and MW-40 on August 7, August 8, and July 18, 2013, respectively, and quarterly groundwater samples were collected during the period from August 12 through August 16, 2013 (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 separately below.

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 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).

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples collected in August 2013 consisted of trip blanks, field duplicates, and laboratory split samples. Trip blanks were provided by ATL. Field duplicate and/or laboratory split samples were collected for analysis of VOCs and 1,4-dioxane from monitor wells MW-29, MW-30B, MW-36, MW-38, MW-39, and MW-40 in July and August 2013 (Table 3). The relative percent difference was calculated between the results of each field duplicate and each laboratory split sample with its corresponding original sample. This data quality assessment indicated that all QA/QC results for groundwater samples are within acceptable criteria.

There were no detections of VOCs or 1,4-dioxane in the trip, rinsate, and/or laboratory method blanks analyzed with groundwater samples collected during the August 2013 groundwater monitoring event (Table 3; Appendix B), with the following exception:

- Methylene chloride was detected at a concentration of 3.7 micrograms per liter (ug/l) and 3.4 ug/l in rinsate blanks RB-08142013 and RB-08142013B, respectively. Methylene chloride was not detected in any associated samples, therefore, no data were qualified (Table 3).

The data quality assessment also included review of laboratory QA/QC results. Laboratory QA/QC results are within acceptable criteria.

GROUNDWATER EXTRACTION AND TREATMENT PILOT STUDY

This section summarizes the pilot GETS operation within the three-month period of monitoring conducted during the third quarter of 2013. The pilot GETS consists of three groundwater extraction wells, the treatment system, and the disposal system; however, the current phase of pilot testing is operating using one extraction well, EW-02. The treatment system processes extracted groundwater through an advanced oxidation unit that utilizes ozone and hydrogen peroxide (HiPOx), followed by a granular activated carbon polish prior to disposal to the sanitary sewer. A graphical representation of the system operational time in relation to water level measurements at current extraction well EW-02 and the previously utilized extraction wells MW-21 and EW-01 has been provided (Figure 4).

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Initial startup of the pilot GETS took place on Tuesday, July 8, 2008. From July 2008 through November 2009, the pilot GETS was operated with extraction wells EW-01 and MW-21 operating at approximately 10 gallons per minute (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. Beginning in March 2010, the pilot GETS was operated at 50 gpm, entirely from extraction well EW-02. During 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 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 on March 9, 2012, and operation of the pilot GETS was restored to 50 gpm, entirely from extraction well EW-02. Extraction wells EW-01 and MW-21 are on standby for the current phase of pilot testing, but may be used for future phases of pilot testing or as part of a full scale pump-and-treat system.

During the third quarter 2013, the pilot GETS was operational approximately 79 percent of the available runtime and approximately 4,829,885 gallons of groundwater were treated and discharged to the sanitary sewer (Table 4). No significant downtime occurred during the third quarter of 2013, all downtime was associated with general facility operation and maintenance tasks, sampling events, or rain events. The average monthly discharge flowrate to the sanitary sewer during June 2013 through August 2013 was approximately 36.5 gpm. Since startup of the pilot GETS, approximately 79,141,034 gallons of groundwater have been treated at an average flowrate of 30.6 gpm through the end of August 2013 (Table 4).

Current monthly and quarterly pilot GETS monitoring activities include collecting samples from extraction well EW-02 in addition to collecting samples at treatment system sampling ports: Extraction Well EW-02, Influent, Post Particulate Filter, Post HiPOx Oxidation, Carbon Breakthrough, and Carbon Effluent (Tables 5 and 6; Figure 5). Samples collected during these activities were sent to ATL. Analytical results of the treatment system samples have been summarized (Table 6; Appendix B).

The pilot GETS continues to remove VOCs and 1,4-dioxane from extracted groundwater. The HiPOx advanced oxidation and carbon adsorption treatment units effectively removed VOCs from extracted groundwater. Breakthrough of low-level detections of VOCs was not observed in the third quarter 2013 (Table 6). The effluent sample collected from the HiPOx advanced oxidation treatment unit contained low-level detections of bromate, a secondary by-product, during operations in the third quarter 2013. Carbon adsorption does not effectively remove this compound; however, this compound was detected at concentrations below the pilot GETS permitted sewer discharge limit. The operation of the advanced oxidation system continues to be optimized in an attempt to minimize the formation of bromate (Figure 6).

During the third quarter of 2013, the pilot GETS removed approximately 3.06 pounds of VOCs and 1.04 pounds of 1,4-dioxane from extracted groundwater. Since startup of the pilot GETS in July 2008, approximately 121.48 pounds of VOCs and 22.14 pounds of 1,4-dioxane have been removed from groundwater through August 2013 (Figure 7).



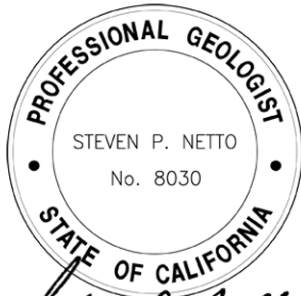
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If you have any questions or require additional information, please contact us at 858-455-6500.

Sincerely,

HARGIS + ASSOCIATES, INC.



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

SPN/EJHMER/ama

Erin J. Hunter
Hydrogeologist



Marcos E. Rodriguez, PE M35620
Engineer

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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.
- _____, 2009. Letter to P. Brewer, Raytheon Systems Company, from W. Jeffers, DTSC, re Conditional Approval of Groundwater Extraction and Treatment System Pilot Testing, Corrective Measures Study Workplan Addendum No. 4A, Raytheon Company (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. June 1, 2009.
- _____, 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: GSU Comments – Raytheon Systems Co – 2012/2013 Annual Report, Raytheon Fullerton, dated July 22, 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.
- _____, 2009a. Groundwater Extraction and Treatment System Pilot Testing, Corrective Measures Study Workplan Addendum No. 4A, Raytheon Company (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. March 31, 2009.
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- _____, 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. Results of Groundwater Monitoring and Groundwater Extraction and Treatment Pilot Testing 2012/2013 Annual Report, Raytheon Company (Former Hughes Aircraft Company Facility), 1901 West Malvern Avenue, Fullerton, California. May 17, 2013.

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- Table 6. Select Compounds Monitored in Pilot Groundwater Extraction and Treatment System Samples, Third Quarter 2013

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- Figure 2. Well and Piezometer Locations
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- Figure 4. Pilot Groundwater Extraction and Treatment System Operation and Extraction Well Water Levels
- Figure 5. 1,1-Dichloroethylene and 1,4-Dioxane in Extraction Wells
- Figure 6. 1,4-Dioxane and Bromate in Influent and Post-Oxidation Samples
- Figure 7. Pilot Groundwater Extraction and Treatment System Mass Removal

Appendices

- Appendix A. Groundwater Sampling Field Forms (Provided on CD only)
- Appendix B. Laboratory Analytical Reports (Provided on CD only)

cc w/encl: (1 copy w-CD)

Mr. Paul Pongetti, Department of Toxic Substances Control, Cypress
Mr. Paul E. Brewer, Raytheon Company
Mr. Carl Bernhardt, California RWQCB, Santa Ana Region
Mr. Dave Mark, Orange County Water District
Mr. Duc Nguyen, Orange County Public Works, VIA EMAIL ONLY
Mr. Eric Silvers, Regency Centers
Ms. Denise Gerstenberg, Cushman & Wakefield of California, Inc.

(2 copies w-CDs)

Mr. Dave Schickling, City of Fullerton

(1 CD only)

Mr. Chad Blais, City of Fullerton
Mr. Robert Logan, RG, Kennedy/Jenks Consultants
Mr. Harris Sanders, Gateway Environmental Management LLC
Ms. Jennifer Schaefer, The Morgan Group, Inc.
Rosalind McLeroy, Esq., The Morgan Group, Inc.
Mr. Michael Payne, Prudential Real Estate Investors
Ms. Tizita Bekele, PE, Department of Toxic Substances Control, Cypress
Mr. Michael McGee, City of Buena Park

TABLE 1
GROUNDWATER MONITORING PROGRAM

WELL IDENTIFIER	HYDROGEOLOGIC ZONE	SAMPLED AUG 2013	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	X				VOCs; 1,4-Dioxane
MW-17	A		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-18	A	X		VOCs; 1,4-Dioxane		
MW-19	A					VOCs
MW-22	A					VOCs; 1,4-Dioxane
MW-23	A					VOCs
MW-34A	A	X		VOCs; 1,4-Dioxane		
MW-35B	A	X				VOCs; 1,4-Dioxane
MW-13	AB				VOCs; 1,4-Dioxane	
MW-15	AB	X		VOCs		
MW-26A	AB		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-26B	AB		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-32A	AB	X		VOCs; 1,4-Dioxane		
EW-01	B	X	VOCs; 1,4-Dioxane			
EW-02*	B	X	VOCs; 1,4-Dioxane			
MW-16	B	X		VOCs; 1,4-Dioxane		
MW-26C	B	X	VOCs; 1,4-Dioxane			
MW-27	B				VOCs; 1,4-Dioxane	
MW-28	B	X	VOCs; 1,4-Dioxane			
MW-29	B	X	VOCs; 1,4-Dioxane			
MW-30A	B	X	VOCs; 1,4-Dioxane			
MW-31	B	X	VOCs; 1,4-Dioxane			
MW-32B	B	X	VOCs; 1,4-Dioxane			
MW-33	B	X	VOCs; 1,4-Dioxane			
MW-34B	B	X	VOCs; 1,4-Dioxane			
MW-35C	B	X	VOCs; 1,4-Dioxane			
MW-36	B	X	VOCs; 1,4-Dioxane			
MW-37**	B	X	VOCs; 1,4-Dioxane			
MW-38**	B	X	VOCs; 1,4-Dioxane			
MW-39	B	X	VOCs; 1,4-Dioxane			
MW-40	B	X	VOCs; 1,4-Dioxane			
MW-21*	BC	X	VOCs; 1,4-Dioxane			
MW-08	BC	X	VOCs; 1,4-Dioxane			
MW-30B	BC	X	VOCs; 1,4-Dioxane			
MW-34C	BC	X		VOCs; 1,4-Dioxane		
MW-09	C	X		VOCs; 1,4-Dioxane		
MW-24	C				VOCs; 1,4-Dioxane	
MW-32C	C	X		VOCs; 1,4-Dioxane		
MW-06	D				VOCs	
MW-20	D	X		VOCs; 1,4-Dioxane		
MW-25	D		WATER LEVEL MEASUREMENT ONLY			

FOOTNOTES

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

** = Uncertainty of Hydrogeologic Zone; current investigation being conducted to determine zone

VOCs = Volatile organic compounds



TABLE 2

**GROUNDWATER LEVELS
THIRD QUARTER 2013**

Well Identifier	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Remediation System On
<u>Regional Groundwater System Monitor and Extraction Wells</u>					
MW-06	08/12/13	184.70	167.29	17.41	
MW-08	08/12/13	155.91	137.80	18.11	
MW-09	08/12/13	180.10	165.03	15.07	
MW-13	08/12/13	141.84	131.58	10.26	
MW-15	08/12/13	144.95	134.30	10.65	
MW-16	08/12/13	142.40	147.17	-4.77	
MW-17	08/12/13	142.70	139.22	3.48	
MW-18	08/12/13	142.32	139.59	2.73	
MW-19	08/12/13	142.06	139.28	2.78	
MW-20	08/12/13	184.19	160.23	23.96	
MW-21	08/12/13	141.18	129.76	11.42	
MW-22	08/12/13	138.65	135.75	2.90	
MW-23	08/12/13	137.33	135.83	1.50	
MW-24	08/12/13	142.83	128.32	14.51	
MW-25	08/12/13	142.64	130.68	11.96	
MW-26A	08/12/13	137.04	125.12	11.92	
MW-26B	08/12/13	137.05	126.75	10.30	
MW-26C	08/12/13	137.22	145.20	-7.98	
MW-27	08/12/13	137.16	144.52	-7.36	
MW-28	08/12/13	140.77	148.39	-7.62	
MW-29	08/12/13	142.34	151.61	-9.27	
MW-30A	08/12/13	129.44	139.38	-9.94	
MW-30B	08/12/13	129.39	134.12	-4.73	



TABLE 2

**GROUNDWATER LEVELS
THIRD QUARTER 2013**

Well Identifier	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Remediation System On
<u>Regional Groundwater System Monitor and Extraction Wells (continued)</u>					
MW-31	08/12/13	119.60	129.49	-9.89	
MW-32A	08/12/13	92.88	108.43	-15.55	
MW-32B	08/12/13	92.89	106.20	-13.31	
MW-32C	08/12/13	92.88	84.56	8.32	
MW-33	08/12/13	83.19	103.70	-20.51	
MW-34A	08/12/13	153.25	156.14	-2.89	
MW-34B	08/12/13	153.11	164.81	-11.70	
MW-34C	08/12/13	153.29	162.95	-9.66	
MW-35A	08/12/13	93.57	86.05	7.52	
MW-35B	08/12/13	93.56	97.17	-3.61	
MW-35C	08/12/13	93.55	107.84	-14.29	
MW-36	08/12/13	86.65	108.65	-22.00	
MW-37	08/12/13	155.6	149.41	6.19	
MW-38	08/07/13	154.90	156.80	-1.90	
	08/12/13	154.90	157.50	-2.60	
MW-39	08/08/13	84.25	106.13	-21.88	
	08/12/13	84.25	106.72	-22.47	
MW-40	07/19/13	123.40	124.37	-0.97	
	08/12/13	123.40	129.88	-6.48	
EW-01	08/12/13	141.07	145.78	-4.71	
EW-02	06/16/13	132.97	136.67	-3.70	Pilot GETS
	07/02/13	132.97	139.40	-6.43	Pilot GETS
	08/12/13	132.97	147.57	-14.60	Pilot GETS
<u>Perched Zone Water Levels</u>					
P-07	08/12/13	142.31	113.15	29.16	
P-09	08/12/13	183.86	120.63	63.23	



TABLE 2

GROUNDWATER LEVELS
THIRD QUARTER 2013

Well Identifier	Date Measured	Reference Point	Depth to Water (feet bls)	Water Level	Remediation System On
		Elevation (a) (feet msl)		Elevation (feet msl)	

FOOTNOTES

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

bls = Below land surface

msl = Mean sea level

Pilot GETS = Pilot Groundwater Extraction and Treatment System On

TABLE 3

**PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2013**

			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)	Toulene (1,000/150)	1,4-DIOXANE (3*/1**)
Regional Groundwater System Monitor and Extraction Wells																
MW-08	8/15/2013	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	10	1.6	< 0.50	< 0.50	< 0.50	27	< 0.50	< 0.50	1.0
MW-08 Historical Range***			< 0.50 - 0.95	< 0.50 - <1.0	< 0.50 - 0.86	< 0.50 - 5.1	< 0.50 - 0.99	< 0.50 - 500	< 0.50 - 13	< 0.50 - 1.3	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 480	< 0.50 - 1.0	< 0.50 - < 5.0	< 0.20 - 130
MW-09	8/14/2013	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.59	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-09 Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.79	< 0.50 - < 5.0	< 0.50 - 4.9	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.96	< 0.50 - 5.3	< 0.50 - < 5.0	< 0.20 - 52 E
MW-15	08/14/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.4	8.6	< 0.50	< 0.20
MW-15 Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 12	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 7.8	< 0.50 - 20	< 0.50 - < 5.0	< 0.50 - < 2.0
MW-16	08/14/13	ORG	<1.2	<1.2	<1.2	5.2	<1.2	770	<1.2	<1.2	<1.2	<1.2	5.7	<1.2	<1.2	36
Historical High/Low													High			
MW-16 Historical Range***			< 0.50 - < 5.0	< 0.50 - 0.58	< 0.50 - 1.1	< 0.50 - 18	< 0.50 - 4.5	49 - 1,900 E	< 0.50 - 0.57	< 0.50 - 2.9	< 0.50 - 28 E	< 0.50 - 10	< 0.50 - 4.9	< 0.50 - < 5.0	< 0.50 - < 5.0	< 2.0 - 440
MW-18	08/14/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.2	< 0.50	< 0.20
MW-18 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.51	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 6.3	< 0.50	< 0.20 - 7.7 E
MW-20	08/13/13	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-20 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.78	< 0.50	< 0.50	< 0.50 - 82	< 0.50	< 0.50	< 0.50 - 0.63	< 0.50	< 0.50	< 0.50 - 0.58	< 0.50	< 0.20 - 3.9
MW-21	8/12/2013	ORG	<2.5	<2.5	<2.5	19	3.5	1,500	<2.5	3.4	<2.5	6.1	19	<2.5	<2.5	370
MW-21 Historical Range***			< 0.50 - < 25	< 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 - < 10	11 - 1,100
MW-26C	08/15/13	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 - 55 E
MW-28	08/13/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.2	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.3
MW-28 Historical Range***			< 0.50	< 0.50	< 0.50	< 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	08/15/13	ORG	< 0.50	< 0.50	< 0.50	3.6	0.59	370	< 0.50	0.97	< 0.50	1.1	3.8	1.2	< 0.50	120
MW-29	08/15/13	FD	< 0.50	< 0.50	< 0.50	3.9	0.64	400	< 0.50	0.84	< 0.50	1.1	4.0	1.3	< 0.50	120
MW-29	08/15/13	SPT	<1.0	<1.0	<2.0	3.2	<1.0	290	<2.0	<2.0	<2.0	<2.0	4.6	<2.0	<2.0	170
MW-29 Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.80	1.1 - 9.2	< 0.50 - 1.4	99 - 900 E	< 0.50 - 0.61	< 0.50 - 6.6	< 0.50 - < 5.0	< 0.50 - 2.3	0.58 - 8.3	< 0.50 - 1.9	< 0.50 - < 5.0	29 - 301
MW-30A	08/15/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	< 0.50	< 0.50	< 0.50	< 0.50	1.7	< 0.50	< 0.50	< 0.20
MW-30A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 2.9	< 0.50 - 0.67	< 0.50 - 270	< 0.50	< 0.50 - 0.58	< 0.50	< 0.50 - 1.1	< 0.50 - 1.8	< 0.50	< 0.50	< 0.20 - 95
MW-30B	08/15/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	20	5.9	< 0.50	< 0.50	< 0.50	100	< 0.50	1.1	0.36
MW-3000B	08/15/13	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	20	5.7	< 0.50	< 0.50	< 0.50	100	< 0.50	1.0	0.29
MW-30B	08/15/13	SPT	< 0.50	< 0.50	<1.0	<1.0	<1.0	16	5.1	<1.0	<1.0	<1.0	100	<1.0	1.2	<1.0
Historical High/Low									High				High			
MW-30B Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 21 E	< 0.50 - 5.6	< 0.50	< 0.50	< 0.50	< 0.50 - 96	< 0.50	< 0.50 - 4.5	< 0.20 - 28 E

TABLE 3

**PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2013**

.....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)	Toulene (1,000/150)	1,4-DIOXANE (3*/1**)
Regional Groundwater System Monitor and Extraction Wells (cont'd)																
MW-31	08/14/13	ORG	< 0.50	< 0.50	< 0.50	2.3	< 0.50	270	0.85	0.55	< 0.50	< 0.50	11	< 0.50	0.70	4.5
Historical High/Low										High						
MW-31 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 3.6	< 0.50	25 - 430	< 0.50 - 1.2	< 0.50	< 0.50	< 0.50	2.2 - 21	< 0.50	< 0.50 - 0.83	< 0.20 - 7.0
MW-32A	08/13/13	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-32A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 0.57
MW-32B	08/13/13	ORG	< 0.50	< 0.50	< 0.50	1.4	< 0.50	160	5.6	< 0.50	< 0.50	< 0.50	75	< 0.50	< 0.50	2.6
Historical High/Low						High		High					High			
MW-32B Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 0.92	< 0.50	16 - 120	1.9 - 5.7	< 0.50	< 0.50	< 0.50	24 - 66	< 0.50	< 0.50	0.39 - 3.4
MW-32C	08/13/13	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-32C Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.56	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 1.0
MW-33	08/14/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	7.2	< 0.50	< 0.50	< 0.50	< 0.50	0.90	< 0.50	< 0.50	< 0.20
MW-33 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.7 - 12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 1.6	< 0.50	< 0.50 - 1.4	< 0.20 - < 2.0
MW-34A	08/13/13	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-34A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 1.6	< 0.50 - 2.8	< 0.20 - < 2.0
MW-34B	08/13/13	ORG	<1.0	<1.0	<1.0	4.9	1.1	540	<1.0	<1.0	<1.0	1.8	1.3	<1.0	<1.0	190
Historical High/Low							High									
MW-34B Historical Range***			< 0.50 - <5.0	< 0.50 - <5.0	< 0.50 - <5.0	< 0.50 - 9.8	< 0.50 - < 1.0	20 - 1,100	< 0.50 - <5.0	< 0.50 - <5.0	< 0.50 - <5.0	< 0.50 - 2.6	< 0.50 - 1.6	< 0.50 - <5.0	< 0.50 - 2.6	4.1 - 250
MW-34C	08/13/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-34C Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 9.6	< 0.20 - < 2.0
MW-35A	05/14/13	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
Historical High/Low					LOW											
MW-35A Historical Range***			< 0.50	< 0.50	0.72 - 67	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - < 2.0
MW-35B	05/14/13	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-35B 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 - < 2.0
MW-35C	08/14/13	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 - < 2.0
MW-36	08/15/13	ORG	< 0.50	< 0.50	< 0.50	1.4	< 0.50	130	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	8.5
MW-3600	08/15/13	FD	< 0.50	< 0.50	< 0.50	1.4	< 0.50	130	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	8.5
MW-36	08/15/13	SPT	< 0.50	< 0.50	<1.0	1.2	< 0.50	110	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	9.4
Historical High/Low																High
MW-36 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.5	< 0.50	2.9 - 140	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1 - 5.9	< 0.20 - 3.0

TABLE 3

**PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2013**

.....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)	Toulene (1,000/150)	1,4-DIOXANE (3*/1**)
Regional Groundwater System Monitor and Extraction Wells (cont'd)																
MW-37	08/14/13	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-37 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.66	< 0.50	<0.50 - 0.73	<0.20
MW-38	08/07/13	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-3800	08/07/13	FD	< 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-38	08/07/13	SPT	< 0.50	< 0.50	<1.0	<1.0	< 0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
MW-38	08/16/13	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-38 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - <1.0	< 0.50	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	<0.20 - <1.0
MW-39	08/08/13	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-3900	08/08/13	FD	< 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	08/08/13	SPT	< 0.50	< 0.50	<1.0	<1.0	< 0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
MW-39	08/16/13	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	0.69	< 0.20
MW-39 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - <1.0	< 0.50	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	<0.20 - <1.0
MW-40	07/18/13	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-4000	07/18/13	FD	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-40	07/18/13	SPT	< 0.50	< 0.50	<1.0	<1.0	< 0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
MW-40	08/16/13	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-40 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - <1.0	< 0.50	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	< 0.50 - <1.0	<0.20 - <1.0
EW-01	08/12/13	ORG	< 0.50	< 0.50	< 0.50	2.9	0.56	220	< 0.50	0.76	< 0.50	0.85	< 0.50	< 0.50	< 0.50	81
EW-01 Historical Range***			< 0.50 - 2	< 0.50 - 0.55	< 0.50 - 1.2	< 0.50 - 16	< 0.50 - 4.0	< 0.50 - 1,600 E	< 0.50 - 0.52	< 0.50 - 3.3	< 0.50 - < 2.5	< 0.50 - 10	< 0.50 - 2.8	< 0.50 - 0.52	< 0.50 - 4.6	5.1 - 710
EW-02	6/13/13	ORG	< 0.50	< 0.50	< 0.50	0.64	< 0.50	54	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	25
EW-02	7/2/13	ORG	< 0.50	< 0.50	< 0.50	0.72	< 0.50	64	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	27
EW-02	8/10/13	ORG	< 0.50	< 0.50	< 0.50	0.76	< 0.50	80	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	24
EW-02 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.5	< 0.50	32 - 160	< 0.50	< 0.50	< 0.50	< 0.50 - 0.59	< 0.50	< 0.50	< 0.50 - 0.85	6.4 - 48

TABLE 3

PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2013

.....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)	Toulene (1,000/150)	1,4-DIOXANE (3*/1**)
QUALITY ASSURANCE/QUALITY CONTROL SAMPLES																
TB-061313	6/13/13	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-070213	7/2/13	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-07182013	7/18/13	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-07182013A	7/18/13	TB-SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	NA
TB-080713A	8/7/13	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-080713B	8/7/13	TB-SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	NA
TB-080813A	8/8/13	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-080813B	8/8/13	TB-SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	NA
TB-081013	8/10/13	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-081213	8/12/13	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-081413	8/14/03	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-081513A	8/15/13	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-081513B	8/15/13	TB-SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	NA
TB-08162013	8/16/13	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
RB-08142013	8/14/13	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
RB-08142013B	8/14/13	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-051513B	5/15/2013	TB-SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	NA

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

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
E = Data qualified as Estimated in accordance with quality control criteria.
SPT = Split sample
RB = Rinsate blank sample
TB = Trip blank sample
ug/l = Micrograms per liter
MCL = Maximum Contaminant Level
QA = Quality Assurance

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%
Dec-12	1,902,877	42.6	46.7	679	744	91%
Jan-13	1,843,701	41.3	43.7	704	744	95%
Feb-13	1,730,028	42.9	46.5	620	672	92%
1Q2013	5,476,605	42.3	45.6	2,003	2,160	93%
Mar-13	1,690,077	37.9	46.2	610	744	82%
Apr-13	1,700,501	39.4	45.3	625	720	87%
May-13	1,866,274	41.8	46.2	673	744	90%
2Q2013	5,256,852	39.7	45.9	1,907	2,208	86%
Jun-13	1,833,960	42.5	46.2	662	720	92%
Jul-13	1,766,084	39.6	45.8	642	744	86%
Aug-13	1,229,842	27.6	45.5	451	744	61%
3Q2013	4,829,885	36.5	45.9	1,755	2,208	79%
SINCE INCEPTION	79,141,034	30.6	41.2	32,010	43,104	74%

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.

gpm = gallons per minute

Refer to previous quarterly reports for detail of 2008 thru 2012 operational summary

Treatment of groundwater from EW-02 initiated in 2010

CEFF = Carbon effluent

TABLE 5

PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLING SCHEDULE

				SAMPLE FREQUENCY AND LOCATION																			
COMPOUND(S) / CONSTITUENT	ANALYTICAL METHOD	SAMPLE CONTAINER	REPORTING DETECTION LIMITS (milligrams per liter)	Daily Samples ¹ : Days 1-5				Weekly Samples ¹ : Weeks 1-4				Monthly Samples: Week 5+				Quarterly Samples: Week 1+							
				Extraction Well head (EW-02) ²	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)	Extraction Well head (EW-02) ²	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)	Extraction Well head (EW-02) ²	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)	Extraction Well head (EW-02) ²	Post-Oxidation (POX)			
COMPOUNDS/CONSTITUENTS NORMALLY REQUIRED AS PART OF NPDES OR WDR PERMITS, PURSUANT TO CRWQCB REGION 8 ORDER NO. R8-2003-008:																							
Volatile Organic Compounds	EPA 8260B	3 - 40 mL VOA, HCl	QAPP ⁴	X		X	X	X		X	X	X	X		X		X	X	X				
1,4-Dioxane	EPA 8270 Modified	1 L Amber	0.002	X						X					X								
1,4-Dioxane	EPA 8270 SIM	1L Amber	0.0002			X					X						X						
Total Suspended Solids	SM2540D	250 mL poly	10	(a)	(a)										X	X							
Total Dissolved Solids	SM2540C	250 mL poly	10	(a)											X		X		X				
SELECTED METALS																							
Dissolved Metals (Iron, Manganese, Calcium, Sodium, Magnesium)	EPA 6010B	500 mL poly	QAPP ⁴	(a)																		X	
Selenium	EPA 6010B	500 mL poly, HNO ₃	QAPP ^a																			X	
SELECTED INORGANIC CONSTITUENTS																							
Hydroxide Alkalinity	SM2320B	250 mL poly	2.0	(a)																		X	
Bicarbonate Alkalinity	SM2320B	250 mL poly	2.0	(a)																		X	
Carbonate Alkalinity	SM2320B	250 mL poly	2.0	(a)																		X	
Total Alkalinity	SM2320B	250 mL poly	2.0	(a)																		X	
BROMATE EVALUATION																							
Bromate	EPA 317.0	125 mL poly	0.0005	X		X		X		X		X		X		X		X		X			
Bromide	EPA 300.0	125 mL poly	0.05	X		X		X		X		X		X		X		X		X			
OTHER CONSTITUENTS/COMPOUNDS																							
Total Organic Carbon	SM5310B	3 - 40 mL VOA, HCl	3.0	(a)																		X	X
Anions (Chloride, Sulfate, Nitrate, Nitrite, and Phosphate)	EPA 300.0	500 mL poly	Varies	(a)																		X	X
Chemical Oxygen Demand	EPA 410.4	125 mL poly, H ₂ SO ₄	5.0	(a)																		X	X
Field Parameters																							
Dissolve Oxygen (DO)	N/A	N/A	N/A	X		X		X		X		X		X		X		X	X	X			
Electrical Conductance (EC)	N/A	N/A	N/A	X		X		X		X		X		X		X		X	X	X			
Redox Potential	N/A	N/A	N/A	X		X		X		X		X		X		X		X	X	X			
Temperature	N/A	N/A	N/A	X		X	X	X		X		X	X	X		X		X	X	X			
pH	N/A	N/A	N/A	X		X		X		X		X		X		X		X	X	X			
Turbidity	N/A	N/A	N/A	X	X					X	X					X	X						
Flow-Meter	N/A	N/A	N/A	X				X		X			X		X				X				

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 acidH₂SO₄ = Sulfuric acid

EPA = U.S. Environmental Protection Agency

SM = Standard Method

L = Liter

poly = High density polyethylene bottle

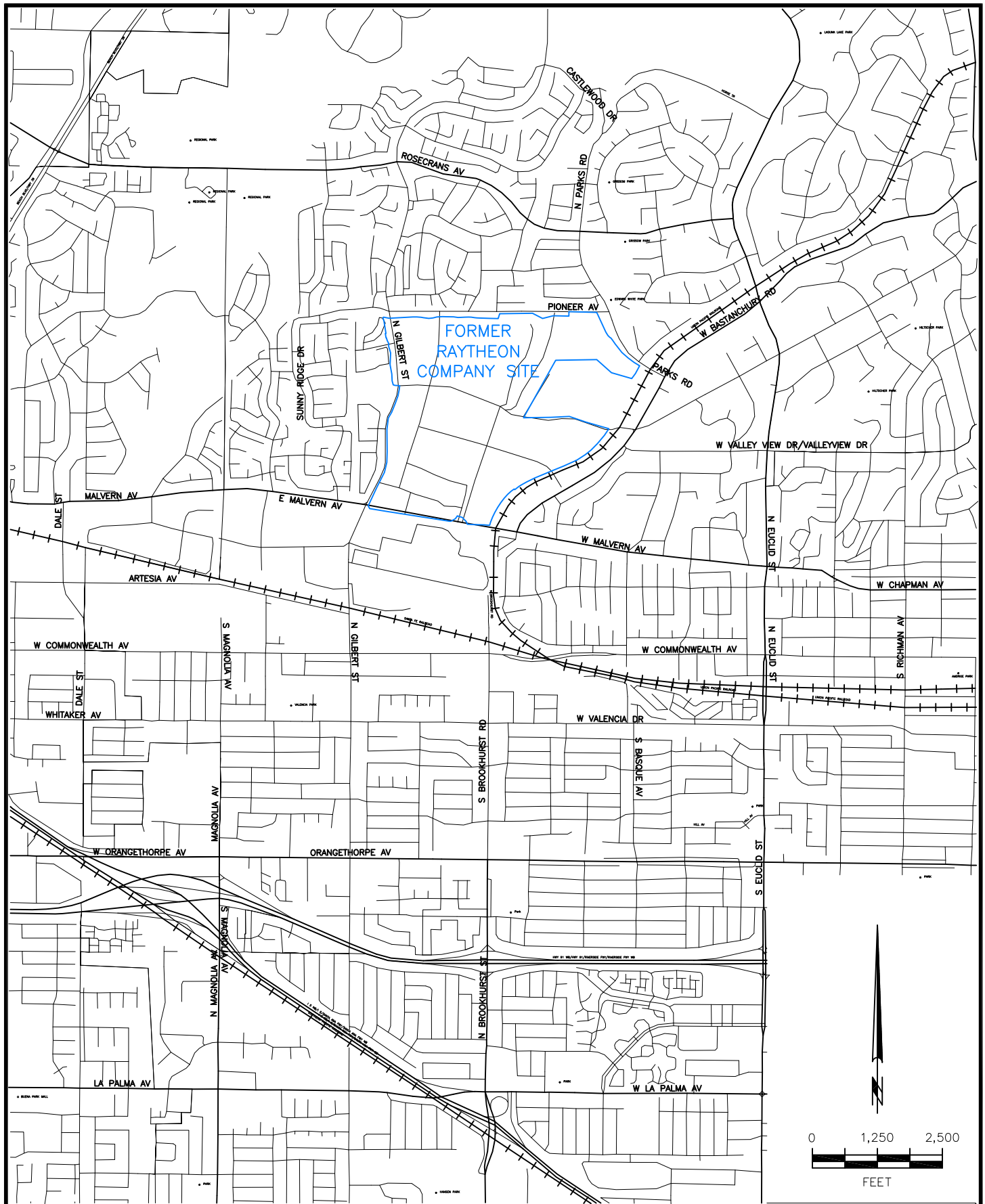
TABLE 6
SELECT COMPOUNDS MONITORED IN
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLES
THIRD QUARTER 2013

Compound	Date	Units	MW-21	EW-01	EW-02	INF*	PF	POX	CBT	CEFF
1,1,2-Trichloroethane (5 ug/L MCL)	06/13/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	07/02/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/10/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/12/13	ug/L	6.1	0.85	--	--	--	--	--	--
1,1-Dichloroethane (5 ug/L MCL)	06/13/13	ug/L	--	--	0.64	--	--	<0.50	<0.50	<0.50
	07/02/13	ug/L	--	--	0.72	--	--	0.53	0.50	<0.50
	08/10/13	ug/L	--	--	0.76	--	--	0.54	0.52	0.53
	08/12/13	ug/L	21	2.9	--	--	--	--	--	--
1,1-Dichloroethene (6 ug/L MCL)	06/13/13	ug/L	--	--	54	--	--	<0.50	<0.50	<0.50
	07/02/13	ug/L	--	--	64	--	--	<0.50	<0.50	<0.50
	08/10/13	ug/L	--	--	80	--	--	<0.50	<0.50	<0.50
	08/12/13	ug/L	1500	220	--	--	--	--	--	--
1,2-Dichloroethane (0.5 ug/L MCL)	06/13/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	07/02/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/10/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/12/13	ug/L	3.5	0.56	--	--	--	--	--	--
cis-1,2-Dichloroethene (6 ug/L MCL)	06/13/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	07/02/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/10/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/12/13	ug/L	<2.5	<0.50	--	--	--	--	--	--
Tetrachloroethene (5 ug/L MCL)	06/13/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	07/02/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/10/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/12/13	ug/L	3.4	0.76	--	--	--	--	--	--
Trichloroethene (5 ug/L MCL)	06/13/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	07/02/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/10/13	ug/L	--	--	<0.50	--	--	<0.50	<0.50	<0.50
	08/12/13	ug/L	19	<0.50	--	--	--	--	--	--
1,4-Dioxane (1 ug/L California Notification Level)	06/13/13	ug/L	--	--	25	--	--	0.89	--	--
	07/02/13	ug/L	--	--	27	--	--	0.98	--	--
	08/10/13	ug/L	--	--	24	--	--	0.86	--	--
	08/12/13	ug/L	370	81	--	--	--	--	--	--
Bromide	06/13/13	ug/L	--	--	210	--	--	210	--	210
	07/02/13	ug/L	--	--	170	--	--	180	--	190
	08/10/13	ug/L	--	--	170	--	--	150	--	140
Bromate (10 ug/L MCL)	06/13/13	ug/L	--	--	<0.3	--	--	5	--	4.7
	07/02/13	ug/L	--	--	<0.3	--	--	5	--	4.3
	08/10/13	ug/L	--	--	0.3	--	--	6	--	4.9
Total Non-Filterable Residue	06/13/13	mg/L	--	--	3.8	--	4.1	--	--	--
	07/02/13	mg/L	--	--	3.9	--	3.7	--	--	--
	08/10/13	mg/L	--	--	3.7	--	3.7	--	--	--
Total Filterable Residue (500 mg/L MCL)	06/13/13	mg/L	--	--	670	--	--	670	--	670
	07/02/13	mg/L	--	--	680	--	--	660	--	660
	08/10/13	mg/L	--	--	670	--	--	660	--	650

FOOTNOTES

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
 INF* = Influent (same as EW-02, when active)
 PF = Post Particulate Filter
 POX = Post Hypox Oxidation
 CBT = Carbon Breakthrough
 CEFF = Carbon Effluent
 VOCs = Volatile organic compounds

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



HARGIS+ASSOCIATES, INC.
Hydrogeology/Engineering

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

FIGURE 1. SITE LOCATION

Sep 09, 2013 - 9:57am ADE - T:\2013\500-599\532 Raytheon\Hydrogeology\H+A BaseMaps\410-9054.dwg

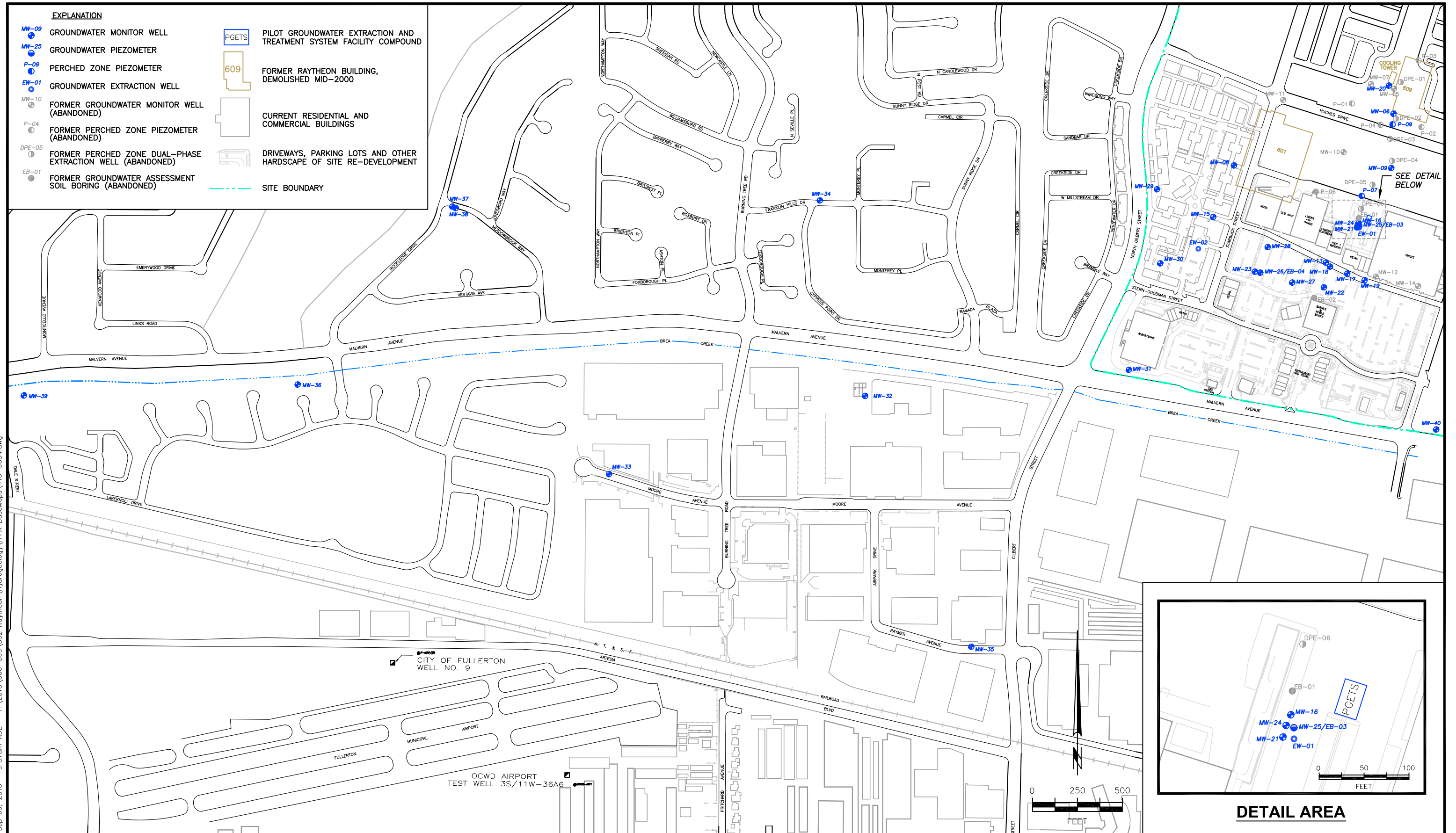
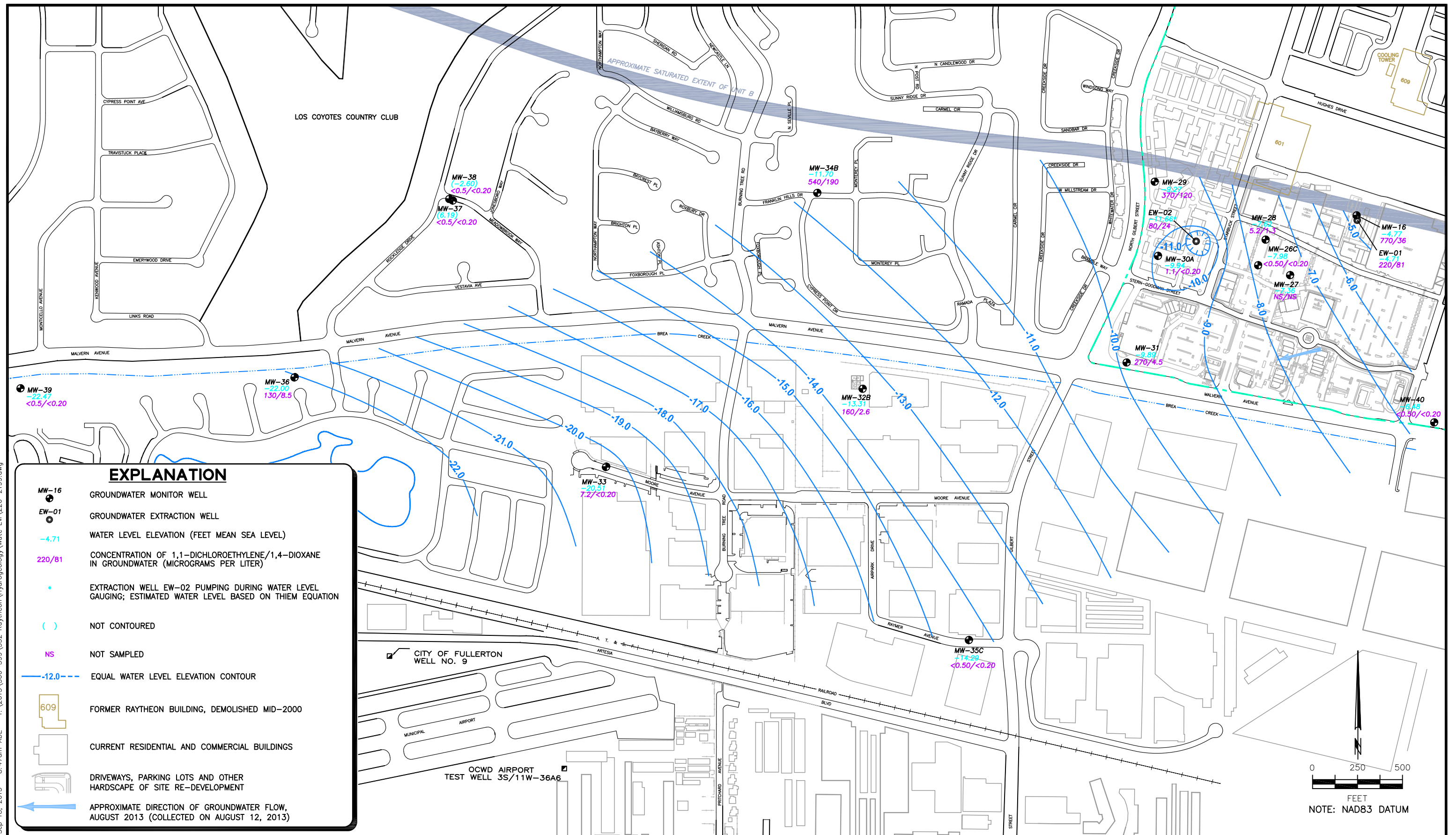


FIGURE 2.
WELL AND PIEZOMETER LOCATIONS

Sep 18, 2013 - 8:47am ADE - T: \\2013\\500-599\\532 Raytheon\\Hydrogeology\\Wate Lv\\220-2199.dwg



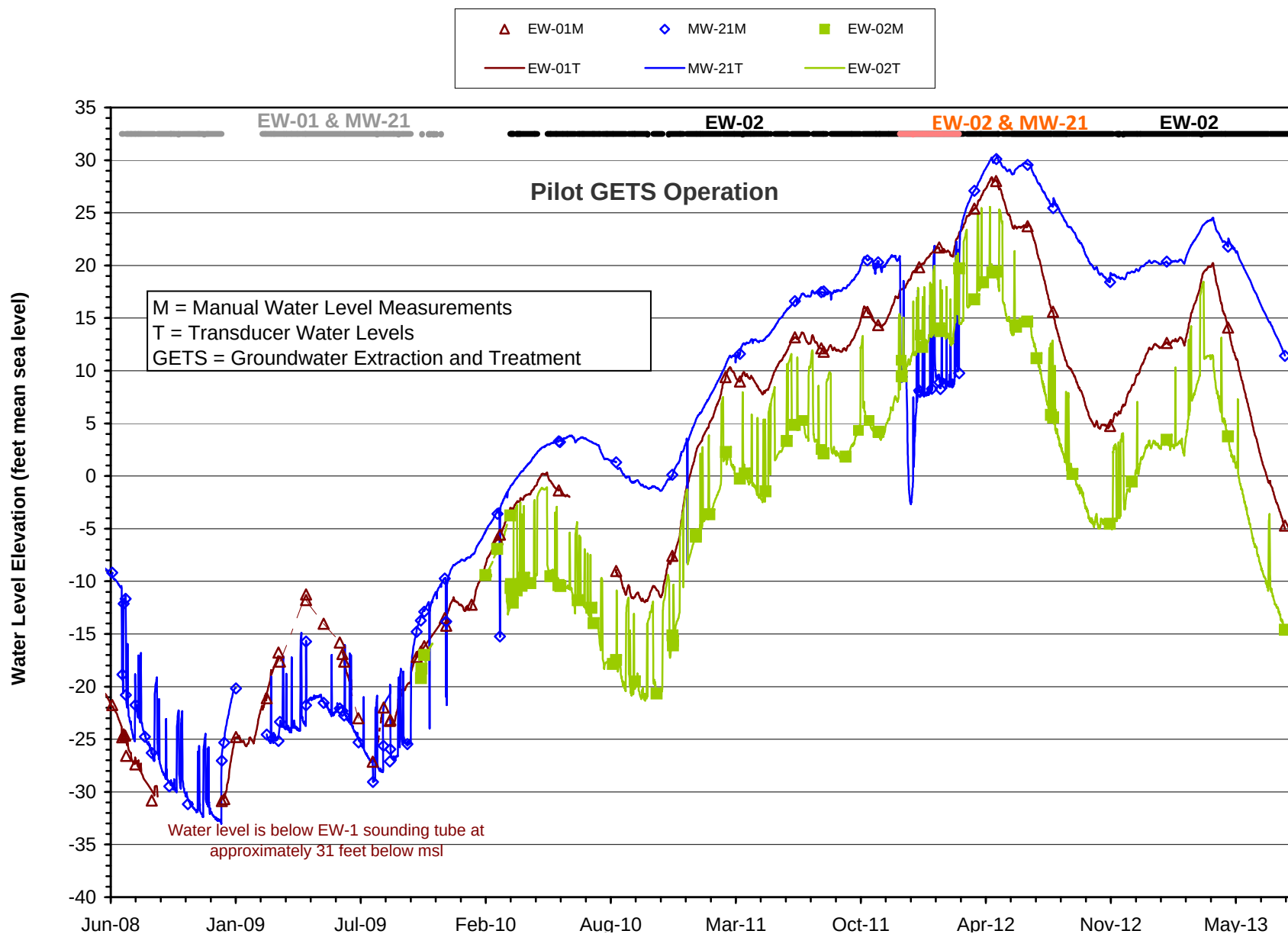


FIGURE 4.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATION
AND EXTRACTION WELL WATER LEVELS

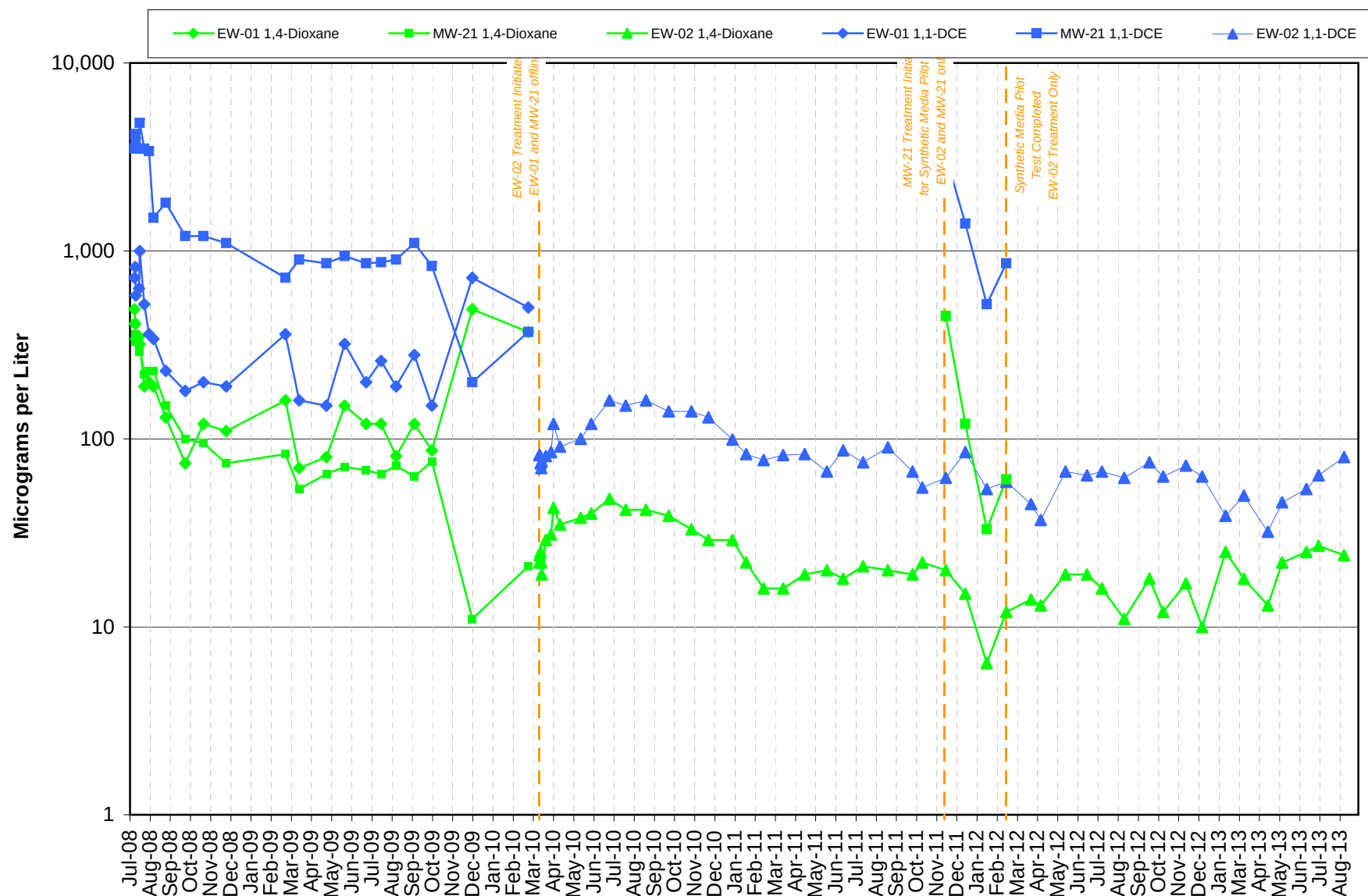


FIGURE 5.
1,1-DICHLOROETHYLENE AND 1,4-DIOXANE CONCENTRATIONS IN
EXTRACTION WELLS

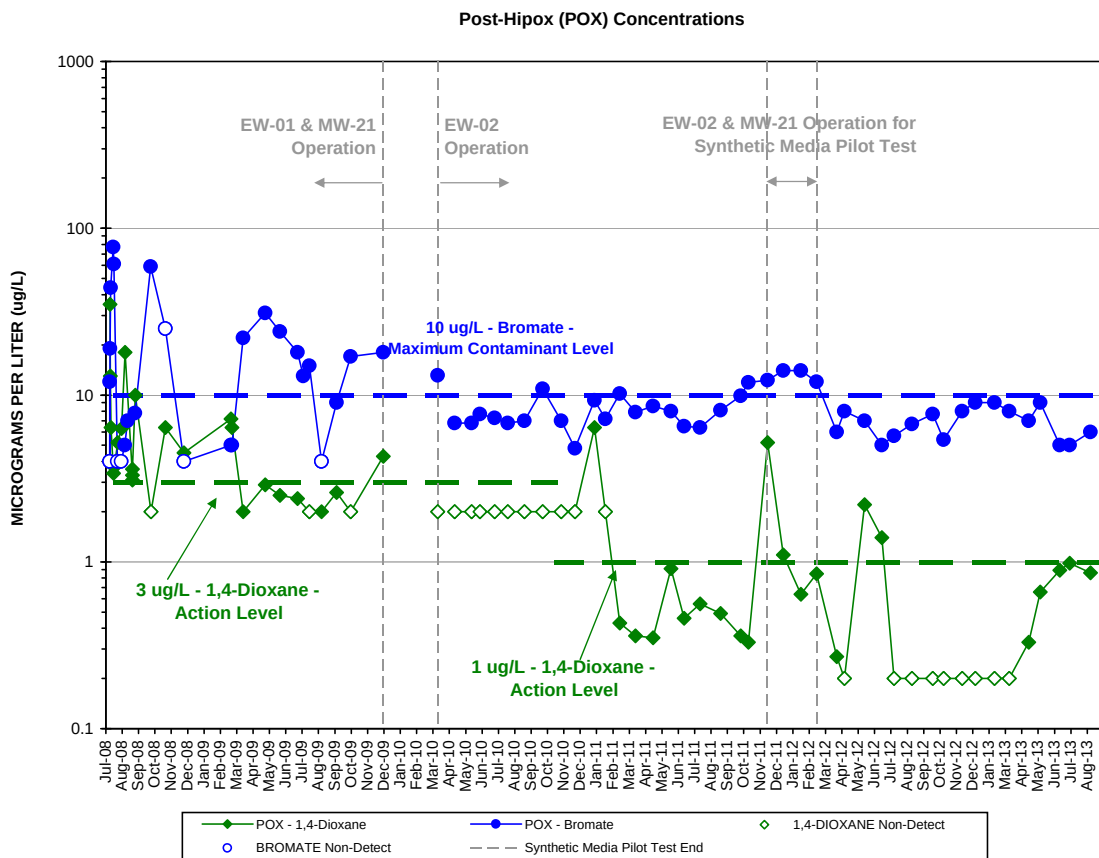
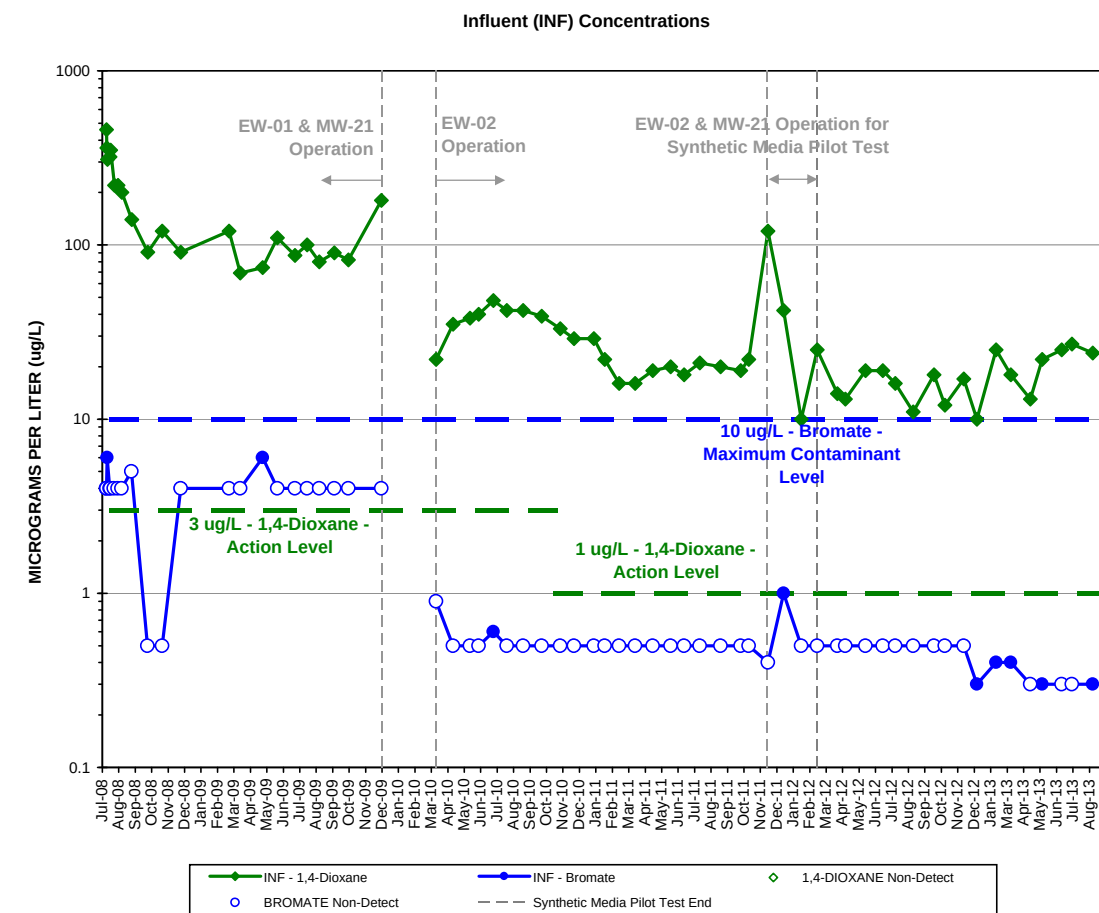
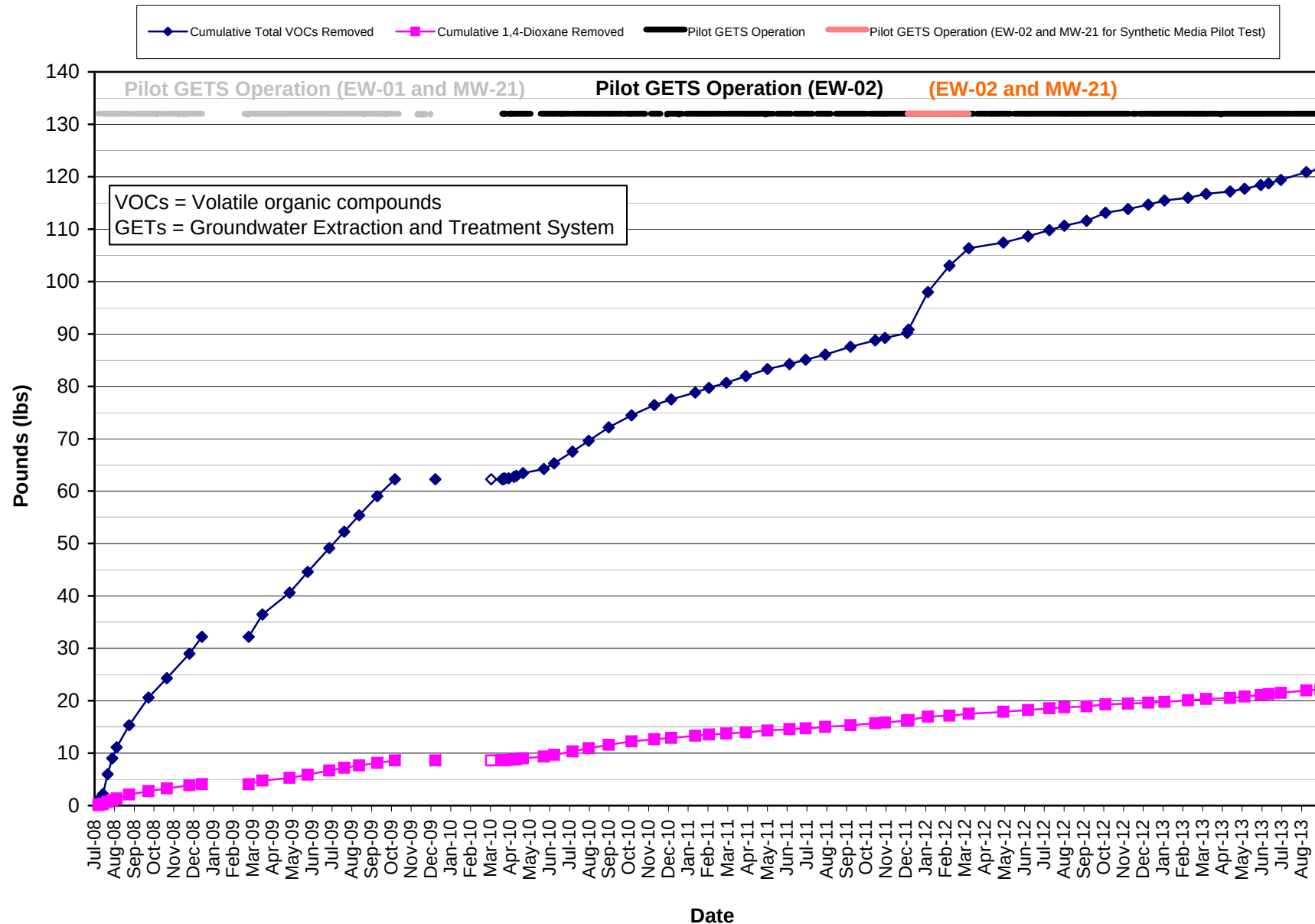


FIGURE 6.
1,4-DIOXANE AND BROMATE IN INFLUENT AND POST-OXIDATION SAMPLES

ug/L = Micrograms per liter



532 H01_Rpt2013-8 FIG7.xls

VOCs = Volatile organic compounds
GETS = Groundwater Extraction and Treatment System

FIGURE 7.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM MASS REMOVAL



HARGIS + ASSOCIATES, INC.

APPENDIX A

GROUNDWATER SAMPLING FIELD FORMS

GROUNDWATER SAMPLING INFORMATION

DATE: 8/12/2023

TASK: 532.30

WELL ID: EW-01

Time 1305 Static DTW (ft below reference point) 145.78	Casing Volume (CV) (gallons) 32.5 3 CV (gallons) 97.5	Weather Conditions	Initials ~~AMS & DM~~ EJM + MER
Casing Total Depth (ft below reference point) 195	Purging Device del. pump Sampling Device del. sample	Time 1329 Temp. 82	Begin Purge 1353 End Purge 1413
Water Column (feet) 49.22	Pump: Depth (ft brp) NA Type Voltage HP	Skies sunny	Gallons Purged 202 CVs Purged 6.2
Casing Capacity (Diameter 4") (gallons per foot) 0.66	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) 0 From 0	DTW (ft brp) 145.91 Time 1417

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)		
1353	145.78	0	0	—	pump	on	—	—	—	—	TOT: 275,988
1355	146.20	45	1.4	26.33	7.45	1.089	1140	8.35	6.9	—	Q = 9.5; TOT: 276,033
1400	146.20	95	2.9	22.98	7.64	1.054	920	7.34	0.80	—	TOT: 276,083
1413	NM	202	6.2	—	pump	off	—	—	—	—	TOT: 276,190

SAMPLE COLLECTION SAMPLE TIME 1405

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

DUPLICATES / SPLITS / BLANKS? Y ☒

If yes, complete appropriate forms.

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

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

Target TOT: 276,086

MS/MSD COLLECTED

GROUNDWATER SAMPLING INFORMATION

DATE: 8/15/2013

TASK: 532.30

WELL ID: MW-08

Time <u>0920</u> Static DTW (ft below reference point)	<u>137.94</u>	Casing Volume (CV) (gallons) <u>4.5</u> 3 CV (gallons) <u>14.0</u>	Weather Conditions	Initials <u>SK</u> <u>AMB & DM</u>
Casing Total Depth (ft below reference point)	<u>163.79</u>	Purging Device <u>Reel-Flo-MP2</u> Sampling Device <u>DED Tubing</u>	Time <u>0930</u> Temp. <u>70°F</u>	Begin Purge <u>0945</u> End Purge <u>1004</u>
Water Column (feet)	<u>25.85</u>	Pump: Depth (ft brp) <u>161</u> Type <u>MP1</u> Voltage <u>115</u> HP <u>0.5</u>	Skies <u>Clear</u>	Gallons Purged <u>16.0</u> CVs Purged <u>3.5</u>
Casing Capacity (Diameter <u>2"</u>) (gallons per foot)	<u>0.17</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>1-2</u> From <u>W</u>	DTW (ft brp) <u>138.96</u> Time <u>1026</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0945	137.94	0									Pump Start
0948	NM	2	0.44	21.89	6.82	1.699	144.0	2.24	44.7	275	Q = 1gpm
0950	NM	4	0.89	22.83	6.86	1.666	129.0	2.56	27.7	275	Q = 1gpm
0952	NM	6	1.33	23.09	6.91	1.665	120.9	1.41	8.15	275	Q = 1gpm
0954	NM	8	1.78	23.27	6.96	1.652	112.6	0.96	6.76	275	Q = 1gpm
0957	NM	10.5	2.33	23.72	7.06	1.663	95	1.46	7.01	275	Q = ~0.8gpm
1001	NM	14.0	3.0	23.81	7.12	1.669	79.0	1.52	3.91	275	Q = ~0.8gpm
1003											Samples Taken
1004	NM	16.0									PUMP OFF

SAMPLE COLLECTION SAMPLE TIME <u>1003</u>		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>3</u>	40 ml VOA <u>w/HCL</u>
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>		
If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm: SK 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.)

ded tubing left in well.

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14/13

TASK: 532.30

WELL ID: MW-09

Time 11:19 Static DTW (ft below reference point) 105.03	Casing Volume (CV) (gallons) 4.4 3 CV (gallons) N/A	Weather Conditions	Initials ~~AMS~~ & DM + ASF
Casing Total Depth (ft below reference point) 191	Purging Device Quick E bailer Sampling Device Ded bailer	Time 11:25 Temp. 77°F	Begin Purge 11:25 End Purge 15:34
Water Column (feet) 259.7	Pump: Depth (ft brp) N/A Type N/A Voltage N/A HP N/A	Skies SUNNY	Gallons Purged 5.25 CVs Purged 1.19
Casing Capacity (Diameter 2") (gallons per foot) 0.17	Monitor Well Recharge Rate: Slow X Fast	Wind (mph) 0-3 From W	DTW (ft brp) 15:39 Time 105.01

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)		
11:25	105.03	0	0	BEGIN	BAILING						
11:26	NM	0.25	0.06	23.11	7.35	2786	44.3	4.90	17.0	N/A	1/18 gallon TOTAL BAILED = 1/4 gallon
11:29	NM	0.75	0.17	22.83	7.33	2530	50.0	4.50	29.2	N/A	
11:33	NM	1.5	0.34	22.59	7.38	2642	62.6	6.19	22.0	N/A	
11:39	NM	2.25	0.51	22.69	7.42	2693	64.4	6.35	25.2	N/A	
11:42	NM	3.00	0.68	22.70	7.44	2621	56.8	5.25	20.1	N/A	
11:44	NM	3.75	0.85	22.63	7.32	2617	63.4	4.50	33.8	N/A	
11:50	NM	4.5	1.02	22.48	7.38	2726	62.5	4.41	73.0	N/A	
15:25	104.99	5.25	1.19	23.36	7.70	2959	34.1	4.29	17.8	N/A	Returned @ 15:15 to sample well

SAMPLE COLLECTION SAMPLE TIME 15:30

ANALYSIS QUANTITY TYPE

8260B VOCs	2	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

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.)

pumped 1 casing volume, wait 2 hr for recharge + sampling.

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14/13

TASK: 532.30

WELL ID: NW-15

Time <u>13:12</u> Static DTW (ft below reference point) <u>134.28</u>	Casing Volume (CV) (gallons) <u>5.5</u> 3 CV (gallons) <u>16.5</u>	Weather Conditions	Initials <u>AMB & DM + ASF</u>
Casing Total Depth (ft below reference point) <u>160.80</u>	Purging Device <u>QUICK-E Bailer</u> Sampling Device <u>Deed. bailer</u>	Time <u>13:03</u> Temp. <u>82°F</u>	Begin Purge <u>13:25</u> End Purge <u>14:42</u>
Water Column (feet) <u>32.52</u>	Pump: Depth (ft brp) <u>N/A</u> Type <u>N/A</u> Voltage <u>N/A</u> HP <u>N/A</u>	Skies <u>SUNNY</u>	Gallons Purged <u>17.5</u> CVs Purged <u>1.00</u>
Casing Capacity (Diameter <u>2"</u>) (gallons per foot) <u>0.17</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0-5</u> From <u>W</u>	DTW (ft brp) <u>136.94</u> Time <u>14:48</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)		
13:25	134.28	0	0	- BEGIN BAILING -							transducer removed @ 13:14
13:26	NM	0.25	0.05	23.40	7.73	1.786	19.2	5.30	7.56	N/A	
13:39	NM	2.75	0.50	22.75	7.09	1.791	164.0	4.68	323	N/A	
14:00	NM	5.5	1.0	22.32	NM	NM	NM	NM	426	N/A	stopped pumping b/c taking too much time moved to pump
~~14:20~~	~~14:13~~	~~0~~	~~0~~	~~23.49~~	~~7.73~~	~~1.786~~	~~19.2~~	~~5.30~~	~~7.56~~	~~N/A~~	~~transducer removed @ 13:14~~
14:20	NM	0.5	1.18	23.49	7.73	1.786	19.2	5.30	7.56	N/A	transducer removed @ 13:14
14:26	NM	9.5	1.73	23.43	7.73	1.786	19.2	5.30	7.56	N/A	transducer removed @ 13:14
14:32	NM	12.5	2.27	23.38	6.02	1.817	75.9	3.59	73.0	281	Flowrate $\approx$ 0.5 GPM
14:38	NM	15.5	3.00	23.45	6.59	1.833	79.3	3.52	NM	281	Flowrate $\approx$ 0.5 GPM
14:40	14:42	10.5	1.75	23.45	6.59	1.833	79.3	3.52	NM	281	Flowrate $\approx$ 0.5 GPM
END PUMPING											

SAMPLE COLLECTION SAMPLE TIME 14:40

ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA
8270 SIM 1,4 dioxane	0	1 L Amber
8270 MOD 1,4 dioxane	0	1 L Amber

8260B VOCs 3 40 ml VOA

8270 SIM 1,4 dioxane 0 1 L Amber

8270 MOD 1,4 dioxane 0 1 L Amber

DUPLICATES / SPLITS / BLANKS?

If yes, complete appropriate forms.

Y

N

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

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

3.75 gal @ 13:44

pump depth = ~103 ft brp

pumping device = groundfos MP w/ deed tubing

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14/13

TASK: 532.30

WELL ID: MW-10

Time: 15:53	Static DTW (ft below reference point) 147.5	Casing Volume (CV) (gallons) 20.5	3 CV (gallons) 61.5	Weather Conditions		Initials: AMS & DM + ASF
Casing Total Depth (ft below reference point) 178.5	Purging Device: Groundfos Pump	Sampling Device: Ded. Tubing		Time: 15:48	Temp: 81°F	Begin Purge: 10:24
Water Column (feet) 30.99	Pump: Depth (ft brp) ~17	Type: MPI	Voltage: 115	HP: 0.5	Skies: Sunny	End Purge: 10:54
Casing Capacity (Diameter 4") (gallons per foot) 0.100	Monitor Well Recharge Rate: Slow			Fast: X	Wind (mph) 0-5	From: W
				DTW (ft brp) 147.65		Time: 17:13

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	Temp. (C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)	Pump Frequency Hz	COMMENTS
10:24	147.5	0	0	22.99	8.00	1.040	35.9	4.70	15.3	311	Remove Transducer @ 15:50
10:27	151.50	0.75	0.75	22.99	8.00	1.040	35.9	4.70	15.3	311	FLOWRATE ≤ 2.25 GPM
10:31	152.37	1.5	1.5	23.10	7.60	1.040	55.2	4.49	4.03	311	FLOWRATE ≤ 2.25 GPM
10:36	152.91	2.7	1.32	23.12	7.15	1.039	70.1	4.17	7.12	311	" "
10:41	153.35	3.83	1.87	23.09	6.89	1.040	85.3	4.13	7.12	311	" "
10:46	153.63	49.55	2.42	23.09	6.69	1.042	94.6	4.15	3.50	311	" "
10:51	153.80	61.5	3.00	23.10	6.50	1.045	102.5	4.03	3.40	311	" "
10:54	NM	08.25	3.33	STOP	PUMPING						Reduced Flow Rate for Sampling

SAMPLE COLLECTION SAMPLE TIME: 10:52		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	40 ml	VOA	Rinsate Blank @ 10:05						
8270 SIM 1,4 dioxane	1 L	Amber	(3) 40 ML VOA'S: 8260B VOC'S						
8270 MOD 1,4 dioxane	1 L	Amber							
DUPLICATES / SPLITS / BLANKS? ☒ Y ☐ N If yes, complete appropriate forms.									

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14/13

TASK: 532.30

WELL ID: MW-18

Time 9:01 Static DTW (ft below reference point) 139.89	Casing Volume (CV) (gallons) 32.5 3 CV (gallons) 97.5	Weather Conditions	Initials AMB & DM + ASF
Casing Total Depth (ft below reference point) 194	Purging Device Grounding pump Sampling Device Ded. twining	Time 8:54 Temp. 75°F	Begin Purge 9:15 End Purge 10:08
Water Column (feet) 54.11	Pump: Depth (ft brp) 790 Type MP Voltage 115 HP 0.5	Skies partly cloudy	Gallons Purged 106 CVs Purged 3.26
Casing Capacity (Diameter 4") (gallons per foot) 0.0	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) 0-5 From W	DTW (ft brp) 143.45 Time 10:21

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)		
9:15	139.89	0	0	22.04	7.69	1.199	40.7	4.75	25.8	305	~ 2 GPM
9:17	NM	20	0.12	22.04	7.69	1.199	40.7	4.75	25.8	305	~ 2 GPM
9:25	NM	20	0.102	22.58	7.40	0.999	44.8	1.14	5.39	305	~ 2 GPM
9:33	NM	36	1.11	22.71	7.29	1.021	50.0	1.65	2.05	305	~ 2 GPM
9:41	NM	52	1.00	22.79	7.24	1.055	55.3	2.13	2.07	305	~ 2 GPM
9:49	NM	68	2.09	22.83	7.22	1.082	58.0	2.47	3.73	305	~ 2 GPM
9:57	NM	84	2.58	22.84	7.21	1.103	58.0	2.69	2.20	305	~ 2 GPM
10:05	NM	100	3.07	22.86	7.20	1.123	58.6	2.98	0.64	305	~ 2 GPM reduce flow rate for sampling
10:08	NM	106	3.26								

SAMPLE COLLECTION SAMPLE TIME 10:05		
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
DUPPLICATES / SPLITS (BLANKS?) ☒ Y ☐ N If yes, complete appropriate forms.		

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

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

Rinsate Blank @ 9:00 → (3) 40 ml VOAs: 8260B VOCs

GROUNDWATER SAMPLING INFORMATION

DATE 01/13/13

TASK: 532.30

WELL ID: MW-20

Time 9:35 Static DTW (ft below reference point) 100.41	Casing Volume (CV) (gallons) 22.17 3 CV (gallons) 66.5	Weather Conditions	Initials AMB & DM ASF/DM
Casing Total Depth (ft below reference point) 194	Purging Device MPI GRUNDFOS Sampling Device DEEP TUBING	Time 9:35 Temp. 70°F	Begin Purge 9:52 End Purge 10:45
Water Column (feet) 33.59	Pump: Depth (ft brp) 192 Type MPI Voltage 115 HP 0.5	Skies SUNNY/CLEAR	Gallons Purged 68 CVs Purged 307
Casing Capacity (Diameter 4") (gallons per foot) 0.00	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) 0 From —	DTW (ft brp) 161.73 Time 11:01

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)		
9:52	100.41	0	0	PUMP TURNED ON							
9:53	101.81	2.5	0.11	22.44	6.92	1.083	70.9	0.50	77.7	297	~1 GPM = FLOWRATE
10:04	102.96	11.0	0.50	23.28	7.63	1.087	70.8	5.97	20.4	303	generator stopped @ 10:00 restarted @ 10:04
10:15	105.04	22.0	1.0	23.37	7.61	1.088	80.6	0.28	10.85	313	~1 GPM = FLOWRATE
10:26	105.78	39.0	1.74	23.38	7.60	1.089	78.1	5.86	6.91	313	~1 GPM ~ 1.5 GPM = FLOWRATE
10:35	106.00	52.0	2.35	23.37	7.57	1.091	82.1	0.32	3.17	313	~1.5 GPM = FLOWRATE
10:44	106.16	65	2.93	23.39	7.59	1.092	74.8	0.00	3.14	313	~1.5 GPM = FLOWRATE
10:40	161.73	68	307	PUMP TURNED OFF							
	taken at 11:01										

SAMPLE COLLECTION SAMPLE TIME 10:45			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	3	40 ml VOA				
8270 SIM 1,4 dioxane	1	1 L Amber				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y N If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 8/12/2013

TASK: 532.30

WELL ID: HW-21

Time <u>1300</u> Static DTW (ft below reference point)	<u>129.76</u>	Casing Volume (CV) (gallons) <u>71.4</u> 3 CV (gallons) <u>214.3</u>	Weather Conditions	Initials <u>AMB & DM</u> <u>ETH & MER</u>
Casing Total Depth (ft below reference point)	<u>238</u>	Purging Device <u>ded.</u> Sampling Device <u>ded. sample</u>	Time <u>1329</u> Temp. <u>82</u>	Begin Purge <u>1353</u> End Purge <u>1413</u>
Water Column (feet)	<u>108.24</u>	Pump: Depth (ft brp) <u>NA</u> Type <u>RT</u> Voltage <u>HP</u>	Skies <u>sunny</u>	Gallons Purged <u>769</u> CVs Purged <u>2.7</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.66</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft brp) <u>130.76</u> Time <u>1418</u>

[illegible]

SAMPLE COLLECTION		SAMPLE TIME	AIR MONITORING PID/FID ppm: VAULT NA				BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)						
8260B VOCs	3	40 ml VOA	TOT (Target) = 556,646 gal						
~~8270 SIM 1.4 dioxane~~		1 L Amber							
8270 MOD 1.4 dioxane	1	1 L Amber							
DUPLICATES / SPLITS / BLANKS?		Y	N						

GROUNDWATER SAMPLING INFORMATION

DATE: 8/15/2013

TASK: 532.30

WELL ID: MW-26C

Time <u>1101</u> Static DTW (ft below reference point) <u>144.64</u>	Casing Volume (CV) (gallons) <u>60.2</u> 3 CV (gallons) <u>180.6</u>	Weather Conditions	Initials <u>AMB & DM</u> <u>DM/SLK</u>
Casing Total Depth (ft below reference point) <u>499</u>	Purging Device <u>DED pump</u> Sampling Device <u>DED tubing</u>	Time <u>1102</u> Temp. <u>76°</u>	Begin Purge <u>1106</u> End Purge <u>1228</u>
Water Column (feet) <u>354.36</u>	Pump: Depth (ft brp) <u>330</u> Type <u>Gumpfos</u> Voltage <u>115</u> HP <u>.5</u>	Skies <u>Sunny / Humid</u> <u>W 100% H</u>	Gallons Purged <u>190</u> CVs Purged <u>3.2</u>
Casing Capacity (Diameter <u>2</u> ") (gallons per foot) <u>.17</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0-3</u> From <u>W</u>	DTW (ft brp) <u>144.70</u> Time <u>1228</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1106											Q = 2.25
1119	145.41	30	0.5	22.61	9.25	0.460	-22.50	0.40	0.00 ~~2.24~~	323	
1132	145.41	59.3	.9	22.69	7.77	1.033	-8.7	2.09	0	323	
1145	145.41	90	1.5	22.80	7.56	1.043	-76.7	2.19	5.07	323	
1158	145.41	120	2	22.81	7.52	1.041	-72.4	2.25	6.2	323	
1211	145.41	150	2.5	22.81	7.51	1.040	-68.8	2.29	3.33	323	
1224	145.40	180	3.0	22.83	7.49	1.046	-65.9	2.39	16.8	323	
1226											Samples Taken
1228	144.70	190	3.20								Pump OFF

SAMPLE COLLECTION SAMPLE TIME <u>1226</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA <u>W/ HCL</u>
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: 8/13/13

TASK: 532.30

WELL ID: MN-28

Time 10:24 Static DTW (ft below reference point) 148.58	Casing Volume (CV) (gallons) 27 3 CV (gallons) 81	Weather Conditions	Initials AMB & DM + ASE
Casing Total Depth (ft below reference point) 375	Purging Device PED PUMP Sampling Device PIPE STAND	Time 10:17 Temp. 84°F	Begin Purge 10:30 End Purge 10:43
Water Column (feet) 45	Pump: Depth (ft brp) 330 Type Grundfos Voltage 240 HP	Skies SUNNY	Gallons Purged 93.0 CVs Purged 3.44
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) 0-5 From W	DTW (ft brp) 149.92 Time 10:43

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)		
10:30	148.58	0	0	PUMP TURNED ON							
10:30	NM	2.8		24.14	7.54	1.039	25.0	0.09	45.5		
10:32	154.08	13.5	0.5	21.54	7.33	1.011	-7.8	3.84	0.95		FLOWRATE ≈ 5 GPM
10:34	154.95	27.0	1.0	21.01	7.34	1.274	-38.0	5.47	0.44		FLOWRATE ≈ 7 GPM
10:36	154.95	50.5	1.5	21.05	7.32	1.302	-23.0	0.20	0		FLOWRATE ≈ 7 GPM
10:38	155.07	54.0	2.0	21.07	7.33	1.301	-23.8	0.33	0		FLOWRATE ≈ 7 GPM
10:40	155.12	67.5	2.5	21.08	7.33	1.301	-28.2	0.32	0		FLOWRATE ≈ 7 GPM
10:42	155.15	81.0	3.0	21.08	7.32	1.304	-27.9	0.37	0		Reduced Flow Rate for sampling
10:43	149.92	93.0	3.44	PUMP TURNED OFF							

SAMPLE COLLECTION SAMPLE TIME 10:45 10:43
ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA
8270 SIM 1.4 dioxane 1 1 L Amber
8270 MOD 1.4 dioxane 0 1 L Amber

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

Y

N

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

GROUNDWATER SAMPLING INFORMATION

DATE: 8/15/2013

TASK: 532.30

WELL ID: MW-29

Time <u>1445</u> Static DTW (ft below reference point)	<u>151.31</u>	screen <u>3</u>	<u>30</u> <u>5</u> <u>90</u>	Weather Conditions	Initials <u>AMB & DM</u> <u>EJH + ASF</u>
Casing Total Depth (ft below reference point)	<u>240</u>	Purging Device <u>Dec. pump</u>	Sampling Device <u>Dec. pressure</u>	Time <u>1450</u> Temp. <u>85</u>	Begin Purge <u>15:45</u> End Purge <u>16:15</u>
Water Column (feet)	<u>50</u>	Pump: Depth (ft brp) <u>190</u> Type <u>gravel</u>	Voltage <u>240</u> HP	Skies <u>sunny</u>	Gallons Purged <u>102.7</u> CVs Purged <u>3.42</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow	Fast <u>X</u>	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft brp) <u>150.24</u> Time <u>16:15</u>

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)		
<u>15:45</u>	<u>151.31</u>	<u>0</u>	<u>0</u>	—	—	—	—	—	—	—	—
<u>15:49</u>	<u>157.76</u>	<u>10</u>	<u>0.33</u>	<u>22.40</u>	<u>7.80</u>	<u>1.114</u>	<u>19.6</u>	<u>2.23</u>	<u>NM</u>	—	<u>FLOWRATE ≈ 2.5 GPM</u>
<u>15:50</u>	<u>157.86</u>	<u>33</u>	<u>1.27</u>	<u>22.23</u>	<u>7.47</u>	<u>1.369</u>	<u>39.2</u>	<u>3.76</u>	<u>0.30</u>	—	<u>FLOWRATE ≈ 4 GPM</u>
<u>15:59</u>	<u>157.87</u>	<u>48</u>	<u>1.60</u>	<u>22.23</u>	<u>7.41</u>	<u>1.485</u>	<u>40.3</u>	<u>4.57</u>	<u>0</u>	—	<u>FLOWRATE ≈ 3.5 GPM</u>
<u>16:03</u>	<u>157.91</u>	<u>63</u>	<u>2.10</u>	<u>22.25</u>	<u>7.34</u>	<u>1.574</u>	<u>42.5</u>	<u>5.54</u>	<u>0</u>	—	<u>FLOWRATE ≈ 3.75 GPM</u>
<u>16:07</u>	<u>157.91</u>	<u>76</u>	<u>2.53</u>	<u>22.24</u>	<u>7.32</u>	<u>1.587</u>	<u>42.9</u>	<u>5.57</u>	<u>0</u>	—	<u>FLOWRATE ≈ 3.25 GPM</u>
<u>16:11</u>	<u>157.91</u>	<u>91</u>	<u>3.03</u>	<u>22.23</u>	<u>7.30</u>	<u>1.597</u>	<u>42.2</u>	<u>5.94</u>	<u>0</u>	—	<u>FLOWRATE ≈ 3.75 GPM</u>
<u>16:15</u>	<u>150.24</u>	<u>102.7</u>	<u>3.42</u>	—	—	—	—	—	—	—	—

SAMPLE COLLECTION SAMPLE TIME 1615

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>15</u>	40 ml VOA
8270-SIM 1,4 dioxane	<u>5</u>	1 L Amber
8270 MOD 1,4 dioxane	<u>5</u>	1 L Amber

DUPLICATES / SPLITS / BLANKS? Y N

If yes, complete appropriate forms.

AIR MONITORING RID/EID 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.)

DUP: MW-2900 @ 15:15

SPT: MW-29 @ 16:15

MS/MSD

GROUNDWATER SAMPLING INFORMATION

DATE: 01/15/13

TASK: 532.30

WELL ID: NW-30A

Time 14:00 Static DTW (ft below reference point) 130.81	Casing Volume (CV) (gallons) 17.6 3 CV (gallons) 52.8	Weather Conditions Time 14:07 Temp. 87°F Skies Sunny Wind (mph) 0-5 From W	Initials AMB & DM ASF/21H
Casing Total Depth (ft below reference point) 504 Screen to Pump Water Column (feet) 44	Purging Device ded. pump Sampling Device ded. tubing		Begin Purge 14:10 End Purge 14:25
Casing Capacity (Diameter 3") (gallons per foot) 0.40	Pump: Depth (ft brp) 520 Type Grundfos Voltage 240 HP		Gallons Purged 70.7 CVs Purged 4.02
	Monitor Well Recharge Rate: Slow Fast X		DTW (ft brp) 139.00 Time 14:25

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)		
14:10		0	0	START PURGE							
14:13	140.39	12	0.08	21.83	7.59	0.784	9.1	1.44	0.65		FLOWRATE ≈ 4 GPM
14:15	140.48	23	1.31	21.54	7.64	0.805	-24.3	1.16	0.65		FLOWRATE ≈ 5.5 GPM
14:17	140.42	34	1.93	21.78	7.47	0.807	-3.8	1.49	0		FLOWRATE ≈ 5.5 GPM
14:19	140.47	45	2.56	21.83	7.12	0.805	14.1	2.39	0		FLOWRATE ≈ 5.5 GPM
14:21	140.50	54	3.10	21.83	7.36	0.794	-1.2	1.62	0		FLOWRATE ≈ 4.5 GPM
14:23	140.48	63	3.58	21.84	7.39	0.791	-1.3	1.65	0		FLOWRATE ≈ 4.5 GPM
14:25	139.00	70.7	4.02	END PURGE							

SAMPLE COLLECTION SAMPLE TIME 14:25			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	3	40 ml VOA				
8270 SIM 1,4 dioxane	1	1 L Amber				
8270 MOD 1,4 dioxane	0	1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y N						
If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE 8/15/13

TASK: 532.30

WELL ID: MW-30B

Time 13:21	Static DTW (ft below reference point) 134.42	Weather Conditions	Initials: ~~AMB & DM~~ ^{ASF} ~~DM~~
Casing Total Depth (ft below reference point) 619	Purging Device Ded pump	Time 13:24 Temp. 87°F	Begin Purge 13:26 End Purge 14:00
Water Column (feet) 99	Pump: Depth (ft brp) 1520 Type EMU HP Voltage 240	Skies Sunny/Clear	Gallons Purged 140 CVs Purged 35
Casing Capacity (Diameter ") (gallons per foot) 0.40	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) 0-5 From W	DTW (ft brp) 152.09 Time 14:00

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)		
13:26	134.42	(X)	(X)	START PUMPING							
13:27	148.2	5.7	0.15	22.81	7.43	1.332	84.8	1.16	18		FLOWRATE ≈ 5 GPM
13:31	151.18	24	0.60	21.62	8.20	1.268	-57.4	0.59	NM		FLOWRATE ≈ 4.6 GPM
13:35	152.33	39	0.98	21.83	6.96	1.783	-7.9	4.44	0.45		FLOWRATE ≈ 3.8 GPM
13:42	153.00	64	1.60	21.91	7.22	1.307	-3.0	2.82	31		FLOWRATE ≈ 3.6 GPM
13:49	154.72	98	2.45	21.98	7.26	1.302	-2.1	2.71	0.2		FLOWRATE ≈ 4.9 GPM
13:51	155.03	115	2.88	21.99	7.27	1.313	-1.5	2.74	3.1		FLOWRATE ≈ 4.25 GPM
13:50	155.46	130	3.25	22.07	7.29	1.322	-1.7	2.74	0.00		FLOWRATE ≈ 5.0 GPM
14:00	152.09	140	3.5	END PUMPING							

SAMPLE COLLECTION SAMPLE TIME 14:00	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	Duplicate Sample: 300B @ 13:30
8270 SIM 1,4 dioxane 32 1 L Amber	Split Sample: @ 14:00
8270 MOD 1,4 dioxane 1 1 L Amber	
DUPLICATES/SPLITS/BLANKS? If yes, complete appropriate forms.	

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14/2013

TASK: 532.30

WELL ID: MW-31

Time 1513 Static DTW (ft below reference point)	129.92	Screen S	Casing Volume (CV) (gallons) 81	3 CV (gallons) 243	Weather Conditions	Initials ~~AMS & DM~~ E.J.H. & S.K.
Casing Total Depth (ft below reference point)	996	Purging Device Red pump	Sampling Device 5100 Pipe Stems	Time 1525 Temp 89	Begin Purge 1517 End Purge 1516	
~~5 Pump to 6 ft~~ Water Column (feet)	54	Pump: Depth (ft brp) 992	Type grounds	Skies Sunny	Gallons Purged 286 CVs Purged 35	
Casing Capacity (Diameter 6") (gallons per foot)	1.5	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0 From 0	DTW (ft brp) 130.54 Time 1546	

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)		
1517	129.92	0	0			Pump on					
1520	132.07	28	0.34	21.18	7.93	0.869	24.4	3.52	0.70		Q=10gpm
1524	132.15	66	0.81	21.27	7.97	1.422	37.0	2.92	9.0		Q=9.5gpm
1528	132.18	107	1.32	21.24	8.02	1.239	31.8	2.52	180		Q=10.2gpm
1532	132.20	149	1.84	21.46	7.92	1.122	30.2	2.19	65		Q=10.2gpm
1536	132.20	186	2.30	21.47	7.86	1.063	27.5	1.79	35		Q=9.25gpm
1540	132.22	227	2.80	21.46	7.81	1.028	27.2	1.79	14		Q=10.25gpm
1544	132.22	266	3.30	21.46	7.80	1.028	29.1	1.82	6.6		
1546	NM	286	3.50			Pump off					

SAMPLE COLLECTION SAMPLE TIME 1545	ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA	
8270 SIM 1,4 dioxane	1	1 L Amber	
8270-MOD 1,4 dioxane		1 L Amber	
DUPLICATES / SPLITS / BLANKS?	Y		(N)

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

GROUNDWATER SAMPLING INFORMATION

DATE: 8/13/2013

TASK: 532.30

WELL ID: MW-32A

Time <u>1025</u> Static DTW (ft below reference point)	<u>108.74</u>	Screen <u>SV</u> Casing Volume (CV) (gallons) <u>207</u> <u>SV</u> <u>621</u>	Weather Conditions Time <u>1100</u> Temp. <u>77</u>	Initials <u>AMB & DM</u> <u>EJH/SLK</u>
Casing Total Depth (ft below reference point)	<u>905</u>	Purging Device <u>del. pump</u> Sampling Device <u>NDP/stand</u>	Skies <u>Sunny</u>	Begin Purge <u>1032</u> End Purge <u>1131</u>
Pump 2 screen bottom Water Column (feet)	<u>305</u>	Pump: Depth (ft brp) <u>560</u> Type <u>gandis</u> Voltage <u>240</u> HP	Wind (mph) <u>0</u> From <u>0</u>	Gallons Purged <u>673</u> CVs Purged <u>3.2</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	DTW (ft brp) <u>10892</u> Time <u>1136</u>	

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)		
1032	108.74	0	0			Pump on					
1037	109.86	60	0.30	21.04	7.09	0.938	-208.0	0.6	7.1		Q = 7 gpm
1046	110.00	168	0.80	21.13	7.09	0.944	-148.2	1.05	45		↓
1055	110.06	270	1.30	21.24	7.17	0.958	-131.0	1.64	31		Q = 11.0 gpm
1104	110.06	375	1.80	21.27	7.23	0.953	-126.5	1.65	8.1		↓
1113	110.07	475	2.30	21.27	7.22	0.954	-124.3	1.65	22		↓
1122	110.08	575	2.77	21.28	7.20	0.954	-121.9	1.65	12		Q = 11 gpm
1127	110.07	625	3.0	21.28	7.22	0.953	-126.7	1.64	3.5		↓
1131	—	673	3.2			Pump off					

SAMPLE COLLECTION SAMPLE TIME <u>1130</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	<u>3</u> 40 ml VOA
8270 SIM 1,4 dioxane	<u>1</u> 1 L Amber
8270 MOD 1,4 dioxane	<u>1</u> 1 L Amber
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>	
If yes, complete appropriate forms.	

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

Super odor



GROUNDWATER SAMPLING INFORMATION

DATE: 8 / 13 / 2013

TASK: 532.30

WELL ID: MW-32B

Time <u>1522</u> Static DTW (ft below reference point)	<u>106.58</u>	~~Screen~~ Gasing Volume (CV) (gallons) <u>263.5</u> ~~3~~ CV (gallons) <u>790.2</u>	<u>Weather Conditions</u>	<u>Initials</u> ~~AMB & DM~~ <u>EDH + SLK</u>
Casing Total Depth (ft below reference point)	<u>999</u>	Purging Device <u>ded pump</u> Sampling Device <u>>100</u> ~~Des. pipe~~ <u>stand</u>	Time <u>1621</u> Temp. <u>80</u>	Begin Purge <u>1535</u> End Purge <u>1705</u>
~~pump to screen~~ Water Column (feet)	<u>439</u>	Pump: Depth (ft brp) <u>560</u> Type <u>grind</u> ~~dis~~ Voltage <u>240</u> HP	Skies <u>sunny</u>	Gallons Purged <u>802</u> CVs Purged <u>3.0</u> ~~802~~
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>x</u>	Wind (mph) <u>2</u> From <u>SW</u>	DTW (ft brp) <u>109.45</u> Time <u>1705</u>

[illegible]

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

GROUNDWATER SAMPLING INFORMATION

DATE: 8/13/2013

TASK: 532.30

WELL ID: MW-32C

Time <u>1252</u> Static DTW (ft below reference point)	<u>84.92</u> Screen <u>5</u> Casing Volume (gallons) <u>318</u> <u>5</u> 30V (gallons) <u>954</u>	Weather Conditions	Initials <u>AMB & DM</u> <u>EJH/SLK</u>
Casing Total Depth (ft below reference point)	<u>1090</u>	Purging Device <u>ded pump</u> Sampling Device <u>ND Pipe stand</u>	Time <u>1300</u> Temp. <u>85</u>
Screen 2 bottom of screen Water Column (feet)	<u>530</u>	Pump: Depth (ft brp) <u>530</u> Type <u>grindits</u> Voltage <u>240</u> HP	Skies <u>sunny</u>
Casing Capacity (Diameter <u>4</u> " (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) <u>0</u> From <u>0</u>
			Begin Purge <u>1258</u> End Purge <u>1532</u>
			Gallons Purged <u>1081</u> CVs Purged <u>23</u>
			DTW (ft brp) <u>148.40</u> Time <u>1536</u>

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)		
1258	84.92	0	0								
1304	127.45	42	0.13	21.12	7.79	0.557	-239.7	5.26	0.40		Q = 8.5 gpm
1322	176.50	200	0.63	21.31	7.59	0.555	-234.5	0.33	0.00		Q = 7.0 gpm
1339	183.92	318	1.0	21.57	7.62	0.553	-209.2	0.27	0.00		Q = 7 gpm
1401	188.60	462	1.45	21.75	7.59	0.553	-196.7	0.20	1.6		
1423	196.05	614	1.93	21.75	7.62	0.553	-202.7	0.15	1.6		Q = 7 gpm
1445	199.28	760	2.40	21.79	7.64	0.553	-196.9	0.12	0.25		Q = 6.8 gpm
1509	200.92	924	2.90	21.81	7.69	0.553	-193.7	0.10	0.00		
1530	202.52	1068	3.35	21.81	7.64	0.553	-196.6	0.09	0.00		
1532	202.52	1081	3.40								

SAMPLE COLLECTION	SAMPLE TIME	1535
ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA
8270 SIM 1,4 dioxane	1	1 L Amber
8270-MQD 1,4 dioxane	1	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.)				
pulled transducer @ 1253				
replaced @ 1541				

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14/2013

TASK: 532.30

WELL ID: MW-33

Time 1309 Static DTW (ft below reference point)	104.21	Casing Volume (CV) (gallons) 291 3 CV (gallons) 873	Weather Conditions	Initials AMB & DM ECH + SCL
Casing Total Depth (ft below reference point)	1020	Purging Device dead pump Sampling Device 0.25 pipe stone	Time 1312 Temp. 80	Begin Purge 1320 End Purge 1442
Pump to bottom of screen Water Column (feet)	485	Pump: Depth (ft brp) 535 Type ground Voltage 240 HP	Skies sunny	Gallons Purged 899 CVs Purged >3
Casing Capacity (Diameter 4") (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) NW From NW	DTW (ft brp) 104.31 Time

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)		
1316	104.21	0	0	—	—	Pump on		—	—		
1320	105.39	42	0.14	20.01	7.64	0.7	-105.8	0.97	1.9		Q=10 gpm
1334	105.43	180	0.62	20.79	7.67	0.74	-17.7	0.88	0.6		Q=10 gpm
1348	105.42	332	1.14	21.02	7.63	0.756	-14.3	0.26	0		Q=10.8 gpm
1402	105.43	480	1.65	21.05	7.61	0.756	-18.9	1.37	0		Q=10.6 gpm
1416	105.40	643	2.20	21.05	7.61	0.757	-20.4	1.33	0.45		Q=11.6 gpm
1430	105.40	787	2.70	21.09	7.61	0.756	-21.8	2.23	2.4		Q=10.2 gpm
1440	105.44	894	3.07	21.08	7.61	0.757	-23.9	1.80	0.0		Q=10.7 gpm
1442	NM	899	—	—	—	Pump off		—	—		

SAMPLE COLLECTION SAMPLE TIME	1440
ANALYSIS	QUANTITY
8260B VOCs	?
8270 SIM 1,4 dioxane	1
8270-MQB 1,4 dioxane	1
40 ml VOA	
1 L Amber	
1 L Amber	
DUPLICATES / SPLITS / BLANKS?	Y
If yes, complete appropriate forms.	(NM)

AIR MONITORING PID/TID 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: 8/12/13

TASK: 532.30

WELL ID: MW-34A

Time 14:15 Static DTW (ft below reference point) 156.28	Casing Volume (CV) (gallons) 40 3 CV (gallons) 137	Weather Conditions	Initials: AMS & DM + ASE
Casing Total Depth (ft below reference point) 280	Purging Device DED. PUMP Sampling Device DED. PUMP	Time 14:16 Temp. 81.7	Begin Purge 14:15 End Purge 14:30
Water Column (feet) 80	Pump: Depth (ft brp) 200 Type GROUNDWATER Voltage 240 HP	Skies Sunny	Gallons Purged 170 CVs Purged 3.83
Casing Capacity (Diameter 4") (gallons per foot) 400.0	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) 0-5 From W	DTW (ft brp) 156.34 Time 14:31

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)		
14:15	156.28	0	0	PUMP TURNED ON							
14:16	158.20	11.0	0.24	21.30	7.17	1354	-104.3	4.17	12.4		FLOWRATE ≈ 11 GPM
14:18	158.20	40.0	0.87	21.42	7.29	1531	-95.1	3.54	60.8		FLOWRATE ≈ 14.5 GPM
14:20	NM	66.7	1.45	21.45	7.20	1533	-67.7	3.60	70.8		FLOWRATE ≈ 13.4 GPM
14:22	158.22	90.4	1.97	21.45	7.24	1524	-54.6	3.57	43.0		FLOWRATE ≈ 11.9 GPM
14:24	158.22	112.3	2.44	21.46	7.26	1528	-49.8	3.56	38.3		FLOWRATE ≈ 11 GPM
14:26	NM	137.0	2.98	21.46	7.29	1530	-53.5	3.57	22.2		FLOWRATE ≈ 12.4 GPM
14:30		170.3	3.83	PUMP TURNED OFF							Reduced Flow Rate for Sampling

SAMPLE COLLECTION SAMPLE TIME 14:30		
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	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: 8/13/13 TASK: 532.30 WELL ID: MW-34B

Time 15:39 Static DTW (ft below reference point) 1105.00 Casing Volume (CV) (gallons) 410 3 CV (gallons) 137

Casing Total Depth (ft below reference point) 534 Purging Device DED PUMP Sampling Device DED PIPE

Water Column (feet) 76 Pump: Depth (ft brp) 400 Type Grundfos Voltage 240 HP

Casing Capacity (Diameter 4") (gallons per foot) 0.6 Monitor Well Recharge Rate: Slow Fast X

Weather Conditions
Time 15:30 Temp. 84°F
Skies SUNNY
Wind (mph) 0-5 From W

Initials AMB & DM
Begin Purge 15:45 End Purge 15:59
Gallons Purged 150 CVs Purged 3.24
DTW (ft brp) 1105.32 Time 110:04

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)		
15:45	NM	0	0	PUMP TURNED ON							
15:46	100.77	20.0	0.43	21.23	7.55	1.122	32.6	390	71.8		FLOWRATE ≈ 20 GPM
15:48	100.88	40.0	1.0	21.75	7.42	1.159	-111.0	440	50.1		FLOWRATE ≈ 13 GPM
15:50	100.94	69.0	1.5	21.82	7.43	1.103	-94.6	477	145		FLOWRATE ≈ 11.5 GPM
15:52	100.98	92.0	2.0	21.84	7.44	1.159	-89.0	478	53.8		FLOWRATE ≈ 11.5 GPM
15:54	107.02	115.0	2.5	21.84	7.43	1.158	-71.0	482	38.0		FLOWRATE ≈ 11.5 GPM
15:55	107.00	137.0	3.0	21.84	7.43	1.160	-66.4	483			Reduced Flow Rate for Sampling
15:59	NM	150.0	3.26	PUMP TURNED OFF							

SAMPLE COLLECTION SAMPLE TIME 15:55

ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA

8270 SIM 1,4 dioxane 0 1 L Amber

8270 MOD 1,4 dioxane 1 1 L Amber

DUPLICATES / SPLITS / BLANKS? Y N

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

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

BAD ODO2

GROUNDWATER SAMPLING INFORMATION

DATE: 8/13/13

TASK: 532.30

WELL ID: MW-34C

Time <u>13:24</u> Static DTW (ft below reference point) <u>103.40</u>	<u>SCREEN</u> Casing Volume (CV) (gallons) <u>57.7</u> <u>3 CV</u> (gallons) <u>173</u>	Weather Conditions Time <u>13:24</u> Temp. <u>82°F</u>	Initials <u>AMB & DM</u>
Casing Total Depth (ft below reference point) <u>576</u>	Purging Device <u>DED. PUMP</u> Sampling Device <u>DED. PIPE</u>	Skies <u>Sunny</u>	Begin Purge <u>14:00</u> End Purge <u>14:01</u>
Water Column (feet) <u>96</u>	Pump: Depth (ft brp) <u>480</u> Type <u>GRINDROD</u> Voltage <u>240</u> HP	Wind (mph) <u>0-5</u> From <u>W</u>	Gallons Purged <u>172.193</u> CVs Purged <u>3.41</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.00</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	DTW (ft brp) <u>104.09</u> Time <u>14:09</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)		
13:45	174.70	0	0	PUMP STARTED							~12 GPM = FLOWRATE
13:46	178.73	21.2	0.37	21.33	7.89	0.034	-170.9	1.25	0		~12 GPM = FLOWRATE
13:49	180.43	57.7	1.0	21.85	7.94	0.557	-177.0	0.70	3.29		~12 GPM = FLOWRATE
13:51	180.77	85.7	1.5	21.90	7.99	0.547	-142.7	0.49	0		FLOWRATE ≈ 14 GPM
13:54	181.40	113.7	2.0	21.99	7.98	0.544	-121.4	0.46	0		FLOWRATE ≈ 9.3 GPM
13:56	181.42	142.5	2.47	22.00	7.95	0.546	-128.7	0.45	0		FLOWRATE ≈ 14 GPM
13:58	181.80	173	2.9	22.00	7.90	0.545	-107.8	0.44	0		FLOWRATE ≈ 15 GPM
14:01	NM	197	3.41	PUMP TURNED OFF							

SAMPLE COLLECTION SAMPLE TIME <u>14:00</u>			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	<u>3</u>	40 ml VOA	<u>Transducer removed @ 13:25</u> <u>Replace Transducer @ 14:02</u>			
8270-SIM 1,4-dioxane	<u>1</u>	1 L Amber				
8270-MOD 1,4-dioxane	<u>1</u>	1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>N</u> If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14 / 2013

TASK: 532.30

WELL ID: MW-35C

Time <u>0840</u> Static DTW (ft below reference point) <u>108.37</u>	Casing Volume (CV) (gallons) <u>348</u> 3 CV (gallons) <u>1044</u>	Weather Conditions	Initials <u>AMB & DM</u> <u>ETH & SK</u>
Casing Total Depth (ft below reference point) <u>990</u>	Purging Device <u>del. pump</u> Sampling Device <u>NDAPR SKIN</u>	Time <u>0856</u> Temp. <u>70</u>	Begin Purge <u>0852</u> End Purge <u>1026</u>
Pump screen to bottom of screen Water Column (feet) <u>580</u>	Pump: Depth (ft brp) <u>410</u> Type <u>ground</u> Voltage <u>240</u> HP	Skies <u>Sunny</u>	Gallons Purged <u>1098</u> CVs Purged <u>3.1</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow Fast <u><</u>	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft brp) <u>108.43</u> Time <u>1030</u>

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)		
0852	108.37	0	0	—	Pump on						
0857	110.43	56	0.16	20.38 7.20	7.20	1.038	57.6	2.00	0		Q = 12 gpm
0912	110.45	228	0.65	20.57	7.42	1.019	31.4	1.85	25		
0927	110.41	469	1.17	20.67	7.54	0.816	28.6	NM	140		Q = 12 gpm
0942	110.43	585	1.68	20.73	7.55	0.815	30.1	3.65	110		Q = 11.7 gpm
0957	110.40	775	2.22	20.74	7.55	0.817	30.4	3.58	30		
1012	110.41	940	2.70	20.77	7.53	0.817	28.1	3.55	9.1		Q = 11 gpm
1022	110.48	1052	3.0	20.78	7.53	0.817	29.6	3.52	5.7		
1026	NW	1098	3.1	—	Pump off						

SAMPLE COLLECTION SAMPLE TIME 1025

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

DUPLICATES / SPLITS / BLANKS? Y (N)

If yes, complete appropriate forms.

AIR MONITORING PID/FID perm: 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: 8/15/2013

TASK: 532.30

WELL ID: MW-36

Time 0927 Static DTW (ft below reference point) 109.22	Screen SV	Casing Volume (CV) (gallons) 320.4	3 CV (gallons) 961.2	Weather Conditions	Initials AMB & DM EJH + ASF
Casing Total Depth (ft below reference point) 994.3	Purging Device Ded. pump	Sampling Device 10-100 Ded. pipe stand	Time 11:15 Temp. 72°F	Begin Purge 9:37	End Purge 11:09
Screen to Pump Water Column (feet) 885.08	Pump: Depth (ft brp) 400	Type Grundfos	Voltage 240 HP	Skies Sunny	Gallons Purged 998
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0-5	From W	CVs Purged 3.11
					DTW (ft brp) 109.05
					Time 11:10

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)		
9:37	109.22	0	0	TURN	PUMP ON	BEGIN PUMPING					FLOWRATE ≈ 10 GPM
9:40	111.27	42	0.13	20.03	7.49	0.700	-21.1	1.13	24		FLOWRATE ≈ 10 GPM
9:55	111.51	193	0.60	21.30	7.77	0.716	-20.7	0.91	0		FLOWRATE ≈ 10 GPM
10:10	111.03	302	1.13	21.85	7.72	0.803	-23.2	1.00	3.7		FLOWRATE ≈ 11 GPM
10:24	111.05	515	1.61	21.90	7.69	0.896	-21.5	0.98	3.3		FLOWRATE ≈ 11 GPM
10:39	111.08	688	2.15	21.84	7.70	0.900	-22.7	1.04	0.35		FLOWRATE ≈ 11.5 GPM
10:53	111.08	832	2.60	21.94	7.67	0.902	-22.5	1.12	0		FLOWRATE ≈ 10 GPM
11:08	111.71	985	3.07	21.96	7.68	0.902	-23.0	0.63	0		FLOWRATE ≈ 10.2 GPM
11:09	NM	998	3.11								Pump off

SAMPLE COLLECTION SAMPLE TIME 1105	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 239 40 ml VOA	DUPLICATE: 1045			
8270 SIM 1,4 dioxane 1 L Amber	SPLIT: 1105			
8270 MOD 1,4 dioxane 1 L Amber	BAD ODOR			
DUPLICATES / SPLITS / BLANKS? Y N				

GROUNDWATER SAMPLING INFORMATION

DATE: 8/14 / 2013

TASK: 532.30

WELL ID: MW-37

Time 1103 Static DTW (ft below reference point)	149.81	Screen Casing Volume (CV) (gallons) 180	3 CV (gallons) 540	Weather Conditions	Initials AMB & DM ETH & SLK
Casing Total Depth (ft below reference point)	820	Purging Device ded pump	Sampling Device NA Pipe-stem	Time 1105 Temp. 84	Begin Purge 1107 End Purge 1152
Pump to b. of screen Water Column (feet)	300	Pump: Depth (ft brp) 520	Type ga. mds Voltage 240 HP	Skies sunny	Gallons Purged 577 CVs Purged 3.2
Casing Capacity (Diameter 4") (gallons per foot)	0.65	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0 From 0	DTW (ft brp) 150.02 Time 1153

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)		
1107	149.81	0	0								Q=12gpm
1110	153.04	44	0.24	22.48	7.95	0.590	-169.0	1.17	200		Q=14gpm
1116	153.06	128	0.71	22.75	8.01	0.509	-151.2	0.70	4.5		Q=14gpm
1122	153.10	208	1.15	22.95	8.08	0.453	-61.8	0.63	0.80		
1128	153.10	270	1.50	22.96	8.07	0.454	-46.3	0.60	120		
1135	153.10	366	2.0	22.97	8.07	0.455	-37.7	0.57	75		Q=13.7gpm
1142	153.05	456	2.5	22.99	8.05	0.455	-32.6	0.55	21		
1149	153.12	542	3.0	23.00	8.06	0.456	-30.7	0.54	16		
1152	NM	577	3.2								

SAMPLE COLLECTION SAMPLE TIME 1150	ANALYSIS QUANTITY TYPE
8260B VOCs 3 40 ml VOA	
8270 SIM 1,4 dioxane 1 1 L Amber	
8270 MOD 4,4-dioxane 1 1 L Amber	
DUPLICATES / SPLITS / BLANKS? Y	(N)

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

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

GROUNDWATER SAMPLING INFORMATION

DATE: 8/7/2013

TASK: 532.30

WELL ID: MW-38

Time <u>1457</u> Static DTW (ft below reference point) <u>156.80</u>	Casing Volume (CV) (gallons) <u>25.9</u> 3 CV (gallons) <u>77.80</u>	Weather Conditions	Initials <u>AMB & DM</u> <u>EJH</u>
Casing Total Depth (ft below reference point) <u>200</u>	Purging Device <u>ded. pump</u> Sampling Device <u>ded. sample port</u>	Time <u>1500</u> Temp. <u>77</u>	Begin Purge <u>1558</u> End Purge <u>1600</u>
Water Column (feet) <u>43.20</u>	Pump: Depth (ft brp) <u>190</u> Type <u>Grundfos</u> Voltage <u>240</u> HP	Skies <u>sunny</u>	Gallons Purged <u>80</u> CVs Purged <u>3.1</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>2</u> From <u>SW</u>	DTW (ft brp) <u>156.81</u> Time <u>1635</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)		
<u>1608</u>	<u>156.80</u>	<u>0</u>	<u>0</u>	<u>—</u>	<u>Pump</u>	<u>on</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>240</u>	
<u>1600</u>	<u>157.06</u>	<u>8</u>	<u>0.30</u>	<u>23.27</u>	<u>7.29</u>	<u>1370</u>	<u>66.0</u>	<u>2.66</u>	<u>48.9</u>		<u>Q=4 gpm</u>
<u>1603</u>	<u>157.12</u>	<u>20</u>	<u>0.80</u>	<u>22.17</u>	<u>7.29</u>	<u>1336</u>	<u>70.8</u>	<u>1.00</u>	<u>28.0</u>		<u>Q=4 gpm</u>
<u>1606</u>	<u>157.18</u>	<u>32</u>	<u>1.20</u>	<u>21.96</u>	<u>7.27</u>	<u>1321</u>	<u>75.0</u>	<u>0.73</u>	<u>25.2</u>		<u>↓</u>
<u>1609</u>	<u>157.20</u>	<u>44</u>	<u>1.75</u>	<u>21.95</u>	<u>7.26</u>	<u>1318</u>	<u>75.9</u>	<u>0.68</u>	<u>8.98</u>		<u>Q=4 gpm</u>
<u>1612</u>	<u>157.23</u>	<u>56</u>	<u>2.15</u>	<u>21.90</u>	<u>7.27</u>	<u>1319</u>	<u>77.1</u>	<u>0.83</u>	<u>13.6</u>		<u>↓</u>
<u>1615</u>	<u>157.22</u>	<u>68</u>	<u>2.60</u>	<u>21.89</u>	<u>7.26</u>	<u>1318</u>	<u>75.1</u>	<u>0.75</u>	<u>17.0</u>		<u>↓</u>
<u>1618</u>	<u>157.22</u>	<u>80</u>	<u>3.10</u>	<u>21.88</u>	<u>7.27</u>	<u>1317</u>	<u>74.3</u>	<u>0.82</u>	<u>4.50</u>	<u>↓</u>	<u>↓</u>
<u>1622</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>Pump off</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>		

SAMPLE COLLECTION SAMPLE TIME <u>1620</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>9</u> 40 ml VOA	
8270 SIM 1,4 dioxane <u>2</u> 1 L Amber	
8270 MOD 1,4 dioxane <u>1</u> 1 L Amber	
DUPLICATES / SPLITS / BLANKS? <u>(Y)</u> N	<u>SPT c MW-38 @</u> <u>DUPs MW-3800 @ 1600</u>

GROUNDWATER SAMPLING INFORMATION

DATE: 8/16/2017

TASK: 532.30

WELL ID: MW-38

Time <u>1017</u> Static DTW (ft below reference point) <u>158.18</u>	Casing Volume (CV) (gallons) <u>25.1</u> 3 CV (gallons) <u>75.3</u>	Weather Conditions	Initials <u>AMS DM</u>
Casing Total Depth (ft below reference point) <u>200</u>	Purging Device <u>DED Pump</u> Sampling Device <u>DED Pipe</u>	Time <u>NM</u> Temp. <u>NM</u>	Begin Purge <u>1021</u> End Purge <u>1044</u>
Water Column (feet) <u>41.8</u>	Pump: Depth (ft brp) <u>140</u> Type <u>Gump</u> Voltage <u>240</u> HP	Skies <u>NM</u>	Gallons Purged <u>85</u> CVs Purged <u>3.31</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>16</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>NM</u> From <u>NM</u>	DTW (ft brp) <u>NM</u> Time <u>NM</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	Temp. (°)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)	Pump Frequency Hz	COMMENTS
1021	START	0	0								
1022	158.58	12	.5	21.91	7.36	1.414	-19.3	3.64	63.1		
1027	158.58	26	1	21.97	7.30	1.398	-16.5	1.02	21.6		
1030	158.59	38	1.5	21.98	7.33	1.392	-17.5	.78	16.4		
1034	158.59	51	2	21.97	7.37	1.389	-19.5	0.65	5.8		
1037	158.59	63	2.5	21.96	7.36	1.384	-18.6	0.57	2		
1041	158.62	76	3	21.96	7.39	1.379	-19.4	0.52	2.1		
1042	SAMPLE										
1044	END										

SAMPLE COLLECTION SAMPLE TIME <u>1042</u>		AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA	
ANALYSIS	QUANTITY	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)	
8260B VOCs	<u>3</u>	<u>REDUCE FLOW FOR SAMPLE 2 1042</u>	
8270 SIM 1,4 dioxane	<u>1</u>		
8270 MOD 1,4 dioxane	<u>1</u>		
40 ml VOA 1 L Amber 1 L Amber			
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u> If yes, complete appropriate forms.			

GROUNDWATER SAMPLING INFORMATION

DATE: 108 108/2013

TASK: 532.30

WELL ID: MW-39

Time 0840 Static DTW (ft below reference point)	106.13	Screen Volumes (SV) Casing Volume (CV) (gallons) 271.2 SV (gallons) 813.6	Weather Conditions Time 1015 Temp. 68°	Initials AMB & DM
Casing Total Depth (ft below reference point)	1,012	Purging Device ded. pump Sampling Device ded. sample	Skies Partly Cloudy/Sunny	Begin Purge 0906 End Purge 1030
Screen Volume To Pump Volume of Water Column (feet)	452	Pump: Depth (ft brp) 560 Type granthos Voltage 240 HP	Wind (mph) 0-3 From W	Gallons Purged 850 CVs Purged 3.2
Casing Capacity (Diameter (") (gallons per foot)	0.600	Monitor Well Recharge Rate: Slow Fast X		DTW (ft brp) 106.52 Time 1035

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)		
0906 SLK	106.13	0	0	—	—	Pump	ON	—	—	N/A	Dedicated Pump/ Full OPEU
0910	116.03	35.0	0.13	21.79	8.86	0.446	50.6	5.55	0.0	N/A	~ 9.0 gal/min
		135	0.5	21.79	8.86	0.446	50.6	5.55	0.0	N/A	SLK
0919	116.35	135	0.5	22.30	8.82	0.441	159.4	6.82	0.3	N/A	~ 11.0 gal/min
0931	116.42	270	1.0	22.78	9.76	0.493	15.0	5.11	1.6	N/A	~ 11.0 gal/min
0945	116.96	405	1.5	22.80	9.28	0.452	12.0	5.29	0.0	N/A	~ 10.0 gal/min
0959	116.86	540	2.0	22.96	9.10	0.448	9.5	4.07	0.0	N/A	~ 10.0 gal/min
1012	117.45	675	2.5	22.86	9.03	0.446	-5.1	7.30	0.0	N/A	~ 10.5 gal/min
1025	117.02	810	3.0	22.86	8.97	0.442	25.1	5.17	0.0	N/A	
1026											Flow Decreased ~ 1.0 gal/min

SAMPLE COLLECTION SAMPLE TIME 1028			AIR MONITORING PID/EID 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 w/ HCL	OR6: MW-39 @ 1028			
8270 SIM 1,4 dioxane	3	1 L Amber	DUP: MW-39 @ 1038			
8270 MOD 1,4 dioxane		1 L Amber	SPUT: MW-39 @ 1028			
DUPLICATES (SPLITS) BLANKS? (Y) N If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 8/10/2013

107.49 (RSP) (RSP)

TASK: 532.30

WELL ID: MW-39

Time 8:38 Static DTW (ft below reference point)	107.49 (RSP) (RSP)	Casing Volume (CV) (gallons) 271.2	3 CV (gallons) 813.6	Weather Conditions	Initials AMB & DM RSP/EJH
Casing Total Depth (ft below reference point)	1080	Purging Device ded pump	Sampling Device ND ded sample port	Time 8:41 Temp 72°F	Begin Purge 8:42 End Purge 9:41
Water Column (feet) (RSP)	452	Pump: Depth (ft brp) 500	Type quartz Voltage 240 HP	Skies Sunny	Gallons Purged 844 CVs Purged 3.11
Casing Capacity (Diameter 4") (gallons per foot)	0.40	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0 From N/A	DTW (ft brp) 110.10 Time 9:41

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)		
8:42	107.49	0	0	BEGIN PURGE							
8:45	110.92	40	0.15	21.19	8.20	0.404	533	0.59	20		FLOWRATE ≈ 13.3 GPM
8:58	117.38	225	0.83	22.51	8.74	0.465	-191.1	0.13	19		FLOWRATE ≈ 14.2 GPM
9:08	117.47	306	1.35	22.91	9.59	0.492	-214.3	0.10	5.1		FLOWRATE ≈ 14.1 GPM
9:18	117.58	523	1.93	22.93	9.13	0.470	-211.1	0.08	0		FLOWRATE ≈ 15.7 GPM
9:28	117.69	658	2.43	22.95	8.99	0.467	-213.6	0.08	0		FLOWRATE ≈ 13.5 GPM
9:38	117.75	818.9	3.02	22.94	8.90	0.460	-212.9	0.07	0		FLOWRATE ≈ 16 GPM
9:41	110.10	844	3.11	END PURGE							

SAMPLE COLLECTION SAMPLE TIME 9:40			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	3	40 ml VOA				
8270 SIM 1,4 dioxane	1	1 L Amber				
8270 MOD 1,4 dioxane	0	1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u> If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 8/16 / 2013

TASK: 532.30

WELL ID: MW-40

Time <u>826</u> Static DTW (ft below reference point)	<u>130.08</u> SCREEN Casing Volume (CV) (gallons)	<u>75</u> SCREEN VOLUME 3 CV (gallons)	Weather Conditions	Initials <u>AMB & DM</u>
Casing Total Depth (ft below reference point)	<u>970</u>	Purging Device <u>DED Pump</u>	Time <u>852</u> Temp. <u>75</u>	Begin Purge <u>848</u> End Purge <u>9:12</u>
Water Column (feet)	<u>839.9</u>	Pump: Depth (ft brp) <u>920</u> Type <u>EMERSON</u> Voltage <u>240</u> HP	Skies <u>Wazy / Humid</u>	Gallons Purged <u>244</u> CVs Purged <u>3.25</u>
Casing Capacity (Diameter <u>6"</u>) (gallons per foot)	<u>1.5</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0-2</u> From <u>N</u>	DTW (ft brp) <u>130.20</u> Time <u>920</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
848										N/A	
851	<u>131.08</u>	<u>38</u>	<u>.5</u>	<u>21.24</u>	<u>7.74</u>	<u>.790</u>	<u>-40.2</u>	<u>1.02</u>	<u>4.9</u>		
854	<u>131.07</u>	<u>75</u>	<u>1</u>	<u>21.41</u>	<u>8.01</u>	<u>.721</u>	<u>-54.5</u>	<u>.90</u>	<u>2.5</u>		
858	<u>131.03</u>	<u>113</u>	<u>1.5</u>	<u>21.38</u>	<u>7.92</u>	<u>.761</u>	<u>-49.9</u>	<u>.97</u>	<u>1.7</u>		
902	<u>131.07</u>	<u>151</u>	<u>2</u>	<u>21.41</u>	<u>7.85</u>	<u>.773</u>	<u>-45.7</u>	<u>1.00</u>	<u>0.5</u>		
905	<u>131.09</u>	<u>189</u>	<u>2.5</u>	<u>21.42</u>	<u>7.81</u>	<u>.776</u>	<u>-43.4</u>	<u>.98</u>	<u>0.9</u>		
909	<u>131.14</u>	<u>226</u>	<u>3</u>	<u>21.42</u>	<u>7.78</u>	<u>.781</u>	<u>-42.4</u>	<u>.97</u>	<u>1.2</u>		
910											
912											

SAMPLE COLLECTION SAMPLE TIME 910

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		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.)

DED. CONTROL BOX AT 764 SHED.

REDUCE FLOW FOR SAMPLE 8910

APPENDIX B

LABORATORY ANALYTICAL REPORTS

MONITOR WELLS MW-38, MW-39, AND MW-40 INITIAL GROUNDWATER SAMPLING RESULTS

August 15, 2013

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
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1302351
Client Reference : RAYTHEON-MAIN, 532.30

Enclosed are the results for sample(s) received on August 08, 2013 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,



Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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 : 08/15/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-080713A	1302351-01	Lab H2O	8/07/13 14:00	8/08/13 13:40
MW-3800	1302351-02	Groundwater	8/07/13 16:00	8/08/13 13:40
MW-38	1302351-03	Groundwater	8/07/13 16:20	8/08/13 13:40
TB-080813A	1302351-04	Lab H2O	8/08/13 10:00	8/08/13 13:40
MW-3900	1302351-05	Groundwater	8/08/13 10:38	8/08/13 13:40
MW-39	1302351-06	Groundwater	8/08/13 10:28	8/08/13 13:40



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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 : 08/15/2013

Client Sample ID TB-080713A

Lab ID: 1302351-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
2-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
4-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Benzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Bromobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Bromodichloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Bromoform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Bromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Carbon tetrachloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Chlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Chloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Chloroform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Chloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Dibromochloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	



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 : 08/15/2013

Client Sample ID TB-080713A

Lab ID: 1302351-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Ethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Isopropylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
m,p-Xylene	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Methylene chloride	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
n-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
n-Propylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Naphthalene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
o-Xylene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
sec-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Styrene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
tert-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Tetrachloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Toluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Trichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Vinyl chloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:21	
Surrogate: 1,2-Dichloroethane-d4	86.0 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:21	
Surrogate: 4-Bromofluorobenzene	101 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:21	
Surrogate: Dibromofluoromethane	83.7 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:21	
Surrogate: Toluene-d8	76.3 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:21	



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 : 08/15/2013

Client Sample ID MW-3800

Lab ID: 1302351-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
2-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
4-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Benzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Bromobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Bromodichloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Bromoform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Bromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Carbon tetrachloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Chlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Chloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Chloroform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Chloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Dibromochloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	



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 : 08/15/2013

Client Sample ID MW-3800

Lab ID: 1302351-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Ethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Isopropylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
m,p-Xylene	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Methylene chloride	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
n-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
n-Propylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Naphthalene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
o-Xylene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
sec-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Styrene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
tert-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Tetrachloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Toluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Trichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Vinyl chloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 17:46	
Surrogate: 1,2-Dichloroethane-d4	86.8 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:46	
Surrogate: 4-Bromofluorobenzene	96.1 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:46	
Surrogate: Dibromofluoromethane	83.4 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:46	
Surrogate: Toluene-d8	76.9 %		70 - 130		B3H0148	08/08/2013	08/08/13 17:46	



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 : 08/15/2013

Client Sample ID MW-3800

Lab ID: 1302351-02

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0162	08/08/2013	08/08/13 19:35	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>73.1 %</i>		<i>47 - 117</i>		B3H0162	08/08/2013	<i>08/08/13 19:35</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>81.5 %</i>		<i>48 - 121</i>		B3H0162	08/08/2013	<i>08/08/13 19:35</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>96.8 %</i>		<i>58 - 142</i>		B3H0162	08/08/2013	<i>08/08/13 19:35</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>78.2 %</i>		<i>27 - 151</i>		B3H0162	08/08/2013	<i>08/08/13 19:35</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 : 08/15/2013

Client Sample ID MW-38

Lab ID: 1302351-03

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
2-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
4-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Benzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Bromobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Bromodichloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Bromoform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Bromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Carbon tetrachloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Chlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Chloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Chloroform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Chloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Dibromochloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 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 : 08/15/2013

Client Sample ID MW-38

Lab ID: 1302351-03

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Ethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Isopropylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
m,p-Xylene	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Methylene chloride	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
n-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
n-Propylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Naphthalene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
o-Xylene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
sec-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Styrene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
tert-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Tetrachloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Toluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Trichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Vinyl chloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:18	
Surrogate: 1,2-Dichloroethane-d4	87.0 %		70 - 130		B3H0148	08/08/2013	08/08/13 15:18	
Surrogate: 4-Bromofluorobenzene	97.6 %		70 - 130		B3H0148	08/08/2013	08/08/13 15:18	
Surrogate: Dibromofluoromethane	81.8 %		70 - 130		B3H0148	08/08/2013	08/08/13 15:18	
Surrogate: Toluene-d8	77.4 %		70 - 130		B3H0148	08/08/2013	08/08/13 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 : 08/15/2013

Client Sample ID MW-38

Lab ID: 1302351-03

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0162	08/08/2013	08/08/13 17:23	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>69.9 %</i>		<i>47 - 117</i>		B3H0162	08/08/2013	<i>08/08/13 17:23</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>76.5 %</i>		<i>48 - 121</i>		B3H0162	08/08/2013	<i>08/08/13 17:23</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.3 %</i>		<i>58 - 142</i>		B3H0162	08/08/2013	<i>08/08/13 17:23</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>75.4 %</i>		<i>27 - 151</i>		B3H0162	08/08/2013	<i>08/08/13 17:23</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 : 08/15/2013

Client Sample ID TB-080813A

Lab ID: 1302351-04

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
2-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
4-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Benzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Bromobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Bromodichloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Bromoform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Bromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Carbon tetrachloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Chlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Chloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Chloroform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Chloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Dibromochloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	



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 : 08/15/2013

Client Sample ID TB-080813A

Lab ID: 1302351-04

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Ethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Isopropylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
m,p-Xylene	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Methylene chloride	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
n-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
n-Propylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Naphthalene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
o-Xylene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
sec-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Styrene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
tert-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Tetrachloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Toluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Trichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Vinyl chloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:10	
Surrogate: 1,2-Dichloroethane-d4	88.3 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:10	
Surrogate: 4-Bromofluorobenzene	97.9 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:10	
Surrogate: Dibromofluoromethane	82.8 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:10	
Surrogate: Toluene-d8	77.0 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:10	



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 : 08/15/2013

Client Sample ID MW-3900

Lab ID: 1302351-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
2-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
4-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Benzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Bromobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Bromodichloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Bromoform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Bromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Carbon tetrachloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Chlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Chloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Chloroform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Chloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Dibromochloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	



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 : 08/15/2013

Client Sample ID MW-3900

Lab ID: 1302351-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Ethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Isopropylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
m,p-Xylene	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Methylene chloride	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
n-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
n-Propylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Naphthalene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
o-Xylene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
sec-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Styrene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
tert-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Tetrachloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Toluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Trichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Vinyl chloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 18:34	
Surrogate: 1,2-Dichloroethane-d4	87.4 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:34	
Surrogate: 4-Bromofluorobenzene	97.2 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:34	
Surrogate: Dibromofluoromethane	83.3 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:34	
Surrogate: Toluene-d8	73.6 %		70 - 130		B3H0148	08/08/2013	08/08/13 18:34	



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 : 08/15/2013

Client Sample ID MW-3900

Lab ID: 1302351-05

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0162	08/08/2013	08/08/13 20:02	
Surrogate: 1,2-Dichlorobenzene-d4	82.2 %		47 - 117		B3H0162	08/08/2013	08/08/13 20:02	
Surrogate: 2-Fluorobiphenyl	96.0 %		48 - 121		B3H0162	08/08/2013	08/08/13 20:02	
Surrogate: 4-Terphenyl-d14	103 %		58 - 142		B3H0162	08/08/2013	08/08/13 20:02	
Surrogate: Nitrobenzene-d5	86.1 %		27 - 151		B3H0162	08/08/2013	08/08/13 20:02	



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 : 08/15/2013

Client Sample ID MW-39

Lab ID: 1302351-06

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
2-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
4-Chlorotoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Benzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Bromobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Bromodichloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Bromoform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Bromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Carbon tetrachloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Chlorobenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Chloroethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Chloroform	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Chloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Dibromochloromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	



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 : 08/15/2013

Client Sample ID MW-39

Lab ID: 1302351-06

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Ethylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Isopropylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
m,p-Xylene	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Methylene chloride	ND	1.0	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
n-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
n-Propylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Naphthalene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
o-Xylene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
sec-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Styrene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
tert-Butylbenzene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Tetrachloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Toluene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Trichloroethene	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Vinyl chloride	ND	0.50	NA	1	B3H0148	08/08/2013	08/08/13 15:42	
Surrogate: 1,2-Dichloroethane-d4	87.2 %		70 - 130		B3H0148	08/08/2013	08/08/13 15:42	
Surrogate: 4-Bromofluorobenzene	98.6 %		70 - 130		B3H0148	08/08/2013	08/08/13 15:42	
Surrogate: Dibromofluoromethane	81.5 %		70 - 130		B3H0148	08/08/2013	08/08/13 15:42	
Surrogate: Toluene-d8	78.6 %		70 - 130		B3H0148	08/08/2013	08/08/13 15:42	



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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 : 08/15/2013

Client Sample ID MW-39

Lab ID: 1302351-06

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0162	08/08/2013	08/08/13 17:49	
Surrogate: 1,2-Dichlorobenzene-d4	72.1 %		47 - 117		B3H0162	08/08/2013	08/08/13 17:49	
Surrogate: 2-Fluorobiphenyl	81.0 %		48 - 121		B3H0162	08/08/2013	08/08/13 17:49	
Surrogate: 4-Terphenyl-d14	83.0 %		58 - 142		B3H0162	08/08/2013	08/08/13 17:49	
Surrogate: Nitrobenzene-d5	80.3 %		27 - 151		B3H0162	08/08/2013	08/08/13 17:49	



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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 : 08/15/2013

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3H0148 - MSVOAW_LL

Blank (B3H0148-BLK1)

Prepared: 8/8/2013 Analyzed: 8/8/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR



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 : 08/15/2013

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

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

Batch B3H0148 - MSVOAW_LL (continued)

Blank (B3H0148-BLK1) - Continued

Prepared: 8/8/2013 Analyzed: 8/8/2013

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	21.95		25.0000		87.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.15		25.0000		101	70 - 130			
Surrogate: Dibromofluoromethane	20.59		25.0000		82.4	70 - 130			
Surrogate: Toluene-d8	21.13		25.0000		84.5	70 - 130			

LCS (B3H0148-BS1)

Prepared: 8/8/2013 Analyzed: 8/8/2013

1,1-Dichloroethene	15.9500		20.0000		79.8	70 - 130			
Benzene	31.2600		40.0000		78.2	70 - 130			
Chlorobenzene	17.5500		20.0000		87.8	70 - 130			
MTBE	18.2500		20.0000		91.2	70 - 130			
Toluene	34.9000		40.0000		87.2	70 - 130			
Trichloroethene	15.0400		20.0000		75.2	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	20.60		25.0000		82.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	26.10		25.0000		104	70 - 130			
Surrogate: Dibromofluoromethane	19.75		25.0000		79.0	70 - 130			
Surrogate: Toluene-d8	22.79		25.0000		91.2	70 - 130			

LCS Dup (B3H0148-BSD1)

Prepared: 8/8/2013 Analyzed: 8/8/2013

1,1-Dichloroethene	15.0400		20.0000		75.2	70 - 130	5.87	20	
Benzene	30.5500		40.0000		76.4	70 - 130	2.30	20	
Chlorobenzene	17.0800		20.0000		85.4	70 - 130	2.71	20	
MTBE	17.7500		20.0000		88.8	70 - 130	2.78	20	
Toluene	34.0300		40.0000		85.1	70 - 130	2.52	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 : 08/15/2013

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

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

Batch B3H0148 - MSVOAW_LL (continued)

LCS Dup (B3H0148-BSD1) - Continued

Prepared: 8/8/2013 Analyzed: 8/8/2013

Trichloroethene	14.5400		20.0000		72.7	70 - 130	3.38	20	
Surrogate: 1,2-Dichloroethane-d4	20.66		25.0000		82.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.35		25.0000		101	70 - 130			
Surrogate: Dibromofluoromethane	19.54		25.0000		78.2	70 - 130			
Surrogate: Toluene-d8	23.07		25.0000		92.3	70 - 130			



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 : 08/15/2013

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

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

Batch B3H0162 - MSSEMI

Blank (B3H0162-BLK1)

Prepared: 8/8/2013 Analyzed: 8/8/2013

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.6865		1.00000		68.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8071		1.00000		80.7	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9396		1.00000		94.0	58 - 142			
Surrogate: Nitrobenzene-d5	0.7805		1.00000		78.1	27 - 151			

LCS (B3H0162-BS1)

Prepared: 8/8/2013 Analyzed: 8/8/2013

1,4-Dioxane	0.954120	0.20	1.00000		95.4	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7074		1.00000		70.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8234		1.00000		82.3	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9515		1.00000		95.2	58 - 142			
Surrogate: Nitrobenzene-d5	0.8056		1.00000		80.6	27 - 151			

LCS Dup (B3H0162-BSD1)

Prepared: 8/8/2013 Analyzed: 8/8/2013

1,4-Dioxane	0.876020	0.20	1.00000		87.6	58 - 151	8.53	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6676		1.00000		66.8	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7631		1.00000		76.3	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9042		1.00000		90.4	58 - 142			
Surrogate: Nitrobenzene-d5	0.7372		1.00000		73.7	27 - 151			



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 : 08/15/2013

Notes and Definitions

ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 8/7-8/13 PAGE 1 OF 1

PROJECT NAME RAYTHEON-MAIN				PROJECT No./TASK No. 532.30				SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION					
PROJECT MANAGER Chris Ross				Phone No. 858-455-6520				40 mL VOA 1 L Amber		VOCs by 8260B 1,4-dioxane by EPA 8270 SIM				24 Hour TAT Standard TAT		ATL: <u>attn</u> <u>Rachelle</u> <u>Arday</u>					
QA MANAGER Steve Netto				Fax No. 858-455-6533																	
SAMPLER SIGNATURE <i>[Signature]</i>				SAMPLER (PRINTED) DANIEL MORA ERIN HUNTER SHAYNE KAPPUS																	
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION									REMARKS					
		Date	Time	Soil	Ground Water	Surface Water	Lab H ₂ O	HCl	HNO ₃	NaOH	H ₂ SO ₄						Ice				
	TB-080713A	8/7/13	1400				X	X				X									
	MW-3800		1600	X			X					X									
	↓		↓	X			X					X									
	MW-38		1620	X			X					X									
	↓		↓	X			X					X									
	TB-080813A	8/8/13	1000				X	X				X									
	MW-3900		1038	X			X					X									
	↓		↓	X			X					X									
	MW-39		1028	X			X					X									
	↓		↓	X			X					X									
Total number of Containers per analysis: 20												Total No. of Containers: 20									
Relinquished by: <i>[Signature]</i>		Date: 8/8/13	Received by: APRIL MANN		Date: 8/8/13	INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.												Shipment Method: Drop-off			
Company: HHA		Time: 1340	Company: ATL		Time: 1340													Send Results to: Steve Netto			
Relinquished by:		Date:	Received by:		Date:	Sample Receipt: ☐ No. of containers correct ☐ received good condition/cold ☐ custody seals secure ☐ conforms to COC document												☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300			
Company:		Time:	Company:		Time:													Temp. @ receipt 1.6 °C Send invoice to San Diego, CA Attn: Accounts Payable			

ORIGINAL • LABORATORY

YELLOW: QA MANAGER

PINK: FIELD/TASK MANAGER

July 29, 2013

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
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1302120
Client Reference : RAYTHEON MAIN, 532.30

Enclosed are the results for sample(s) received on July 18, 2013 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,



Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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 : 07/29/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-07182013	1302120-01	Lab H2O	7/18/13 13:00	7/18/13 16:30
MW-40	1302120-02	Groundwater	7/18/13 13:35	7/18/13 16:30
MW-4000	1302120-03	Groundwater	7/18/13 14:00	7/18/13 16:30



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 : 07/29/2013

Client Sample ID TB-07182013

Lab ID: 1302120-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,1-Dichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,1-Dichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
2-Chlorotoluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
4-Chlorotoluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Benzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Bromobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Bromodichloromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Bromoform	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Bromomethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Carbon tetrachloride	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Chlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Chloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Chloroform	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Chloromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Dibromochloromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	



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 : 07/29/2013

Client Sample ID TB-07182013

Lab ID: 1302120-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Ethylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Isopropylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
m,p-Xylene	ND	1.0	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Methylene chloride	ND	1.0	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
n-Butylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
n-Propylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Naphthalene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
o-Xylene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
sec-Butylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Styrene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
tert-Butylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Tetrachloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Toluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Trichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Vinyl chloride	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 15:00	
Surrogate: 1,2-Dichloroethane-d4	77.2 %		70 - 130		B3G0321	07/19/2013	07/19/13 15:00	
Surrogate: 4-Bromofluorobenzene	87.8 %		70 - 130		B3G0321	07/19/2013	07/19/13 15:00	
Surrogate: Dibromofluoromethane	77.5 %		70 - 130		B3G0321	07/19/2013	07/19/13 15:00	
Surrogate: Toluene-d8	74.4 %		70 - 130		B3G0321	07/19/2013	07/19/13 15:00	



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 : 07/29/2013

Client Sample ID MW-40

Lab ID: 1302120-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,1-Dichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,1-Dichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
2-Chlorotoluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
4-Chlorotoluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Benzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Bromobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Bromodichloromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Bromoform	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Bromomethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Carbon tetrachloride	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Chlorobenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Chloroethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Chloroform	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Chloromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Dibromochloromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	



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 : 07/29/2013

Client Sample ID MW-40

Lab ID: 1302120-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Ethylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Isopropylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
m,p-Xylene	ND	1.0	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Methylene chloride	ND	1.0	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
n-Butylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
n-Propylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Naphthalene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
o-Xylene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
sec-Butylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Styrene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
tert-Butylbenzene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Tetrachloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Toluene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Trichloroethene	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Vinyl chloride	ND	0.50	NA	1	B3G0321	07/19/2013	07/19/13 14:11	
Surrogate: 1,2-Dichloroethane-d4	77.5 %		70 - 130		B3G0321	07/19/2013	07/19/13 14:11	
Surrogate: 4-Bromofluorobenzene	83.4 %		70 - 130		B3G0321	07/19/2013	07/19/13 14:11	
Surrogate: Dibromofluoromethane	76.4 %		70 - 130		B3G0321	07/19/2013	07/19/13 14:11	
Surrogate: Toluene-d8	71.2 %		70 - 130		B3G0321	07/19/2013	07/19/13 14:11	



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 : 07/29/2013

Client Sample ID MW-40

Lab ID: 1302120-02

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3G0344	07/19/2013	07/19/13 12:49	
Surrogate: 1,2-Dichlorobenzene-d4	78.4 %		47 - 117		B3G0344	07/19/2013	07/19/13 12:49	
Surrogate: 2-Fluorobiphenyl	102 %		48 - 121		B3G0344	07/19/2013	07/19/13 12:49	
Surrogate: 4-Terphenyl-d14	103 %		58 - 142		B3G0344	07/19/2013	07/19/13 12:49	
Surrogate: Nitrobenzene-d5	100 %		27 - 151		B3G0344	07/19/2013	07/19/13 12:49	



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 : 07/29/2013

Client Sample ID MW-4000

Lab ID: 1302120-03

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,1-Dichloroethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,1-Dichloroethene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
2-Chlorotoluene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
4-Chlorotoluene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Benzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Bromobenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Bromodichloromethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Bromoform	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Bromomethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Carbon tetrachloride	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Chlorobenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Chloroethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Chloroform	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Chloromethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Dibromochloromethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	



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 : 07/29/2013

Client Sample ID MW-4000

Lab ID: 1302120-03

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Ethylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Isopropylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
m,p-Xylene	ND	1.0	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Methylene chloride	ND	1.0	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
n-Butylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
n-Propylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Naphthalene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
o-Xylene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
sec-Butylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Styrene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
tert-Butylbenzene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Tetrachloroethene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Toluene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Trichloroethene	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Vinyl chloride	ND	0.50	NA	1	B3G0362	07/22/2013	07/22/13 12:42	
Surrogate: 1,2-Dichloroethane-d4	83.9 %		70 - 130		B3G0362	07/22/2013	07/22/13 12:42	
Surrogate: 4-Bromofluorobenzene	113 %		70 - 130		B3G0362	07/22/2013	07/22/13 12:42	
Surrogate: Dibromofluoromethane	87.0 %		70 - 130		B3G0362	07/22/2013	07/22/13 12:42	
Surrogate: Toluene-d8	80.8 %		70 - 130		B3G0362	07/22/2013	07/22/13 12:42	



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 : 07/29/2013

Client Sample ID MW-4000

Lab ID: 1302120-03

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3G0344	07/19/2013	07/24/13 10:05	
Surrogate: 1,2-Dichlorobenzene-d4	81.1 %		47 - 117		B3G0344	07/19/2013	07/24/13 10:05	
Surrogate: 2-Fluorobiphenyl	106 %		48 - 121		B3G0344	07/19/2013	07/24/13 10:05	
Surrogate: 4-Terphenyl-d14	106 %		58 - 142		B3G0344	07/19/2013	07/24/13 10:05	
Surrogate: Nitrobenzene-d5	95.4 %		27 - 151		B3G0344	07/19/2013	07/24/13 10:05	



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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 : 07/29/2013

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3G0321 - MSVOAW_LL

Blank (B3G0321-BLK1)

Prepared: 7/19/2013 Analyzed: 7/19/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR



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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 : 07/29/2013

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

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

Batch B3G0321 - MSVOAW_LL (continued)

Blank (B3G0321-BLK1) - Continued

Prepared: 7/19/2013 Analyzed: 7/19/2013

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	18.52		25.0000		74.1	70 - 130			
Surrogate: 4-Bromofluorobenzene	21.68		25.0000		86.7	70 - 130			
Surrogate: Dibromofluoromethane	19.29		25.0000		77.2	70 - 130			
Surrogate: Toluene-d8	18.59		25.0000		74.4	70 - 130			

LCS (B3G0321-BS1)

Prepared: 7/19/2013 Analyzed: 7/19/2013

1,1-Dichloroethene	16.5000		20.0000		82.5	70 - 130			
Benzene	34.8400		40.0000		87.1	70 - 130			
Chlorobenzene	19.2900		20.0000		96.4	70 - 130			
MTBE	19.6300		20.0000		98.2	70 - 130			
Toluene	39.4900		40.0000		98.7	70 - 130			
Trichloroethene	18.9000		20.0000		94.5	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	19.12		25.0000		76.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	21.81		25.0000		87.2	70 - 130			
Surrogate: Dibromofluoromethane	19.93		25.0000		79.7	70 - 130			
Surrogate: Toluene-d8	22.05		25.0000		88.2	70 - 130			

LCS Dup (B3G0321-BSD1)

Prepared: 7/19/2013 Analyzed: 7/19/2013

1,1-Dichloroethene	16.7000		20.0000		83.5	70 - 130	1.20	20	
Benzene	32.5200		40.0000		81.3	70 - 130	6.89	20	
Chlorobenzene	18.0000		20.0000		90.0	70 - 130	6.92	20	
MTBE	18.3900		20.0000		92.0	70 - 130	6.52	20	
Toluene	37.1800		40.0000		93.0	70 - 130	6.03	20	



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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 07/29/2013

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

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

Batch B3G0321 - MSVOAW_LL (continued)

LCS Dup (B3G0321-BSD1) - Continued

Prepared: 7/19/2013 Analyzed: 7/19/2013

Trichloroethene	18.2400		20.0000		91.2	70 - 130	3.55	20	
Surrogate: 1,2-Dichloroethane-d4	17.49		25.0000		70.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	20.90		25.0000		83.6	70 - 130			
Surrogate: Dibromofluoromethane	18.20		25.0000		72.8	70 - 130			
Surrogate: Toluene-d8	20.47		25.0000		81.9	70 - 130			

Batch B3G0362 - MSVOAW_LL

Blank (B3G0362-BLK1)

Prepared: 7/22/2013 Analyzed: 7/22/2013

1,1,1,2-Tetrachloroethane	ND	0.50		NR
1,1,1-Trichloroethane	ND	0.50		NR
1,1,2,2-Tetrachloroethane	ND	0.50		NR
1,1,2-Trichloroethane	ND	0.50		NR
1,1-Dichloroethane	ND	0.50		NR
1,1-Dichloroethene	ND	0.50		NR
1,1-Dichloropropene	ND	0.50		NR
1,2,3-Trichloropropane	ND	0.50		NR
1,2,3-Trichlorobenzene	ND	0.50		NR
1,2,4-Trichlorobenzene	ND	0.50		NR
1,2,4-Trimethylbenzene	ND	0.50		NR
1,2-Dibromo-3-chloropropane	ND	0.50		NR
1,2-Dibromoethane	ND	0.50		NR
1,2-Dichlorobenzene	ND	0.50		NR
1,2-Dichloroethane	ND	0.50		NR
1,2-Dichloropropane	ND	0.50		NR
1,3,5-Trimethylbenzene	ND	0.50		NR
1,3-Dichlorobenzene	ND	0.50		NR
1,3-Dichloropropane	ND	0.50		NR
1,4-Dichlorobenzene	ND	0.50		NR
2,2-Dichloropropane	ND	0.50		NR
2-Chlorotoluene	ND	0.50		NR
4-Chlorotoluene	ND	0.50		NR
4-Isopropyltoluene	ND	0.50		NR
Benzene	ND	0.50		NR
Bromobenzene	ND	0.50		NR
Bromodichloromethane	ND	0.50		NR
Bromoform	ND	0.50		NR
Bromomethane	ND	0.50		NR
Carbon tetrachloride	ND	0.50		NR
Chlorobenzene	ND	0.50		NR
Chloroethane	ND	0.50		NR



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 : 07/29/2013

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

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

Batch B3G0362 - MSVOAW_LL (continued)

Blank (B3G0362-BLK1) - Continued

Prepared: 7/22/2013 Analyzed: 7/22/2013

Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,2-Dichloroethene	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Dibromomethane	ND	0.50			NR				
Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	21.17		25.0000		84.7	70 - 130			
Surrogate: 4-Bromofluorobenzene	31.63		25.0000		127	70 - 130			
Surrogate: Dibromofluoromethane	22.30		25.0000		89.2	70 - 130			
Surrogate: Toluene-d8	21.80		25.0000		87.2	70 - 130			

LCS (B3G0362-BS1)

Prepared: 7/22/2013 Analyzed: 7/22/2013

1,1-Dichloroethene	20.1200		20.0000		101	70 - 130			
Benzene	36.5400		40.0000		91.4	70 - 130			
Chlorobenzene	19.7700		20.0000		98.8	70 - 130			
MTBE	21.6600		20.0000		108	70 - 130			
Toluene	41.3100		40.0000		103	70 - 130			
Trichloroethene	21.0400		20.0000		105	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	18.18		25.0000		72.7	70 - 130			
Surrogate: 4-Bromofluorobenzene	28.00		25.0000		112	70 - 130			
Surrogate: Dibromofluoromethane	19.57		25.0000		78.3	70 - 130			
Surrogate: Toluene-d8	22.09		25.0000		88.4	70 - 130			



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 : 07/29/2013

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

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

Batch B3G0362 - MSVOAW_LL (continued)

LCS Dup (B3G0362-BSD1)

Prepared: 7/22/2013 Analyzed: 7/22/2013

1,1-Dichloroethene	19.4900		20.0000		97.4	70 - 130	3.18	20	
Benzene	34.4100		40.0000		86.0	70 - 130	6.00	20	
Chlorobenzene	19.7100		20.0000		98.6	70 - 130	0.304	20	
MTBE	21.8300		20.0000		109	70 - 130	0.782	20	
Toluene	39.2000		40.0000		98.0	70 - 130	5.24	20	
Trichloroethene	19.2400		20.0000		96.2	70 - 130	8.94	20	

Surrogate: 1,2-Dichloroethane-d4	19.91		25.0000		79.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	29.73		25.0000		119	70 - 130			
Surrogate: Dibromofluoromethane	20.29		25.0000		81.2	70 - 130			
Surrogate: Toluene-d8	21.78		25.0000		87.1	70 - 130			



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 : 07/29/2013

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

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

Batch B3G0344 - MSSEMI_ISOTOPEDILN

Blank (B3G0344-BLK1)

Prepared: 7/19/2013 Analyzed: 7/19/2013

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7385		1.00000		73.8	47 - 117			
Surrogate: 2-Fluorobiphenyl	1.006		1.00000		101	48 - 121			
Surrogate: 4-Terphenyl-d14	1.028		1.00000		103	58 - 142			
Surrogate: Nitrobenzene-d5	0.9533		1.00000		95.3	27 - 151			

LCS (B3G0344-BS1)

Prepared: 7/19/2013 Analyzed: 7/19/2013

1,4-Dioxane	0.950460	0.20	1.00000		95.0	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7771		1.00000		77.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	1.027		1.00000		103	48 - 121			
Surrogate: 4-Terphenyl-d14	1.034		1.00000		103	58 - 142			
Surrogate: Nitrobenzene-d5	1.005		1.00000		101	27 - 151			

LCS Dup (B3G0344-BSD1)

Prepared: 7/19/2013 Analyzed: 7/19/2013

1,4-Dioxane	1.12315	0.20	1.00000		112	58 - 151	16.7	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6427		1.00000		64.3	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8562		1.00000		85.6	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9367		1.00000		93.7	58 - 142			
Surrogate: Nitrobenzene-d5	0.8034		1.00000		80.3	27 - 151			



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 : 07/29/2013

Notes and Definitions

ND Analyte not detected at or above reporting limit

PQL Practical Quantitation Limit

MDL Method Detection Limit

NR Not Reported

RPD Relative Percent Difference

CA1 CA-NELAP (CDPH)

CA2 CA-ELAP (CDPH)

OR1 OR-NELAP (OSPHL)

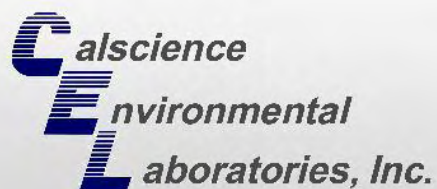
TX1 TX-NELAP (TCEQ)

- 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.



DATE 7/18/13 PAGE 1 OF 1

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CALSCIENCE

WORK ORDER NUMBER: 13-07-1221

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Analytical Report For

Client: Hargis + Associates, Inc.

Client Project Name: Raytheon Main / 532.30

Attention: Chris Ross

9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Emma C. Domineau for

Approved for release on 08/05/2013 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶



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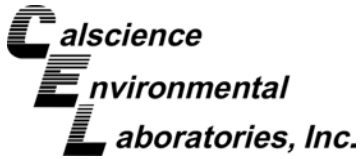
7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

NELAP ID: 03220CA | DoD-ELAP ID: L10-41 | CSDLAC ID: 10109 | SCAQMD ID: 93LA0830

Contents

Client Project Name: Raytheon Main / 532.30
Work Order Number: 13-07-1221

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Work Order Narrative

Work Order: 13-07-1221

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Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 07/18/13. They were assigned to Work Order 13-07-1221.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

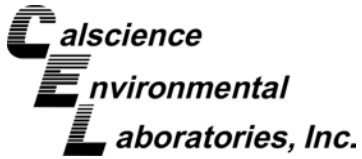
All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

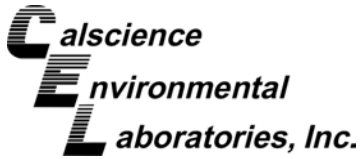
Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.



Sample Summary

Client:	Hargis + Associates, Inc.	Work Order:	13-07-1221
	9171 Towne Centre Drive, Suite 375	Project Name:	Raytheon Main / 532.30
	San Diego, CA 92122-6215	PO Number:	
Attn:	Chris Ross	Date Received:	07/18/13

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB-07182013A	13-07-1221-1	07/18/13 13:05	3	Aqueous
MW-40	13-07-1221-2	07/18/13 13:35	5	Aqueous



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 3520C
Method: EPA 8270C(M) Isotope Dilution
Units: ug/L

Project: Raytheon Main / 532.30

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-40	13-07-1221-2-D	07/18/13 13:35	Aqueous	GC/MS DDD	07/19/13	07/25/13 21:00	130719L15

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	66	56-123	

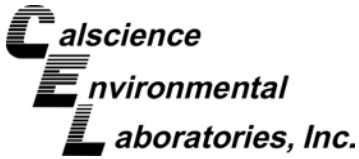
Method Blank	099-09-004-2352	N/A	Aqueous	GC/MS DDD	07/19/13	07/25/13 01:22	130719L15

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	64	56-123	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

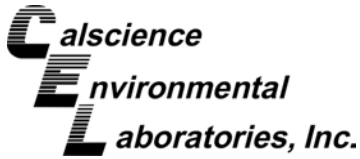
Project: Raytheon Main / 532.30

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-07182013A	13-07-1221-1-B	07/18/13 13:05	Aqueous	GC/MS Z	07/23/13	07/23/13 12:01	130723L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

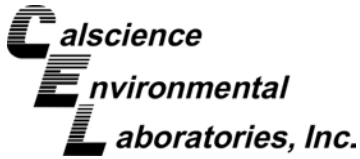
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	97	80-120	
Dibromofluoromethane	98	80-126	
1,2-Dichloroethane-d4	91	80-134	
Toluene-d8	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

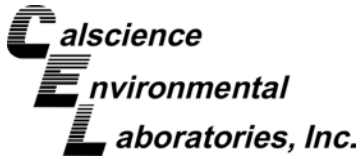
Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-40	13-07-1221-2-B	07/18/13 13:35	Aqueous	GC/MS Z	07/23/13	07/23/13 17:58	130723L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

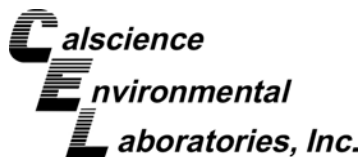
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	98	80-120	
Dibromofluoromethane	104	80-126	
1,2-Dichloroethane-d4	96	80-134	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

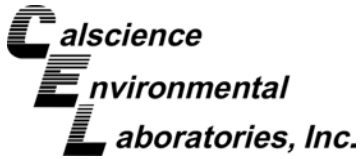
Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-11476	N/A	Aqueous	GC/MS Z	07/23/13	07/23/13 11:34	130723L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

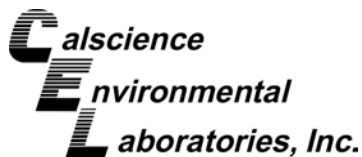
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	98	80-120	
Dibromofluoromethane	98	80-126	
1,2-Dichloroethane-d4	93	80-134	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B

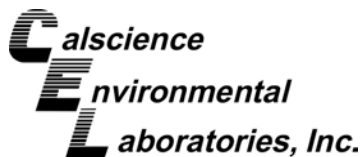
Project: Raytheon Main / 532.30

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Quality Control Sample ID	Matrix		Instrument		Date Prepared	Date Analyzed	MS/MSD Batch Number			
13-07-1121-1	Aqueous		GC/MS Z		07/23/13	07/23/13 13:22	130723S01			
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	53.99	108	53.66	107	78-120	1	0-20	
Carbon Tetrachloride	ND	50.00	52.48	105	53.27	107	67-139	1	0-20	
Chlorobenzene	ND	50.00	50.53	101	51.51	103	80-120	2	0-20	
1,2-Dibromoethane	ND	50.00	54.74	109	55.31	111	80-123	1	0-20	
1,2-Dichlorobenzene	ND	50.00	51.37	103	51.52	103	76-120	0	0-20	
1,2-Dichloroethane	ND	50.00	52.38	105	51.75	103	76-130	1	0-20	
1,1-Dichloroethene	2.470	50.00	57.24	110	57.15	109	70-130	0	0-27	
Ethylbenzene	ND	50.00	54.61	109	55.89	112	73-127	2	0-20	
Toluene	ND	50.00	54.82	110	54.88	110	72-126	0	0-20	
Trichloroethene	28.46	50.00	80.56	104	79.65	102	74-122	1	0-20	
Vinyl Chloride	ND	50.00	49.46	99	49.29	99	65-131	0	0-24	
p/m-Xylene	ND	100.0	105.2	105	106.2	106	70-130	1	0-30	
o-Xylene	ND	50.00	52.21	104	53.22	106	70-130	2	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	53.68	107	54.72	109	69-123	2	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 3520C
Method: EPA 8270C(M) Isotope Dilution

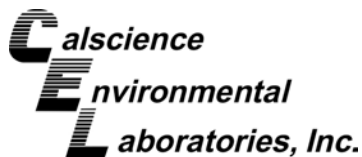
Project: Raytheon Main / 532.30

Page 1 of 2

Quality Control Sample ID		Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-004-2352		Aqueous	GC/MS DDD	07/19/13	07/25/13 01:42	130719L15			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
1,4-Dioxane	200.0	185.8	93	201.3	101	50-130	8	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 07/18/13
Work Order: 13-07-1221
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon Main / 532.30

Page 2 of 2

Quality Control Sample ID	Matrix		Instrument	Date Analyzed	LCS Batch Number	
099-14-001-11476	Aqueous		GC/MS Z	07/23/13 10:40	130723L01	
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	53.73	107	80-120	73-127	
Carbon Tetrachloride	50.00	50.25	100	66-138	54-150	
Chlorobenzene	50.00	50.40	101	80-120	73-127	
1,2-Dibromoethane	50.00	51.74	103	80-120	73-127	
1,2-Dichlorobenzene	50.00	51.62	103	80-120	73-127	
1,2-Dichloroethane	50.00	49.02	98	80-129	72-137	
1,1-Dichloroethene	50.00	52.12	104	71-131	61-141	
Ethylbenzene	50.00	54.80	110	80-123	73-130	
Toluene	50.00	55.73	111	79-121	72-128	
Trichloroethene	50.00	54.15	108	80-120	73-127	
Vinyl Chloride	50.00	46.85	94	70-136	59-147	
p/m-Xylene	100.0	103.1	103	75-125	67-133	
o-Xylene	50.00	51.70	103	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	50.79	102	72-126	63-135	

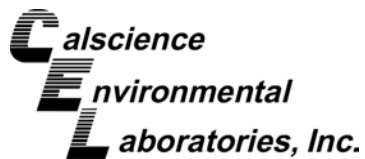
Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents



Sample Analysis Summary Report

Work Order: 13-07-1221Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 8260B	EPA 5030C	796	GC/MS Z	2
EPA 8270C(M) Isotope Dilution	EPA 3520C	859	GC/MS DDD	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 13-07-1221

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



DATE 7/18/13 PAGE 1 OF 1

[illegible]

WORK ORDER #: **13-07-1221**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Hargis Associates, Inc

DATE: 07/18/13

TEMPERATURE: Thermometer ID: SC3 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.2 °C - 0.2 °C (CF) = 3.0 °C ☐ Blank ☒ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Initial: [Signature]

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____

☐ No (Not Intact)

☒ Not Present

☐ N/A

Initial: [Signature]

☐ Sample ☐ _____

☐ No (Not Intact)

☒ Not Present

Initial: [Signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	☒	☐	☐
COC document(s) received complete.....	☒	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC.....	☒	☐	☐
Sample container label(s) consistent with COC.....	☒	☐	☐
Sample container(s) intact and good condition.....	☒	☐	☐
Proper containers and sufficient volume for analyses requested.....	☒	☐	☐
Analyses received within holding time.....	☒	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours...	☐	☐	☒
Proper preservation noted on COC or sample container.....	☒	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	☐	☒	☐
Tedlar bag(s) free of condensation.....	☐	☐	☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

Water: ☐ VOA ☒ VOA^h ☐ VOAna₂ ☐ 125AGB ☐ 125AGB^h ☐ 125AGB^p ☒ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBz_{na} ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister Other: ☐ _____ Trip Blank Lot#: N/A Labeled/Checked by: [Signature]

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: [Signature]

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure z_{na}: ZnAc₂+NaOH f: Filtered Scanned by: [Signature]

WORK ORDER #: 13-07-1221

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ Sample(s) NOT RECEIVED but listed on COC
☐ Sample(s) received but NOT LISTED on COC
☐ Holding time expired – list sample ID(s) and test
☐ Insufficient quantities for analysis – list test
☐ Improper container(s) used – list test
☐ Improper preservative used – list test
☐ No preservative noted on COC or label – list test & notify lab
☐ Sample labels illegible – note test/container type
☐ Sample label(s) do not match COC – Note in comments
 - ☐ Sample ID
 - ☐ Date and/or Time Collected
 - ☐ Project Information
 - ☐ # of Container(s)
 - ☐ Analysis☐ Sample container(s) compromised – Note in comments
 - ☐ Water present in sample container
 - ☐ Broken☐ Sample container(s) not labeled
☐ Air sample container(s) compromised – Note in comments
 - ☐ Flat
 - ☐ Very low in volume
 - ☐ Leaking (Not transferred - duplicate bag submitted)
 - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
 - ☐ Leaking (transferred into Client's Tedlar® Bag*)☐ Other: _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis
1	B.C	2							

Comments: _____

*Transferred at Client's request.

Initial / Date: WS 07/18/13

GROUNDWATER SAMPLING ANALYTICAL RESULTS

August 27, 2013

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



Re: ATL Work Order Number : 1302423
Client Reference : RAYTHEON MAIN, 532.30

Enclosed are the results for sample(s) received on August 13, 2013 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.

This is an amended report. Please disregard all previous documentation that corresponds to the page(s) enclosed.

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,

Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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 : 08/27/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-081213	1302423-01	Lab H2O	8/12/13 13:45	8/13/13 17:10
EW-01	1302423-02	Groundwater	8/12/13 14:05	8/13/13 17:10
MW-21	1302423-03	Groundwater	8/12/13 14:10	8/13/13 17:10
MW-32A	1302423-04	Groundwater	8/13/13 11:30	8/13/13 17:10
MW-32C	1302423-05	Groundwater	8/13/13 15:35	8/13/13 17:10
MW-32B	1302423-06	Groundwater	8/13/13 17:05	8/13/13 17:10
MW-20	1302423-07	Groundwater	8/13/13 10:45	8/13/13 17:10
MW-34C	1302423-08	Groundwater	8/13/13 14:00	8/13/13 17:10
MW-34A	1302423-09	Groundwater	8/13/13 14:30	8/13/13 17:10
MW-34B	1302423-10	Groundwater	8/13/13 15:55	8/13/13 17:10
MW-28	1302423-11	Groundwater	8/13/13 16:43	8/13/13 17:10



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 : 08/27/2013

Client Sample ID TB-081213

Lab ID: 1302423-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	



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 : 08/27/2013

Client Sample ID TB-081213

Lab ID: 1302423-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:19	
Surrogate: 1,2-Dichloroethane-d4	88.0 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:19	
Surrogate: 4-Bromofluorobenzene	92.3 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:19	
Surrogate: Dibromofluoromethane	96.7 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:19	
Surrogate: Toluene-d8	84.9 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:19	



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 : 08/27/2013

Client Sample ID EW-01

Lab ID: 1302423-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,1,2-Trichloroethane	0.85	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,1-Dichloroethane	2.9	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,1-Dichloroethene	220	5.0	NA	10	B3H0308	08/16/2013	08/16/13 10:19	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2-Dichloroethane	0.56	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	



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 : 08/27/2013

Client Sample ID EW-01

Lab ID: 1302423-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Tetrachloroethene	0.76	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:04	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>87.2 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 10:19</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.2 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:04</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>115 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 10:19</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.8 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:04</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.9 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:04</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>93.9 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 10:19</i>	
<i>Surrogate: Toluene-d8</i>	<i>91.2 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 10:19</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.5 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:04</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 : 08/27/2013

Client Sample ID EW-01

Lab ID: 1302423-02

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	81	2.0	NA	1	B3H0324	08/16/2013	08/20/13 10:52	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>66.4 %</i>		<i>37 - 93</i>		B3H0324	08/16/2013	<i>08/20/13 10:52</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.1 %</i>		<i>51 - 100</i>		B3H0324	08/16/2013	<i>08/20/13 10:52</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>98.9 %</i>		<i>58 - 113</i>		B3H0324	08/16/2013	<i>08/20/13 10:52</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>76.1 %</i>		<i>39 - 95</i>		B3H0324	08/16/2013	<i>08/20/13 10:52</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 : 08/27/2013

Client Sample ID MW-21

Lab ID: 1302423-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,1,1-Trichloroethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,1,2,2-Tetrachloroethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,1,2-Trichloroethane	6.1	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,1-Dichloroethane	19	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,1-Dichloroethene	1500	10	NA	20	B3H0308	08/16/2013	08/16/13 06:51	
1,1-Dichloropropene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2,3-Trichloropropane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2,3-Trichlorobenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2,4-Trichlorobenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2,4-Trimethylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2-Dibromo-3-chloropropane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2-Dibromoethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2-Dichlorobenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2-Dichloroethane	3.5	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,2-Dichloropropane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,3,5-Trimethylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,3-Dichlorobenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,3-Dichloropropane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
1,4-Dichlorobenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
2,2-Dichloropropane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
2-Chlorotoluene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
4-Chlorotoluene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
4-Isopropyltoluene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Benzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Bromobenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Bromodichloromethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Bromoform	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Bromomethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Carbon tetrachloride	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Chlorobenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Chloroethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Chloroform	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Chloromethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
cis-1,2-Dichloroethene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
cis-1,3-Dichloropropene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Dibromochloromethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6



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 : 08/27/2013

Client Sample ID MW-21

Lab ID: 1302423-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Dichlorodifluoromethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Ethylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Hexachlorobutadiene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Isopropylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
m,p-Xylene	ND	5.0	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Methylene chloride	ND	5.0	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
n-Butylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
n-Propylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Naphthalene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
o-Xylene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
sec-Butylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Styrene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
tert-Butylbenzene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Tetrachloroethene	3.4	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Toluene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
trans-1,2-Dichloroethene	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Trichloroethene	19	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Trichlorofluoromethane	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
Vinyl chloride	ND	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:29	D6
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>90.2 %</i>		<i>70 - 130</i>		B3H0308	08/16/2013	<i>08/16/13 06:51</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.6 %</i>		<i>70 - 130</i>		B3H0320	08/16/2013	<i>08/16/13 23:29</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.1 %</i>		<i>70 - 130</i>		B3H0308	08/16/2013	<i>08/16/13 06:51</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.2 %</i>		<i>70 - 130</i>		B3H0320	08/16/2013	<i>08/16/13 23:29</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>94.3 %</i>		<i>70 - 130</i>		B3H0320	08/16/2013	<i>08/16/13 23:29</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>96.4 %</i>		<i>70 - 130</i>		B3H0308	08/16/2013	<i>08/16/13 06:51</i>	
<i>Surrogate: Toluene-d8</i>	<i>94.2 %</i>		<i>70 - 130</i>		B3H0320	08/16/2013	<i>08/16/13 23:29</i>	
<i>Surrogate: Toluene-d8</i>	<i>93.2 %</i>		<i>70 - 130</i>		B3H0308	08/16/2013	<i>08/16/13 06:51</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 : 08/27/2013

Client Sample ID MW-21

Lab ID: 1302423-03

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	370	10	NA	5	B3H0324	08/16/2013	08/20/13 13:06	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>52.0 %</i>		<i>37 - 93</i>		B3H0324	08/16/2013	<i>08/20/13 13:06</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>57.4 %</i>		<i>51 - 100</i>		B3H0324	08/16/2013	<i>08/20/13 13:06</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>78.2 %</i>		<i>58 - 113</i>		B3H0324	08/16/2013	<i>08/20/13 13:06</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>57.0 %</i>		<i>39 - 95</i>		B3H0324	08/16/2013	<i>08/20/13 13:06</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 : 08/27/2013

Client Sample ID MW-32A

Lab ID: 1302423-04

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	



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 : 08/27/2013

Client Sample ID MW-32A

Lab ID: 1302423-04

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 03:42	
Surrogate: 1,2-Dichloroethane-d4	91.3 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:42	
Surrogate: 4-Bromofluorobenzene	97.1 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:42	
Surrogate: Dibromofluoromethane	99.2 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:42	
Surrogate: Toluene-d8	88.1 %		70 - 130		B3H0308	08/16/2013	08/16/13 03:42	



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 : 08/27/2013

Client Sample ID MW-32A

Lab ID: 1302423-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 16:47	
Surrogate: 1,2-Dichlorobenzene-d4	57.5 %		47 - 117		B3H0322	08/16/2013	08/16/13 16:47	
Surrogate: 2-Fluorobiphenyl	64.3 %		48 - 121		B3H0322	08/16/2013	08/16/13 16:47	
Surrogate: 4-Terphenyl-d14	79.8 %		58 - 142		B3H0322	08/16/2013	08/16/13 16:47	
Surrogate: Nitrobenzene-d5	70.1 %		27 - 151		B3H0322	08/16/2013	08/16/13 16:47	



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 : 08/27/2013

Client Sample ID MW-32C

Lab ID: 1302423-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	



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 : 08/27/2013

Client Sample ID MW-32C

Lab ID: 1302423-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:06	
Surrogate: 1,2-Dichloroethane-d4	90.1 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:06	
Surrogate: 4-Bromofluorobenzene	95.2 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:06	
Surrogate: Dibromofluoromethane	96.4 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:06	
Surrogate: Toluene-d8	85.5 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:06	



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 : 08/27/2013

Client Sample ID MW-32C

Lab ID: 1302423-05

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 17:13	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.6 %</i>		<i>47 - 117</i>		B3H0322	08/16/2013	<i>08/16/13 17:13</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>64.8 %</i>		<i>48 - 121</i>		B3H0322	08/16/2013	<i>08/16/13 17:13</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.1 %</i>		<i>58 - 142</i>		B3H0322	08/16/2013	<i>08/16/13 17:13</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>74.6 %</i>		<i>27 - 151</i>		B3H0322	08/16/2013	<i>08/16/13 17:13</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 : 08/27/2013

Client Sample ID MW-32B

Lab ID: 1302423-06

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,1-Dichloroethane	1.4	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,1-Dichloroethene	160	2.5	NA	5	B3H0320	08/16/2013	08/16/13 23:05	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
cis-1,2-Dichloroethene	5.6	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	



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 : 08/27/2013

Client Sample ID MW-32B

Lab ID: 1302423-06

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Trichloroethene	75	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 06:27	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.6 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:27</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.3 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 23:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.9 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:27</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.2 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 23:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>94.6 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 23:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.4 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:27</i>	
<i>Surrogate: Toluene-d8</i>	<i>87.6 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 23:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>89.7 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 06:27</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 : 08/27/2013

Client Sample ID MW-32B

Lab ID: 1302423-06

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	2.6	0.20	NA	1	B3H0322	08/16/2013	08/16/13 20:45	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>56.1 %</i>		<i>47 - 117</i>		B3H0322	08/16/2013	<i>08/16/13 20:45</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>61.5 %</i>		<i>48 - 121</i>		B3H0322	08/16/2013	<i>08/16/13 20:45</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>90.2 %</i>		<i>58 - 142</i>		B3H0322	08/16/2013	<i>08/16/13 20:45</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>69.7 %</i>		<i>27 - 151</i>		B3H0322	08/16/2013	<i>08/16/13 20:45</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 : 08/27/2013

Client Sample ID MW-20

Lab ID: 1302423-07

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	



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 : 08/27/2013

Client Sample ID MW-20

Lab ID: 1302423-07

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:17	
Surrogate: 1,2-Dichloroethane-d4	94.2 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:17	
Surrogate: 4-Bromofluorobenzene	100 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:17	
Surrogate: Dibromofluoromethane	100 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:17	
Surrogate: Toluene-d8	99.4 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:17	



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 : 08/27/2013

Client Sample ID MW-20

Lab ID: 1302423-07

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 17:40	
Surrogate: 1,2-Dichlorobenzene-d4	66.0 %		47 - 117		B3H0322	08/16/2013	08/16/13 17:40	
Surrogate: 2-Fluorobiphenyl	73.4 %		48 - 121		B3H0322	08/16/2013	08/16/13 17:40	
Surrogate: 4-Terphenyl-d14	92.8 %		58 - 142		B3H0322	08/16/2013	08/16/13 17:40	
Surrogate: Nitrobenzene-d5	79.7 %		27 - 151		B3H0322	08/16/2013	08/16/13 17:40	



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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 : 08/27/2013

Client Sample ID MW-34C

Lab ID: 1302423-08

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	



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 : 08/27/2013

Client Sample ID MW-34C

Lab ID: 1302423-08

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:53	
Surrogate: 1,2-Dichloroethane-d4	92.5 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:53	
Surrogate: 4-Bromofluorobenzene	95.0 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:53	
Surrogate: Dibromofluoromethane	98.5 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:53	
Surrogate: Toluene-d8	88.2 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:53	



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 : 08/27/2013

Client Sample ID MW-34C

Lab ID: 1302423-08

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 18:06	
Surrogate: 1,2-Dichlorobenzene-d4	66.7 %		47 - 117		B3H0322	08/16/2013	08/16/13 18:06	
Surrogate: 2-Fluorobiphenyl	69.6 %		48 - 121		B3H0322	08/16/2013	08/16/13 18:06	
Surrogate: 4-Terphenyl-d14	88.0 %		58 - 142		B3H0322	08/16/2013	08/16/13 18:06	
Surrogate: Nitrobenzene-d5	78.4 %		27 - 151		B3H0322	08/16/2013	08/16/13 18:06	



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 : 08/27/2013

Client Sample ID MW-34A

Lab ID: 1302423-09

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	



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 : 08/27/2013

Client Sample ID MW-34A

Lab ID: 1302423-09

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 04:29	
Surrogate: 1,2-Dichloroethane-d4	90.6 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:29	
Surrogate: 4-Bromofluorobenzene	97.6 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:29	
Surrogate: Dibromofluoromethane	96.9 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:29	
Surrogate: Toluene-d8	88.8 %		70 - 130		B3H0308	08/16/2013	08/16/13 04:29	



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 : 08/27/2013

Client Sample ID MW-34A

Lab ID: 1302423-09

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 18:33	
Surrogate: 1,2-Dichlorobenzene-d4	73.4 %		47 - 117		B3H0322	08/16/2013	08/16/13 18:33	
Surrogate: 2-Fluorobiphenyl	78.1 %		48 - 121		B3H0322	08/16/2013	08/16/13 18:33	
Surrogate: 4-Terphenyl-d14	104 %		58 - 142		B3H0322	08/16/2013	08/16/13 18:33	
Surrogate: Nitrobenzene-d5	90.2 %		27 - 151		B3H0322	08/16/2013	08/16/13 18:33	



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 : 08/27/2013

Client Sample ID MW-34B

Lab ID: 1302423-10

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,1,1-Trichloroethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,1,2,2-Tetrachloroethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,1,2-Trichloroethane	1.8	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,1-Dichloroethane	4.9	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,1-Dichloroethene	540	10	NA	20	B3H0308	08/16/2013	08/16/13 07:14	
1,1-Dichloropropene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2,3-Trichloropropane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2,3-Trichlorobenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2,4-Trichlorobenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2,4-Trimethylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2-Dibromo-3-chloropropane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2-Dibromoethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2-Dichlorobenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2-Dichloroethane	1.1	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,2-Dichloropropane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,3,5-Trimethylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,3-Dichlorobenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,3-Dichloropropane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
1,4-Dichlorobenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
2,2-Dichloropropane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
2-Chlorotoluene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
4-Chlorotoluene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
4-Isopropyltoluene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Benzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Bromobenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Bromodichloromethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Bromoform	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Bromomethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Carbon tetrachloride	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Chlorobenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Chloroethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Chloroform	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Chloromethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
cis-1,2-Dichloroethene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
cis-1,3-Dichloropropene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Dibromochloromethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6



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 : 08/27/2013

Client Sample ID MW-34B

Lab ID: 1302423-10

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Dichlorodifluoromethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Ethylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Hexachlorobutadiene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Isopropylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
m,p-Xylene	ND	2.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Methylene chloride	ND	2.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
n-Butylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
n-Propylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Naphthalene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
o-Xylene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
sec-Butylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Styrene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
tert-Butylbenzene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Tetrachloroethene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Toluene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
trans-1,2-Dichloroethene	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Trichloroethene	1.3	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Trichlorofluoromethane	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6
Vinyl chloride	ND	1.0	NA	2	B3H0320	08/17/2013	08/17/13 00:16	D6

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.1 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 07:14</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.6 %</i>	<i>70 - 130</i>			B3H0320	08/17/2013	<i>08/17/13 00:16</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.7 %</i>	<i>70 - 130</i>			B3H0320	08/17/2013	<i>08/17/13 00:16</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.9 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 07:14</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.6 %</i>	<i>70 - 130</i>			B3H0320	08/17/2013	<i>08/17/13 00:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.1 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 07:14</i>	
<i>Surrogate: Toluene-d8</i>	<i>87.6 %</i>	<i>70 - 130</i>			B3H0320	08/17/2013	<i>08/17/13 00:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.4 %</i>	<i>70 - 130</i>			B3H0308	08/16/2013	<i>08/16/13 07:14</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 : 08/27/2013

Client Sample ID MW-34B

Lab ID: 1302423-10

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	190	2.0	NA	1	B3H0324	08/16/2013	08/20/13 12:39	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>75.0 %</i>		<i>37 - 93</i>		B3H0324	08/16/2013	<i>08/20/13 12:39</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>80.4 %</i>		<i>51 - 100</i>		B3H0324	08/16/2013	<i>08/20/13 12:39</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>101 %</i>		<i>58 - 113</i>		B3H0324	08/16/2013	<i>08/20/13 12:39</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>89.2 %</i>		<i>39 - 95</i>		B3H0324	08/16/2013	<i>08/20/13 12:39</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 : 08/27/2013

Client Sample ID MW-28

Lab ID: 1302423-11

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,1-Dichloroethene	5.2	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
2-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
4-Chlorotoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Benzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Bromobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Bromodichloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Bromoform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Bromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Carbon tetrachloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Chlorobenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Chloroethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Chloroform	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Chloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Dibromochloromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	



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 : 08/27/2013

Client Sample ID MW-28

Lab ID: 1302423-11

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Ethylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Isopropylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
m,p-Xylene	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Methylene chloride	ND	1.0	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
n-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
n-Propylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Naphthalene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
o-Xylene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
sec-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Styrene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
tert-Butylbenzene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Tetrachloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Toluene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Trichloroethene	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Vinyl chloride	ND	0.50	NA	1	B3H0308	08/16/2013	08/16/13 05:40	
Surrogate: 1,2-Dichloroethane-d4	92.7 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:40	
Surrogate: 4-Bromofluorobenzene	95.2 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:40	
Surrogate: Dibromofluoromethane	97.8 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:40	
Surrogate: Toluene-d8	93.0 %		70 - 130		B3H0308	08/16/2013	08/16/13 05:40	



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 : 08/27/2013

Client Sample ID MW-28

Lab ID: 1302423-11

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	1.3	0.20	NA	1	B3H0322	08/16/2013	08/16/13 20:19	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.9 %</i>		<i>47 - 117</i>		B3H0322	08/16/2013	<i>08/16/13 20:19</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>61.5 %</i>		<i>48 - 121</i>		B3H0322	08/16/2013	<i>08/16/13 20:19</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>91.5 %</i>		<i>58 - 142</i>		B3H0322	08/16/2013	<i>08/16/13 20:19</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>70.3 %</i>		<i>27 - 151</i>		B3H0322	08/16/2013	<i>08/16/13 20:19</i>	



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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

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Reported : 08/27/2013

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3H0308 - MSVOAW_LL

Blank (B3H0308-BLK1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1,1,2-Tetrachloroethane	ND	0.50				NR			
1,1,1-Trichloroethane	ND	0.50				NR			
1,1,2,2-Tetrachloroethane	ND	0.50				NR			
1,1,2-Trichloroethane	ND	0.50				NR			
1,1-Dichloroethane	ND	0.50				NR			
1,1-Dichloroethene	ND	0.50				NR			
1,1-Dichloropropene	ND	0.50				NR			
1,2,3-Trichloropropane	ND	0.50				NR			
1,2,3-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trimethylbenzene	ND	0.50				NR			
1,2-Dibromo-3-chloropropane	ND	0.50				NR			
1,2-Dibromoethane	ND	0.50				NR			
1,2-Dichlorobenzene	ND	0.50				NR			
1,2-Dichloroethane	ND	0.50				NR			
1,2-Dichloropropane	ND	0.50				NR			
1,3,5-Trimethylbenzene	ND	0.50				NR			
1,3-Dichlorobenzene	ND	0.50				NR			
1,3-Dichloropropane	ND	0.50				NR			
1,4-Dichlorobenzene	ND	0.50				NR			
2,2-Dichloropropane	ND	0.50				NR			
2-Chlorotoluene	ND	0.50				NR			
4-Chlorotoluene	ND	0.50				NR			
4-Isopropyltoluene	ND	0.50				NR			
Benzene	ND	0.50				NR			
Bromobenzene	ND	0.50				NR			
Bromodichloromethane	ND	0.50				NR			
Bromoform	ND	0.50				NR			
Bromomethane	ND	0.50				NR			
Carbon tetrachloride	ND	0.50				NR			
Chlorobenzene	ND	0.50				NR			
Chloroethane	ND	0.50				NR			
Chloroform	ND	0.50				NR			
Chloromethane	ND	0.50				NR			
cis-1,2-Dichloroethene	ND	0.50				NR			
cis-1,3-Dichloropropene	ND	0.50				NR			
Dibromochloromethane	ND	0.50				NR			
Dibromomethane	ND	0.50				NR			
Dichlorodifluoromethane	ND	0.50				NR			



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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 08/27/2013

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

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

Batch B3H0308 - MSVOAW_LL (continued)

Blank (B3H0308-BLK1) - Continued

Prepared: 8/16/2013 Analyzed: 8/16/2013

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	23.15		25.0000		92.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.45		25.0000		97.8	70 - 130			
Surrogate: Dibromofluoromethane	24.95		25.0000		99.8	70 - 130			
Surrogate: Toluene-d8	23.45		25.0000		93.8	70 - 130			

LCS (B3H0308-BS1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	19.0800		20.0000		95.4	70 - 130			
Benzene	38.9300		40.0000		97.3	70 - 130			
Chlorobenzene	19.4000		20.0000		97.0	70 - 130			
MTBE	20.1700		20.0000		101	70 - 130			
Toluene	37.1400		40.0000		92.8	70 - 130			
Trichloroethene	19.1400		20.0000		95.7	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	22.26		25.0000		89.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.01		25.0000		100	70 - 130			
Surrogate: Dibromofluoromethane	23.20		25.0000		92.8	70 - 130			
Surrogate: Toluene-d8	23.02		25.0000		92.1	70 - 130			

LCS Dup (B3H0308-BSD1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	19.2200		20.0000		96.1	70 - 130	0.731	20	
Benzene	38.5800		40.0000		96.4	70 - 130	0.903	20	
Chlorobenzene	18.8900		20.0000		94.4	70 - 130	2.66	20	
MTBE	19.8400		20.0000		99.2	70 - 130	1.65	20	
Toluene	36.9900		40.0000		92.5	70 - 130	0.405	20	



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Project Number : RAYTHEON MAIN, 532.30

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Reported : 08/27/2013

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

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

Batch B3H0308 - MSVOAW_LL (continued)

LCS Dup (B3H0308-BSD1) - Continued

Prepared: 8/16/2013 Analyzed: 8/16/2013

Trichloroethene	18.9100		20.0000		94.6	70 - 130	1.21	20	
Surrogate: 1,2-Dichloroethane-d4	22.18		25.0000		88.7	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.23		25.0000		101	70 - 130			
Surrogate: Dibromofluoromethane	23.82		25.0000		95.3	70 - 130			
Surrogate: Toluene-d8	23.83		25.0000		95.3	70 - 130			

Batch B3H0320 - MSVOAW_LL

Blank (B3H0320-BLK1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1,1,2-Tetrachloroethane	ND	0.50		NR
1,1,1-Trichloroethane	ND	0.50		NR
1,1,2,2-Tetrachloroethane	ND	0.50		NR
1,1,2-Trichloroethane	ND	0.50		NR
1,1-Dichloroethane	ND	0.50		NR
1,1-Dichloroethene	ND	0.50		NR
1,1-Dichloropropene	ND	0.50		NR
1,2,3-Trichloropropane	ND	0.50		NR
1,2,3-Trichlorobenzene	ND	0.50		NR
1,2,4-Trichlorobenzene	ND	0.50		NR
1,2,4-Trimethylbenzene	ND	0.50		NR
1,2-Dibromo-3-chloropropane	ND	0.50		NR
1,2-Dibromoethane	ND	0.50		NR
1,2-Dichlorobenzene	ND	0.50		NR
1,2-Dichloroethane	ND	0.50		NR
1,2-Dichloropropane	ND	0.50		NR
1,3,5-Trimethylbenzene	ND	0.50		NR
1,3-Dichlorobenzene	ND	0.50		NR
1,3-Dichloropropane	ND	0.50		NR
1,4-Dichlorobenzene	ND	0.50		NR
2,2-Dichloropropane	ND	0.50		NR
2-Chlorotoluene	ND	0.50		NR
4-Chlorotoluene	ND	0.50		NR
4-Isopropyltoluene	ND	0.50		NR
Benzene	ND	0.50		NR
Bromobenzene	ND	0.50		NR
Bromodichloromethane	ND	0.50		NR
Bromoform	ND	0.50		NR
Bromomethane	ND	0.50		NR
Carbon tetrachloride	ND	0.50		NR
Chlorobenzene	ND	0.50		NR
Chloroethane	ND	0.50		NR



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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 08/27/2013

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

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

Batch B3H0320 - MSVOAW_LL (continued)

Blank (B3H0320-BLK1) - Continued

Prepared: 8/16/2013 Analyzed: 8/16/2013

Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,2-Dichloroethene	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Dibromomethane	ND	0.50			NR				
Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	22.38		25.0000		89.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.22		25.0000		96.9	70 - 130			
Surrogate: Dibromofluoromethane	24.06		25.0000		96.2	70 - 130			
Surrogate: Toluene-d8	24.24		25.0000		97.0	70 - 130			

LCS (B3H0320-BS1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	23.4300	0.50	20.0000		117	70 - 130			
Benzene	45.2300	0.50	40.0000		113	70 - 130			
Chlorobenzene	22.4600	0.50	20.0000		112	70 - 130			
MTBE	21.7900	0.50	20.0000		109	70 - 130			
Toluene	44.7300	0.50	40.0000		112	70 - 130			
Trichloroethene	23.5900	0.50	20.0000		118	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	22.22		25.0000		88.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.22		25.0000		101	70 - 130			
Surrogate: Dibromofluoromethane	23.74		25.0000		95.0	70 - 130			
Surrogate: Toluene-d8	24.97		25.0000		99.9	70 - 130			



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 : 08/27/2013

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

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

Batch B3H0320 - MSVOAW_LL (continued)

LCS Dup (B3H0320-BSD1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	23.9100	0.50	20.0000		120	70 - 130	2.03	20	
Benzene	46.7300	0.50	40.0000		117	70 - 130	3.26	20	
Chlorobenzene	22.2200	0.50	20.0000		111	70 - 130	1.07	20	
MTBE	23.2100	0.50	20.0000		116	70 - 130	6.31	20	
Toluene	46.0900	0.50	40.0000		115	70 - 130	2.99	20	
Trichloroethene	23.9600	0.50	20.0000		120	70 - 130	1.56	20	

Surrogate: 1,2-Dichloroethane-d4	22.22		25.0000		88.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.76		25.0000		99.0	70 - 130			
Surrogate: Dibromofluoromethane	23.27		25.0000		93.1	70 - 130			
Surrogate: Toluene-d8	25.05		25.0000		100	70 - 130			

Matrix Spike (B3H0320-MS1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	20.9500	0.50	20.0000	ND	105	70 - 130			
Benzene	41.1000	0.50	40.0000	ND	103	70 - 130			
Chlorobenzene	19.8000	0.50	20.0000	ND	99.0	70 - 130			
MTBE	20.9300	0.50	20.0000	ND	105	70 - 130			
Toluene	40.4200	0.50	40.0000	ND	101	70 - 130			
Trichloroethene	21.1700	0.50	20.0000	ND	106	70 - 130			

Surrogate: 1,2-Dichloroethane-d4	21.98		25.0000		87.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.73		25.0000		98.9	70 - 130			
Surrogate: Dibromofluoromethane	22.73		25.0000		90.9	70 - 130			
Surrogate: Toluene-d8	24.58		25.0000		98.3	70 - 130			

Matrix Spike Dup (B3H0320-MSD1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	22.1700	0.50	20.0000	ND	111	70 - 130	5.66	20	
Benzene	43.5800	0.50	40.0000	ND	109	70 - 130	5.86	20	
Chlorobenzene	20.8500	0.50	20.0000	ND	104	70 - 130	5.17	20	
MTBE	21.7400	0.50	20.0000	ND	109	70 - 130	3.80	20	
Toluene	42.6800	0.50	40.0000	ND	107	70 - 130	5.44	20	
Trichloroethene	22.3200	0.50	20.0000	ND	112	70 - 130	5.29	20	

Surrogate: 1,2-Dichloroethane-d4	22.62		25.0000		90.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.79		25.0000		99.2	70 - 130			
Surrogate: Dibromofluoromethane	23.65		25.0000		94.6	70 - 130			
Surrogate: Toluene-d8	24.67		25.0000		98.7	70 - 130			



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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 : 08/27/2013

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

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

Batch B3H0324 - MSSEMI

Blank (B3H0324-BLK1)

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	74.51		100.000		74.5	37 - 93			
Surrogate: 2-Fluorobiphenyl	80.85		100.000		80.8	51 - 100			
Surrogate: 4-Terphenyl-d14	101.6		100.000		102	58 - 113			
Surrogate: Nitrobenzene-d5	83.70		100.000		83.7	39 - 95			

LCS (B3H0324-BS1)

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	98.2900	2.0	100.000		98.3	70 - 130			
Surrogate: 1,2-Dichlorobenzene-d4	46.90		100.000		46.9	37 - 93			
Surrogate: 2-Fluorobiphenyl	65.79		100.000		65.8	51 - 100			
Surrogate: 4-Terphenyl-d14	99.38		100.000		99.4	58 - 113			
Surrogate: Nitrobenzene-d5	65.86		100.000		65.9	39 - 95			

Matrix Spike (B3H0324-MS1)

Source: 1302423-02

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	183.910	2.0	100.000	80.7000	103	70 - 130			
Surrogate: 1,2-Dichlorobenzene-d4	58.36		100.000		58.4	37 - 93			
Surrogate: 2-Fluorobiphenyl	71.58		100.000		71.6	51 - 100			
Surrogate: 4-Terphenyl-d14	100.6		100.000		101	58 - 113			
Surrogate: Nitrobenzene-d5	77.17		100.000		77.2	39 - 95			

Matrix Spike Dup (B3H0324-MSD1)

Source: 1302423-02

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	184.230	2.0	100.000	80.7000	104	70 - 130	0.174	20	
Surrogate: 1,2-Dichlorobenzene-d4	43.37		100.000		43.4	37 - 93			
Surrogate: 2-Fluorobiphenyl	58.76		100.000		58.8	51 - 100			
Surrogate: 4-Terphenyl-d14	95.47		100.000		95.5	58 - 113			
Surrogate: Nitrobenzene-d5	58.71		100.000		58.7	39 - 95			



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Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 08/27/2013

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

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

Batch B3H0322 - MSSEMI

Blank (B3H0322-BLK1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	ND	0.20		NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.6994		1.00000	69.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7418		1.00000	74.2	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9934		1.00000	99.3	58 - 142			
Surrogate: Nitrobenzene-d5	0.7397		1.00000	74.0	27 - 151			

LCS (B3H0322-BS1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	1.07353	0.20	1.00000	107	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.5439		1.00000	54.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.6043		1.00000	60.4	48 - 121			
Surrogate: 4-Terphenyl-d14	0.8272		1.00000	82.7	58 - 142			
Surrogate: Nitrobenzene-d5	0.6237		1.00000	62.4	27 - 151			

Matrix Spike (B3H0322-MS1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	0.968860	0.20	1.00000	ND	96.9	58 - 151		
Surrogate: 1,2-Dichlorobenzene-d4	0.6139		1.00000	61.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.6664		1.00000	66.6	48 - 121			
Surrogate: 4-Terphenyl-d14	0.8521		1.00000	85.2	58 - 142			
Surrogate: Nitrobenzene-d5	0.7180		1.00000	71.8	27 - 151			

Matrix Spike Dup (B3H0322-MSD1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	0.914270	0.20	1.00000	ND	91.4	58 - 151	5.80	20
Surrogate: 1,2-Dichlorobenzene-d4	0.5894		1.00000	58.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.6375		1.00000	63.8	48 - 121			
Surrogate: 4-Terphenyl-d14	0.7948		1.00000	79.5	58 - 142			
Surrogate: Nitrobenzene-d5	0.6950		1.00000	69.5	27 - 151			



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 : 08/27/2013

Notes and Definitions

D6 Sample required dilution due to high concentration of target analyte.

ND Analyte not detected at or above reporting limit

PQL Practical Quantitation Limit

MDL Method Detection Limit

NR Not Reported

RPD Relative Percent Difference

CA1 CA-NELAP (CDPH)

CA2 CA-ELAP (CDPH)

OR1 OR-NELAP (OSPHL)

TX1 TX-NELAP (TCEQ)

- 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.

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 8/12-9/13/13 PAGE 1 OF 2

PROJECT NAME		PROJECT No./TASK No.		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION			
RAYTHEON MAIN		532.30										ATL			
PROJECT MANAGER Chris Ross		Phone No. 858-455-6500										Attn:			
QA MANAGER Steve Netto		Fax No. 858-455-6533										Rachelle Arada			
SAMPLER (SIGNATURE)		SAMPLER (PRINTED)													
<i>EJH</i>		ERIN HUNTER													
<i>Shay L. Kappus</i>		SHAYNE KAPPUS													
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION		40 ml VOA	1 L Amber	8260B VOCs	8270 STM 1,4-Dioxane	8270 MDD 1,4-Dioxane	ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S	SPECIAL HANDLING	REMARKS
		Date	Time	Soil	Ground-water	Surface water	Lab H2O								
1302423 - 1	TB-081213	8/12/13	1345												
- 2	EW-01		1405	X						X				X	
- 3	MW-21		1410	X						X	X			X	
- 4	MW-32A	8/13/13	1130	X						X				X	
- 5	MW-32C		1535	X						X				X	
- 6	MW-32B		1705	X						X				X	
Total number of Containers per analysis:														175	
Total No. of Containers:														20	

Relinquished by: <i>[Signature]</i> Date: <u>8-13-13</u> Time: <u>1710</u> Company: <u>H+A</u>		Received by: <i>[Signature]</i> Date: <u>8-13-13</u> Time: <u>1710</u> Company: <u>Advanced Tech Labs</u>		INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.		Shipment Method: <u>Courier</u> Send Results to: <u>Steve Netto</u> ☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300	
Relinquished by: <i>[Signature]</i> Date: <u>8-13-13</u> Time: <u>1813</u> Company: <u>Advanced Tech Labs</u>		Received by: <i>[Signature]</i> Date: <u>8/13/13</u> Time: <u>1813</u> Company: <u>ATL</u>		Sample Receipt: ☐ No. of containers correct ☐ custody seals secure		Temp. @ receipt <u>22.25</u> °C ☐ received good condition/cold ☐ conforms to COC document	

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 8/13/13 PAGE 2 OF 2

PROJECT NAME		PROJECT No./TASK No.		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION						
Raytheon Main		532.30										ATL						
PROJECT MANAGER Chris Ross		Phone No. 855-455-6500										Attn: Rachelle Arada						
QA MANAGER Steve Netto		Fax No. 858-455-5533																
SAMPLER (SIGNATURE)		SAMPLER (PRINTED)																
		DANIEL MORA																
		Arielle Ferber																
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION		40 ml VOA	1 L Amber	8206B VOCs	8270 SIM 1,4-Dioxane	8270 MOD 1,4-Dioxane	0-10	10-100	100-1,000	>1,000	Standard TAT	REMARKS
		Date	Time	Soil	Ground water	Surface water	Lab H2O											
1302423 - 7	MW-20	8/13/13	10:45	X				X					X				X	
	↓		↓	X				X					X				X	
	- 8 MW-3AC		14:00	X				X					X				X	
	↓		↓	X				X					X				X	
	- 9 MW-3AA		14:30	X				X					X				X	
	↓		↓	X				X					X				X	
	- 10 MW-3AB		15:55	X				X						X			X	
	↓		↓	X				X									X	
	- 11 MW-28		10:43	X				X					X				X	
	↓		↓	X				X									X	
Total number of Containers per analysis:								155	Total No. of Containers: 20/42									
Relinquished by:		Date	Received by:	Date	INSTRUCTIONS										Shipment Method: Courier			
Arielle Ferber		8/13/13		8-13-13	1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness.										Send Results to: Steve Netto			
H + A, Inc.		Time 17:13	Advanced Tech Labs	Time 17:13	2. Complete in ballpoint pen. Draw one line through errors, initial and date correction.										☐ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500			
Company			Company		3. Indicate number of sample containers in analysis request space; indicate choice with ✓ or x.										☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888			
Relinquished by:		Date	Received by:	Date	4. Note applicable preservatives, special instructions, and deviations from typical environmental samples.										☒ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300			
		8-8-13		8/13/13	5. Consult project QA documents for specific instructions.										Send invoice to San Diego, CA Attn: Accounts Payable			
Advanced Tech Labs		Time 18:13	Company	Time 18/13	Sample Receipt:													
Company					☐ No. of containers correct										☐ received good condition/cold			
					☐ custody seals secure										☐ conforms to COC document			

August 22, 2013

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



Re: ATL Work Order Number : 1302441
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on August 14, 2013 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,

Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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 : 08/22/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-081413	1302441-01	Lab H2O	8/14/13 8:00	8/14/13 17:05
MW-35C	1302441-02	Groundwater	8/14/13 10:25	8/14/13 17:05
MW-37	1302441-03	Groundwater	8/14/13 11:50	8/14/13 17:05
MW-33	1302441-04	Groundwater	8/14/13 14:40	8/14/13 17:05
MW-31	1302441-05	Groundwater	8/14/13 15:45	8/14/13 17:05
RB-08142013	1302441-06	Lab H2O	8/14/13 9:00	8/14/13 17:05
MW-18	1302441-07	Groundwater	8/14/13 10:05	8/14/13 17:05
MW-9	1302441-08	Groundwater	8/14/13 15:30	8/14/13 17:05
MW-15	1302441-09	Groundwater	8/14/13 14:40	8/14/13 17:05
RB-08142013B	1302441-10	Lab H2O	8/14/13 16:05	8/14/13 17:05
MW-16	1302441-11	Groundwater	8/14/13 16:52	8/14/13 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 : 08/22/2013

Client Sample ID TB-081413

Lab ID: 1302441-01

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
2-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
4-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Benzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Bromobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Bromodichloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Bromoform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Bromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Carbon tetrachloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Chlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Chloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Chloroform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Chloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	



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 : 08/22/2013

Client Sample ID TB-081413

Lab ID: 1302441-01

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Dibromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Ethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Isopropylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
m,p-Xylene	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Methylene chloride	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
n-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
n-Propylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Naphthalene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
o-Xylene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
sec-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Styrene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
tert-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Tetrachloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Toluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Trichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Vinyl chloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:35	
Surrogate: 1,2-Dichloroethane-d4	91.4 %	70 - 130			B3H0320	08/16/2013	08/16/13 17:35	
Surrogate: 4-Bromofluorobenzene	96.9 %	70 - 130			B3H0320	08/16/2013	08/16/13 17:35	
Surrogate: Dibromofluoromethane	99.8 %	70 - 130			B3H0320	08/16/2013	08/16/13 17:35	
Surrogate: Toluene-d8	93.8 %	70 - 130			B3H0320	08/16/2013	08/16/13 17:35	



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 : 08/22/2013

Client Sample ID MW-35C

Lab ID: 1302441-02

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
2-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
4-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Benzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Bromobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Bromodichloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Bromoform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Bromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Carbon tetrachloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Chlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Chloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Chloroform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Chloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	



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 : 08/22/2013

Client Sample ID MW-35C

Lab ID: 1302441-02

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Dibromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Ethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Isopropylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
m,p-Xylene	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Methylene chloride	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
n-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
n-Propylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Naphthalene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
o-Xylene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
sec-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Styrene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
tert-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Tetrachloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Toluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Trichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
Vinyl chloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 17:58	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.8 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 17:58</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.8 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 17:58</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.7 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 17:58</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.1 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 17:58</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 : 08/22/2013

Client Sample ID MW-35C

Lab ID: 1302441-02

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 16:20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>64.5 %</i>	<i>47 - 117</i>			B3H0322	08/16/2013	<i>08/16/13 16:20</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.4 %</i>	<i>48 - 121</i>			B3H0322	08/16/2013	<i>08/16/13 16:20</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>95.9 %</i>	<i>58 - 142</i>			B3H0322	08/16/2013	<i>08/16/13 16:20</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>75.7 %</i>	<i>27 - 151</i>			B3H0322	08/16/2013	<i>08/16/13 16:20</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 : 08/22/2013

Client Sample ID MW-37

Lab ID: 1302441-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
2-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
4-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Benzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Bromobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Bromodichloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Bromoform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Bromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Carbon tetrachloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Chlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Chloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Chloroform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Chloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	



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 : 08/22/2013

Client Sample ID MW-37

Lab ID: 1302441-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Dibromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Ethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Isopropylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
m,p-Xylene	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Methylene chloride	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
n-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
n-Propylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Naphthalene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
o-Xylene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
sec-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Styrene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
tert-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Tetrachloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Toluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Trichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Vinyl chloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 20:44	
Surrogate: 1,2-Dichloroethane-d4	89.0 %	70 - 130			B3H0320	08/16/2013	08/16/13 20:44	
Surrogate: 4-Bromofluorobenzene	94.4 %	70 - 130			B3H0320	08/16/2013	08/16/13 20:44	
Surrogate: Dibromofluoromethane	96.1 %	70 - 130			B3H0320	08/16/2013	08/16/13 20:44	
Surrogate: Toluene-d8	87.5 %	70 - 130			B3H0320	08/16/2013	08/16/13 20:44	



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 : 08/22/2013

Client Sample ID MW-37

Lab ID: 1302441-03

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 18:59	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>69.2 %</i>	<i>47 - 117</i>			B3H0322	08/16/2013	<i>08/16/13 18:59</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.2 %</i>	<i>48 - 121</i>			B3H0322	08/16/2013	<i>08/16/13 18:59</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>94.0 %</i>	<i>58 - 142</i>			B3H0322	08/16/2013	<i>08/16/13 18:59</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>84.8 %</i>	<i>27 - 151</i>			B3H0322	08/16/2013	<i>08/16/13 18:59</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 : 08/22/2013

Client Sample ID MW-33

Lab ID: 1302441-04

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,1-Dichloroethene	7.2	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
2-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
4-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Benzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Bromobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Bromodichloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Bromoform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Bromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Carbon tetrachloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Chlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Chloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Chloroform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Chloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	



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 : 08/22/2013

Client Sample ID MW-33

Lab ID: 1302441-04

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Dibromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Ethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Isopropylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
m,p-Xylene	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Methylene chloride	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
n-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
n-Propylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Naphthalene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
o-Xylene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
sec-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Styrene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
tert-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Tetrachloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Toluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Trichloroethene	0.90	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
Vinyl chloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:07	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.6 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:07</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.8 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:07</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.4 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:07</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.0 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:07</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 : 08/22/2013

Client Sample ID MW-33

Lab ID: 1302441-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 14:35	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>72.2 %</i>	<i>47 - 117</i>			B3H0322	08/16/2013	<i>08/16/13 14:35</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.8 %</i>	<i>48 - 121</i>			B3H0322	08/16/2013	<i>08/16/13 14:35</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>101 %</i>	<i>58 - 142</i>			B3H0322	08/16/2013	<i>08/16/13 14:35</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>78.5 %</i>	<i>27 - 151</i>			B3H0322	08/16/2013	<i>08/16/13 14:35</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 : 08/22/2013

Client Sample ID MW-31

Lab ID: 1302441-05

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,1-Dichloroethane	2.3	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,1-Dichloroethene	270	2.5	NA	5	B3H0332	08/19/2013	08/19/13 17:14	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
2-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
4-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Benzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Bromobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Bromodichloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Bromoform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Bromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Carbon tetrachloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Chlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Chloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Chloroform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Chloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
cis-1,2-Dichloroethene	0.85	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	



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 : 08/22/2013

Client Sample ID MW-31

Lab ID: 1302441-05

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Dibromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Ethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Isopropylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
m,p-Xylene	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Methylene chloride	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
n-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
n-Propylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Naphthalene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
o-Xylene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
sec-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Styrene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
tert-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Tetrachloroethene	0.55	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Toluene	0.70	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Trichloroethene	11	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
Vinyl chloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 21:31	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.6 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 17:14</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.9 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:31</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.3 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 17:14</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.0 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:31</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.4 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:31</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.2 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 17:14</i>	
<i>Surrogate: Toluene-d8</i>	<i>85.3 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 17:14</i>	
<i>Surrogate: Toluene-d8</i>	<i>87.6 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 21:31</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 : 08/22/2013

Client Sample ID MW-31

Lab ID: 1302441-05

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	4.5	0.20	NA	1	B3H0322	08/16/2013	08/16/13 21:12	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>65.7 %</i>	<i>47 - 117</i>			B3H0322	08/16/2013	<i>08/16/13 21:12</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.2 %</i>	<i>48 - 121</i>			B3H0322	08/16/2013	<i>08/16/13 21:12</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>112 %</i>	<i>58 - 142</i>			B3H0322	08/16/2013	<i>08/16/13 21:12</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>88.3 %</i>	<i>27 - 151</i>			B3H0322	08/16/2013	<i>08/16/13 21:12</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 : 08/22/2013

Client Sample ID RB-08142013

Lab ID: 1302441-06

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
2-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
4-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Benzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Bromobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Bromodichloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Bromoform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Bromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Carbon tetrachloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Chlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Chloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Chloroform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Chloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	



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 : 08/22/2013

Client Sample ID RB-08142013

Lab ID: 1302441-06

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Dibromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Ethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Isopropylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
m,p-Xylene	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Methylene chloride	3.7	1.0	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
n-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
n-Propylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Naphthalene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
o-Xylene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
sec-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Styrene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
tert-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Tetrachloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Toluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Trichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
Vinyl chloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 13:41	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.4 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 13:41</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.8 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 13:41</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>96.8 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 13:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>90.7 %</i>	<i>70 - 130</i>			B3H0332	08/19/2013	<i>08/19/13 13:41</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 : 08/22/2013

Client Sample ID MW-18

Lab ID: 1302441-07

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
2-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
4-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Benzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Bromobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Bromodichloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Bromoform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Bromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Carbon tetrachloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Chlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Chloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Chloroform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Chloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	



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 : 08/22/2013

Client Sample ID MW-18

Lab ID: 1302441-07

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Dibromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Ethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Isopropylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
m,p-Xylene	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Methylene chloride	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
n-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
n-Propylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Naphthalene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
o-Xylene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
sec-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Styrene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
tert-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Tetrachloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Toluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Trichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Trichlorofluoromethane	2.2	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
Vinyl chloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:18	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.3 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 22:18</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.0 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 22:18</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>96.8 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 22:18</i>	
<i>Surrogate: Toluene-d8</i>	<i>94.6 %</i>	<i>70 - 130</i>			B3H0320	08/16/2013	<i>08/16/13 22:18</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 : 08/22/2013

Client Sample ID MW-18

Lab ID: 1302441-07

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 19:26	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>70.4 %</i>	<i>47 - 117</i>			B3H0322	08/16/2013	<i>08/16/13 19:26</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77.0 %</i>	<i>48 - 121</i>			B3H0322	08/16/2013	<i>08/16/13 19:26</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>111 %</i>	<i>58 - 142</i>			B3H0322	08/16/2013	<i>08/16/13 19:26</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>88.2 %</i>	<i>27 - 151</i>			B3H0322	08/16/2013	<i>08/16/13 19:26</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 : 08/22/2013

Client Sample ID MW-9

Lab ID: 1302441-08

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,1-Dichloroethene	0.59	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
2-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
4-Chlorotoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Benzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Bromobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Bromodichloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Bromoform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Bromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Carbon tetrachloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Chlorobenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Chloroethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Chloroform	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Chloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	



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 : 08/22/2013

Client Sample ID MW-9

Lab ID: 1302441-08

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Dibromomethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Ethylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Isopropylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
m,p-Xylene	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Methylene chloride	ND	1.0	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
n-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
n-Propylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Naphthalene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
o-Xylene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
sec-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Styrene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
tert-Butylbenzene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Tetrachloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Toluene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Trichloroethene	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Vinyl chloride	ND	0.50	NA	1	B3H0320	08/16/2013	08/16/13 22:42	
Surrogate: 1,2-Dichloroethane-d4	88.8 %	70 - 130			B3H0320	08/16/2013	08/16/13 22:42	
Surrogate: 4-Bromofluorobenzene	93.8 %	70 - 130			B3H0320	08/16/2013	08/16/13 22:42	
Surrogate: Dibromofluoromethane	95.9 %	70 - 130			B3H0320	08/16/2013	08/16/13 22:42	
Surrogate: Toluene-d8	82.9 %	70 - 130			B3H0320	08/16/2013	08/16/13 22:42	



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 : 08/22/2013

Client Sample ID MW-9

Lab ID: 1302441-08

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0322	08/16/2013	08/16/13 19:52	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.8 %</i>	<i>47 - 117</i>			B3H0322	08/16/2013	<i>08/16/13 19:52</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>76.1 %</i>	<i>48 - 121</i>			B3H0322	08/16/2013	<i>08/16/13 19:52</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>105 %</i>	<i>58 - 142</i>			B3H0322	08/16/2013	<i>08/16/13 19:52</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>87.3 %</i>	<i>27 - 151</i>			B3H0322	08/16/2013	<i>08/16/13 19:52</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 : 08/22/2013

Client Sample ID MW-15

Lab ID: 1302441-09

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
2-Chlorotoluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
4-Chlorotoluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Benzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Bromobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Bromodichloromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Bromoform	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Bromomethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Carbon tetrachloride	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Chlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Chloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Chloroform	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Chloromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	



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 : 08/22/2013

Client Sample ID MW-15

Lab ID: 1302441-09

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Dibromomethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Ethylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Isopropylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
m,p-Xylene	ND	1.0	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Methylene chloride	ND	1.0	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
n-Butylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
n-Propylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Naphthalene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
o-Xylene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
sec-Butylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Styrene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
tert-Butylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Tetrachloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Toluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Trichloroethene	2.4	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Trichlorofluoromethane	8.6	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
Vinyl chloride	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 16:18	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>87.0 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 16:18</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>110 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 16:18</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>88.1 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 16:18</i>	
<i>Surrogate: Toluene-d8</i>	<i>86.4 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 16:18</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 : 08/22/2013

Client Sample ID RB-08142013B

Lab ID: 1302441-10

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
2-Chlorotoluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
4-Chlorotoluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Benzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Bromobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Bromodichloromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Bromoform	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Bromomethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Carbon tetrachloride	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Chlorobenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Chloroethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Chloroform	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Chloromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	



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 : 08/22/2013

Client Sample ID RB-08142013B

Lab ID: 1302441-10

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Dibromomethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Ethylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Isopropylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
m,p-Xylene	ND	1.0	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Methylene chloride	3.4	1.0	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
n-Butylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
n-Propylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Naphthalene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
o-Xylene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
sec-Butylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Styrene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
tert-Butylbenzene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Tetrachloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Toluene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Trichloroethene	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
Vinyl chloride	ND	0.50	NA	1	B3H0363	08/21/2013	08/21/13 17:30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>85.6 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>107 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>85.4 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:30</i>	
<i>Surrogate: Toluene-d8</i>	<i>85.1 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:30</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 : 08/22/2013

Client Sample ID MW-16

Lab ID: 1302441-11

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,1,1-Trichloroethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,1,2,2-Tetrachloroethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,1,2-Trichloroethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,1-Dichloroethane	5.2	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,1-Dichloroethene	770	5.0	NA	10	B3H0363	08/21/2013	08/21/13 17:54	
1,1-Dichloropropene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2,3-Trichloropropane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2,3-Trichlorobenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2,4-Trichlorobenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2,4-Trimethylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2-Dibromo-3-chloropropane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2-Dibromoethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2-Dichlorobenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2-Dichloroethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,2-Dichloropropane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,3,5-Trimethylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,3-Dichlorobenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,3-Dichloropropane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
1,4-Dichlorobenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
2,2-Dichloropropane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
2-Chlorotoluene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
4-Chlorotoluene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
4-Isopropyltoluene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Benzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Bromobenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Bromodichloromethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Bromoform	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Bromomethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Carbon tetrachloride	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Chlorobenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Chloroethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Chloroform	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Chloromethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
cis-1,2-Dichloroethene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
cis-1,3-Dichloropropene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	



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 : 08/22/2013

Client Sample ID MW-16

Lab ID: 1302441-11

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Dibromomethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Dichlorodifluoromethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Ethylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Hexachlorobutadiene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Isopropylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
m,p-Xylene	ND	2.5	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Methylene chloride	ND	2.5	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
n-Butylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
n-Propylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Naphthalene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
o-Xylene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
sec-Butylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Styrene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
tert-Butylbenzene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Tetrachloroethene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Toluene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
trans-1,2-Dichloroethene	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Trichloroethene	5.7	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Trichlorofluoromethane	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
Vinyl chloride	ND	1.2	NA	2.5	B3H0363	08/21/2013	08/21/13 21:09	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>84.1 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:54</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>78.5 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 21:09</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:54</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 21:09</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>80.4 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 21:09</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>82.8 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:54</i>	
<i>Surrogate: Toluene-d8</i>	<i>78.7 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 21:09</i>	
<i>Surrogate: Toluene-d8</i>	<i>80.5 %</i>	<i>70 - 130</i>			B3H0363	08/21/2013	<i>08/21/13 17:54</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 : 08/22/2013

Client Sample ID MW-16

Lab ID: 1302441-11

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	36	2.0	NA	1	B3H0324	08/16/2013	08/20/13 13:33	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>79.5 %</i>		<i>37 - 93</i>		B3H0324	08/16/2013	<i>08/20/13 13:33</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>87.3 %</i>		<i>51 - 100</i>		B3H0324	08/16/2013	<i>08/20/13 13:33</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>105 %</i>		<i>58 - 113</i>		B3H0324	08/16/2013	<i>08/20/13 13:33</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>90.4 %</i>		<i>39 - 95</i>		B3H0324	08/16/2013	<i>08/20/13 13:33</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 : 08/22/2013

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3H0320 - MSVOAW_LL

Blank (B3H0320-BLK1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1,1,2-Tetrachloroethane	ND	0.50				NR			
1,1,1-Trichloroethane	ND	0.50				NR			
1,1,2,2-Tetrachloroethane	ND	0.50				NR			
1,1,2-Trichloroethane	ND	0.50				NR			
1,1-Dichloroethane	ND	0.50				NR			
1,1-Dichloroethene	ND	0.50				NR			
1,1-Dichloropropene	ND	0.50				NR			
1,2,3-Trichloropropane	ND	0.50				NR			
1,2,3-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trimethylbenzene	ND	0.50				NR			
1,2-Dibromo-3-chloropropane	ND	0.50				NR			
1,2-Dibromoethane	ND	0.50				NR			
1,2-Dichlorobenzene	ND	0.50				NR			
1,2-Dichloroethane	ND	0.50				NR			
1,2-Dichloropropane	ND	0.50				NR			
1,3,5-Trimethylbenzene	ND	0.50				NR			
1,3-Dichlorobenzene	ND	0.50				NR			
1,3-Dichloropropane	ND	0.50				NR			
1,4-Dichlorobenzene	ND	0.50				NR			
2,2-Dichloropropane	ND	0.50				NR			
2-Chlorotoluene	ND	0.50				NR			
4-Chlorotoluene	ND	0.50				NR			
4-Isopropyltoluene	ND	0.50				NR			
Benzene	ND	0.50				NR			
Bromobenzene	ND	0.50				NR			
Bromodichloromethane	ND	0.50				NR			
Bromoform	ND	0.50				NR			
Bromomethane	ND	0.50				NR			
Carbon tetrachloride	ND	0.50				NR			
Chlorobenzene	ND	0.50				NR			
Chloroethane	ND	0.50				NR			
Chloroform	ND	0.50				NR			
Chloromethane	ND	0.50				NR			
cis-1,2-Dichloroethene	ND	0.50				NR			
cis-1,3-Dichloropropene	ND	0.50				NR			
Dibromochloromethane	ND	0.50				NR			
Dibromomethane	ND	0.50				NR			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/22/2013

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

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

Batch B3H0320 - MSVOAW_LL (continued)

Blank (B3H0320-BLK1) - Continued

Prepared: 8/16/2013 Analyzed: 8/16/2013

Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	22.38		25.0000		89.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.22		25.0000		96.9	70 - 130			
Surrogate: Dibromofluoromethane	24.06		25.0000		96.2	70 - 130			
Surrogate: Toluene-d8	24.24		25.0000		97.0	70 - 130			

LCS (B3H0320-BS1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	23.4300	0.50	20.0000		117	70 - 130			
Benzene	45.2300	0.50	40.0000		113	70 - 130			
Chlorobenzene	22.4600	0.50	20.0000		112	70 - 130			
MTBE	21.7900	0.50	20.0000		109	70 - 130			
Toluene	44.7300	0.50	40.0000		112	70 - 130			
Trichloroethene	23.5900	0.50	20.0000		118	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	22.22		25.0000		88.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.22		25.0000		101	70 - 130			
Surrogate: Dibromofluoromethane	23.74		25.0000		95.0	70 - 130			
Surrogate: Toluene-d8	24.97		25.0000		99.9	70 - 130			

LCS Dup (B3H0320-BSD1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	23.9100	0.50	20.0000		120	70 - 130	2.03	20	
Benzene	46.7300	0.50	40.0000		117	70 - 130	3.26	20	
Chlorobenzene	22.2200	0.50	20.0000		111	70 - 130	1.07	20	



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Reported : 08/22/2013

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

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

Batch B3H0320 - MSVOAW_LL (continued)

LCS Dup (B3H0320-BSD1) - Continued

Prepared: 8/16/2013 Analyzed: 8/16/2013

MTBE	23.2100	0.50	20.0000		116	70 - 130	6.31	20	
Toluene	46.0900	0.50	40.0000		115	70 - 130	2.99	20	
Trichloroethene	23.9600	0.50	20.0000		120	70 - 130	1.56	20	
Surrogate: 1,2-Dichloroethane-d4	22.22		25.0000		88.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.76		25.0000		99.0	70 - 130			
Surrogate: Dibromofluoromethane	23.27		25.0000		93.1	70 - 130			
Surrogate: Toluene-d8	25.05		25.0000		100	70 - 130			

Matrix Spike (B3H0320-MS1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	20.9500	0.50	20.0000	ND	105	70 - 130			
Benzene	41.1000	0.50	40.0000	ND	103	70 - 130			
Chlorobenzene	19.8000	0.50	20.0000	ND	99.0	70 - 130			
MTBE	20.9300	0.50	20.0000	ND	105	70 - 130			
Toluene	40.4200	0.50	40.0000	ND	101	70 - 130			
Trichloroethene	21.1700	0.50	20.0000	ND	106	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	21.98		25.0000		87.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.73		25.0000		98.9	70 - 130			
Surrogate: Dibromofluoromethane	22.73		25.0000		90.9	70 - 130			
Surrogate: Toluene-d8	24.58		25.0000		98.3	70 - 130			

Matrix Spike Dup (B3H0320-MSD1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	22.1700	0.50	20.0000	ND	111	70 - 130	5.66	20	
Benzene	43.5800	0.50	40.0000	ND	109	70 - 130	5.86	20	
Chlorobenzene	20.8500	0.50	20.0000	ND	104	70 - 130	5.17	20	
MTBE	21.7400	0.50	20.0000	ND	109	70 - 130	3.80	20	
Toluene	42.6800	0.50	40.0000	ND	107	70 - 130	5.44	20	
Trichloroethene	22.3200	0.50	20.0000	ND	112	70 - 130	5.29	20	
Surrogate: 1,2-Dichloroethane-d4	22.62		25.0000		90.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.79		25.0000		99.2	70 - 130			
Surrogate: Dibromofluoromethane	23.65		25.0000		94.6	70 - 130			
Surrogate: Toluene-d8	24.67		25.0000		98.7	70 - 130			

Batch B3H0332 - MSVOAW_LL

Blank (B3H0332-BLK1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR				
1,1,1-Trichloroethane	ND	0.50			NR				
1,1,2,2-Tetrachloroethane	ND	0.50			NR				
1,1,2-Trichloroethane	ND	0.50			NR				
1,1-Dichloroethane	ND	0.50			NR				



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

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

Batch B3H0332 - MSVOAW_LL (continued)

Blank (B3H0332-BLK1) - Continued

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR
Isopropylbenzene	ND	0.50			NR
m,p-Xylene	ND	1.0			NR
Methylene chloride	ND	1.0			NR
n-Butylbenzene	ND	0.50			NR



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

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

Batch B3H0332 - MSVOAW_LL (continued)

Blank (B3H0332-BLK1) - Continued

Prepared: 8/19/2013 Analyzed: 8/19/2013

n-Propylbenzene	ND	0.50		NR
Naphthalene	ND	0.50		NR
o-Xylene	ND	0.50		NR
sec-Butylbenzene	ND	0.50		NR
Styrene	ND	0.50		NR
tert-Butylbenzene	ND	0.50		NR
Tetrachloroethene	ND	0.50		NR
Toluene	ND	0.50		NR
trans-1,2-Dichloroethene	ND	0.50		NR
Trichloroethene	ND	0.50		NR
Trichlorofluoromethane	ND	0.50		NR
Vinyl chloride	ND	0.50		NR

Surrogate: 1,2-Dichloroethane-d4	22.16	25.0000	88.6	70 - 130
Surrogate: 4-Bromofluorobenzene	23.72	25.0000	94.9	70 - 130
Surrogate: Dibromofluoromethane	24.00	25.0000	96.0	70 - 130
Surrogate: Toluene-d8	22.65	25.0000	90.6	70 - 130

LCS (B3H0332-BS1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1-Dichloroethene	22.3900	0.50	20.0000	112	70 - 130
Benzene	44.7100	0.50	40.0000	112	70 - 130
Chlorobenzene	22.1000	0.50	20.0000	110	70 - 130
MTBE	21.5300	0.50	20.0000	108	70 - 130
Toluene	42.9900	0.50	40.0000	107	70 - 130
Trichloroethene	23.7200	0.50	20.0000	119	70 - 130

Surrogate: 1,2-Dichloroethane-d4	21.69	25.0000	86.8	70 - 130
Surrogate: 4-Bromofluorobenzene	24.44	25.0000	97.8	70 - 130
Surrogate: Dibromofluoromethane	22.81	25.0000	91.2	70 - 130
Surrogate: Toluene-d8	23.32	25.0000	93.3	70 - 130

LCS Dup (B3H0332-BSD1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1-Dichloroethene	22.7200	0.50	20.0000	114	70 - 130	1.46	20
Benzene	45.4500	0.50	40.0000	114	70 - 130	1.64	20
Chlorobenzene	22.2000	0.50	20.0000	111	70 - 130	0.451	20
MTBE	22.9300	0.50	20.0000	115	70 - 130	6.30	20
Toluene	44.6200	0.50	40.0000	112	70 - 130	3.72	20
Trichloroethene	23.5600	0.50	20.0000	118	70 - 130	0.677	20

Surrogate: 1,2-Dichloroethane-d4	22.14	25.0000	88.6	70 - 130
Surrogate: 4-Bromofluorobenzene	24.78	25.0000	99.1	70 - 130
Surrogate: Dibromofluoromethane	23.16	25.0000	92.6	70 - 130
Surrogate: Toluene-d8	24.41	25.0000	97.6	70 - 130



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

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

Batch B3H0363 - MSVOAW_LL

Blank (B3H0363-BLK1)

Prepared: 8/21/2013 Analyzed: 8/21/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR				
1,1,1-Trichloroethane	ND	0.50			NR				
1,1,2,2-Tetrachloroethane	ND	0.50			NR				
1,1,2-Trichloroethane	ND	0.50			NR				
1,1-Dichloroethane	ND	0.50			NR				
1,1-Dichloroethene	ND	0.50			NR				
1,1-Dichloropropene	ND	0.50			NR				
1,2,3-Trichloropropane	ND	0.50			NR				
1,2,3-Trichlorobenzene	ND	0.50			NR				
1,2,4-Trichlorobenzene	ND	0.50			NR				
1,2,4-Trimethylbenzene	ND	0.50			NR				
1,2-Dibromo-3-chloropropane	ND	0.50			NR				
1,2-Dibromoethane	ND	0.50			NR				
1,2-Dichlorobenzene	ND	0.50			NR				
1,2-Dichloroethane	ND	0.50			NR				
1,2-Dichloropropane	ND	0.50			NR				
1,3,5-Trimethylbenzene	ND	0.50			NR				
1,3-Dichlorobenzene	ND	0.50			NR				
1,3-Dichloropropane	ND	0.50			NR				
1,4-Dichlorobenzene	ND	0.50			NR				
2,2-Dichloropropane	ND	0.50			NR				
2-Chlorotoluene	ND	0.50			NR				
4-Chlorotoluene	ND	0.50			NR				
4-Isopropyltoluene	ND	0.50			NR				
Benzene	ND	0.50			NR				
Bromobenzene	ND	0.50			NR				
Bromodichloromethane	ND	0.50			NR				
Bromoform	ND	0.50			NR				
Bromomethane	ND	0.50			NR				
Carbon tetrachloride	ND	0.50			NR				
Chlorobenzene	ND	0.50			NR				
Chloroethane	ND	0.50			NR				
Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,2-Dichloroethene	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Dibromomethane	ND	0.50			NR				
Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				



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

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

Batch B3H0363 - MSVOAW_LL (continued)

Blank (B3H0363-BLK1) - Continued

Prepared: 8/21/2013 Analyzed: 8/21/2013

Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	22.11		25.0000		88.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	26.49		25.0000		106	70 - 130			
Surrogate: Dibromofluoromethane	22.04		25.0000		88.2	70 - 130			
Surrogate: Toluene-d8	21.61		25.0000		86.4	70 - 130			

LCS (B3H0363-BS1)

Prepared: 8/21/2013 Analyzed: 8/21/2013

1,1-Dichloroethene	21.7500	0.50	20.0000		109	70 - 130			
Benzene	41.2800	0.50	40.0000		103	70 - 130			
Chlorobenzene	20.6100	0.50	20.0000		103	70 - 130			
MTBE	21.6600	0.50	20.0000		108	70 - 130			
Toluene	47.2300	0.50	40.0000		118	70 - 130			
Trichloroethene	22.0100	0.50	20.0000		110	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	22.53		25.0000		90.1	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.99		25.0000		100	70 - 130			
Surrogate: Dibromofluoromethane	22.42		25.0000		89.7	70 - 130			
Surrogate: Toluene-d8	25.06		25.0000		100	70 - 130			

LCS Dup (B3H0363-BSD1)

Prepared: 8/21/2013 Analyzed: 8/21/2013

1,1-Dichloroethene	21.7600	0.50	20.0000		109	70 - 130	0.0460	20	
Benzene	39.8100	0.50	40.0000		99.5	70 - 130	3.63	20	
Chlorobenzene	20.2600	0.50	20.0000		101	70 - 130	1.71	20	
MTBE	22.8100	0.50	20.0000		114	70 - 130	5.17	20	
Toluene	44.8700	0.50	40.0000		112	70 - 130	5.12	20	
Trichloroethene	21.0900	0.50	20.0000		105	70 - 130	4.27	20	



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

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

Batch B3H0363 - MSVOAW_LL (continued)

LCS Dup (B3H0363-BSD1) - Continued

Prepared: 8/21/2013 Analyzed: 8/21/2013

Surrogate: 1,2-Dichloroethane-d4	21.94	25.0000	87.8	70 - 130
Surrogate: 4-Bromofluorobenzene	25.54	25.0000	102	70 - 130
Surrogate: Dibromofluoromethane	21.79	25.0000	87.2	70 - 130
Surrogate: Toluene-d8	24.37	25.0000	97.5	70 - 130



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

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

Batch B3H0324 - MSSEMI

Blank (B3H0324-BLK1)

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	ND	2.0		NR					
Surrogate: 1,2-Dichlorobenzene-d4	74.51		100.000	74.5	37 - 93				
Surrogate: 2-Fluorobiphenyl	80.85		100.000	80.8	51 - 100				
Surrogate: 4-Terphenyl-d14	101.6		100.000	102	58 - 113				
Surrogate: Nitrobenzene-d5	83.70		100.000	83.7	39 - 95				

LCS (B3H0324-BS1)

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	98.2900	2.0	100.000	98.3	70 - 130				
Surrogate: 1,2-Dichlorobenzene-d4	46.90		100.000	46.9	37 - 93				
Surrogate: 2-Fluorobiphenyl	65.79		100.000	65.8	51 - 100				
Surrogate: 4-Terphenyl-d14	99.38		100.000	99.4	58 - 113				
Surrogate: Nitrobenzene-d5	65.86		100.000	65.9	39 - 95				

Matrix Spike (B3H0324-MS1)

Source: 1302423-02

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	183.910	2.0	100.000	80.7000	103	70 - 130			
Surrogate: 1,2-Dichlorobenzene-d4	58.36		100.000	58.4	37 - 93				
Surrogate: 2-Fluorobiphenyl	71.58		100.000	71.6	51 - 100				
Surrogate: 4-Terphenyl-d14	100.6		100.000	101	58 - 113				
Surrogate: Nitrobenzene-d5	77.17		100.000	77.2	39 - 95				

Matrix Spike Dup (B3H0324-MSD1)

Source: 1302423-02

Prepared: 8/16/2013 Analyzed: 8/20/2013

1,4-Dioxane	184.230	2.0	100.000	80.7000	104	70 - 130	0.174	20	
Surrogate: 1,2-Dichlorobenzene-d4	43.37		100.000	43.4	37 - 93				
Surrogate: 2-Fluorobiphenyl	58.76		100.000	58.8	51 - 100				
Surrogate: 4-Terphenyl-d14	95.47		100.000	95.5	58 - 113				
Surrogate: Nitrobenzene-d5	58.71		100.000	58.7	39 - 95				



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/22/2013

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

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

Batch B3H0322 - MSSEMI

Blank (B3H0322-BLK1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.6994		1.00000	69.9	47 - 117				
Surrogate: 2-Fluorobiphenyl	0.7418		1.00000	74.2	48 - 121				
Surrogate: 4-Terphenyl-d14	0.9934		1.00000	99.3	58 - 142				
Surrogate: Nitrobenzene-d5	0.7397		1.00000	74.0	27 - 151				

LCS (B3H0322-BS1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	1.07353	0.20	1.00000	107	58 - 151				
Surrogate: 1,2-Dichlorobenzene-d4	0.5439		1.00000	54.4	47 - 117				
Surrogate: 2-Fluorobiphenyl	0.6043		1.00000	60.4	48 - 121				
Surrogate: 4-Terphenyl-d14	0.8272		1.00000	82.7	58 - 142				
Surrogate: Nitrobenzene-d5	0.6237		1.00000	62.4	27 - 151				

Matrix Spike (B3H0322-MS1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	0.968860	0.20	1.00000	ND	96.9	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.6139		1.00000	61.4	47 - 117				
Surrogate: 2-Fluorobiphenyl	0.6664		1.00000	66.6	48 - 121				
Surrogate: 4-Terphenyl-d14	0.8521		1.00000	85.2	58 - 142				
Surrogate: Nitrobenzene-d5	0.7180		1.00000	71.8	27 - 151				

Matrix Spike Dup (B3H0322-MSD1)

Source: 1302441-02

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,4-Dioxane	0.914270	0.20	1.00000	ND	91.4	58 - 151	5.80	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.5894		1.00000	58.9	47 - 117				
Surrogate: 2-Fluorobiphenyl	0.6375		1.00000	63.8	48 - 121				
Surrogate: 4-Terphenyl-d14	0.7948		1.00000	79.5	58 - 142				
Surrogate: Nitrobenzene-d5	0.6950		1.00000	69.5	27 - 151				



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/22/2013

Notes and Definitions

ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

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.

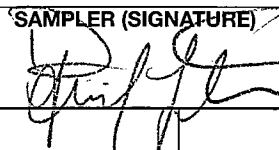
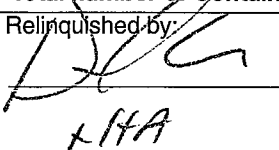
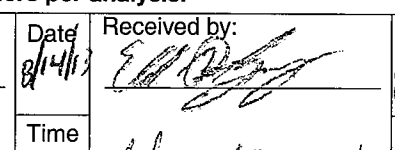
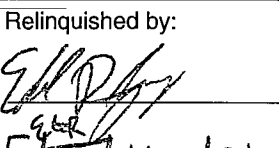
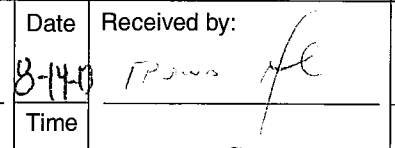


DATE 9/14/2013 PAGE 1 OF 2

PROJECT NAME Raytheon Main		PROJECT NO./TASK No. 532.30		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION						
PROJECT MANAGER Chris Ross		Phone No. 858-455-6500										ATL						
QA MANAGER Steve Netto		Fax No. 858-455-6533										Attn: Rachelle Araga						
SAMPLER (SIGNATURE)		SAMPLER (PRINTED)																
[Signature]		ERIN HUNTER																
[Signature]		SHAYNE KAPPUS																
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX	PRESERVATION	40 ml VOA	1 L Amber	8260B VOCs	8270 SW 1,4-Dioxane	8270 MDD 1,4-Dioxane	0-10	10-100	100-1,000	>1,000	Standard TAT	MS/MSD	MSD	REMARKS
		Date	Time															
1302441-04	TB-08413	8/14/13	0800															
2	MW-35C		1025	X		X												
3	MW-37		1150	X		X												
4	MW-33		1440	X		X												
5	MW-31		1545	X		X												
Total number of Containers per analysis: 144																		
Total No. of Containers: 18/39																		
Relinquished by: [Signature]		Date: 8/14/13	Received by: [Signature]	Date: 8/14/13	INSTRUCTIONS										Shipment Method: Courier			
Company: HFA		Time: 1705	Company: Advanced Tech Labs	Time: 1705	1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.										Send Results to: Steve Netto			
Relinquished by: [Signature]		Date: 8-14-13	Received by: [Signature]	Date: 8/14/13	Sample Receipt: [] No. of containers correct [] received good condition/cold [] custody seals secure [] conforms to COC document										9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500			
Company: Advanced Tech Labs		Time: 1750	Company: [Signature]	Time: 1750	Temp. @ receipt: 16 °C										1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888			
															1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300			
															Send invoice to San Diego, CA Attn: Accounts Payable			



DATE 8/14/13 PAGE 2 OF 2

PROJECT NAME Raytheon Main			PROJECT No./TASK No. 532.30			SAMPLE CONTAINERS			ANALYSIS REQUESTED			ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S			SPECIAL HANDLING			LABORATORY INFORMATION					
PROJECT MANAGER Chris Ross			Phone No. 858-455-6500															ATL					
QA MANAGER Steve Netto			Fax No. 858-455-6533															Attn: Rachelle Araga					
SAMPLER (SIGNATURE) 			SAMPLER (PRINTED) DANIEL MORA																				
ARIELLE FERBER																							
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION			40 ml VOA 1 L Amber	8260B VOCs	8270 SIM 1,4-Dioxane	8270 MOD 1,4-Dioxane	0-10 10-100 100-1,000 >1,000	Standard TAT					REMARKS			
		Date	Time	Soil	Ground water	Surface water	Lab H2O	HCl	HNO3												NaOH	H2SO4	Ice
1302441-6	RB-0814203	8/14/13	9:00				X	X			X									CC:			
-7	MW-13		10:05	X				X			X									ehunter@lanrg.iscm			
	↓		↓	X								X											
-8	MW-9		15:30	X				X			X												
	↓		↓	X								X											
-9	MW-15		14:40	X				X			X												
	↓		↓									X											
-10	RB-08142013B		10:05				X	X			X												
-11	MW-10		10:52	X				X			X												
	↓		↓	X								X											
Total number of Containers per analysis:										183											Total No. of Containers: 21/39		
Relinquished by: 		Date: 8/14/13	Received by: 		Date: 8/14/13	INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.										Shipment Method: Courier							
Company: X14A		Time: 17:05	Company: Advanced Tech Labs		Time: 17:05											Send Results to: Steve Netto							
Relinquished by: 		Date: 8-14-13	Received by: 		Date: 8/14/13	Sample Receipt: ☐ No. of containers correct ☐ custody seals secure										Send invoice to San Diego, CA Attn: Accounts Payable							
Company: Edward Advanced Tech Labs		Time: 17:50	Company: TP		Time: 17:50											Temp. @ receipt _____ °C ☐ received good condition/cold ☐ conforms to COC document							



August 23, 2013

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



Re: ATL Work Order Number : 1302457
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on August 15, 2013 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 "E Rodriguez".

Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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 : 08/23/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-081513A	1302457-01	Lab H2O	8/15/13 8:00	8/15/13 17:02
MW-36	1302457-02	Groundwater	8/15/13 11:05	8/15/13 17:02
MW-3600	1302457-03	Groundwater	8/15/13 10:45	8/15/13 17:02
MW-3000B	1302457-04	Groundwater	8/15/13 13:30	8/15/13 17:02
MW-30B	1302457-05	Groundwater	8/15/13 14:00	8/15/13 17:02
MW-2900	1302457-06	Groundwater	8/15/13 15:15	8/15/13 17:02
MW-29	1302457-07	Groundwater	8/15/13 16:15	8/15/13 17:02
MW-08	1302457-08	Groundwater	8/15/13 10:03	8/15/13 17:02
MW-26C	1302457-09	Groundwater	8/15/13 12:26	8/15/13 17:02
MW-30A	1302457-10	Groundwater	8/15/13 14:25	8/15/13 17:02



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 : 08/23/2013

Client Sample ID TB-081513A

Lab ID: 1302457-01

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	



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 : 08/23/2013

Client Sample ID TB-081513A

Lab ID: 1302457-01

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Toluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Trichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:15	
Surrogate: 1,2-Dichloroethane-d4	95.7 %		70 - 130		B3H0333	08/19/2013	08/19/13 13:15	
Surrogate: 4-Bromofluorobenzene	87.0 %		70 - 130		B3H0333	08/19/2013	08/19/13 13:15	
Surrogate: Dibromofluoromethane	89.1 %		70 - 130		B3H0333	08/19/2013	08/19/13 13:15	
Surrogate: Toluene-d8	84.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 13:15	



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 : 08/23/2013

Client Sample ID MW-36

Lab ID: 1302457-02

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,1-Dichloroethane	1.4	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,1-Dichloroethene	130	2.5	NA	5	B3H0333	08/19/2013	08/19/13 17:45	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	



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 : 08/23/2013

Client Sample ID MW-36

Lab ID: 1302457-02

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Toluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Trichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:30	
Surrogate: 1,2-Dichloroethane-d4	99.6 %		70 - 130		B3H0333	08/19/2013	08/19/13 17:45	
Surrogate: 1,2-Dichloroethane-d4	102 %		70 - 130		B3H0333	08/19/2013	08/19/13 16:30	
Surrogate: 4-Bromofluorobenzene	86.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 17:45	
Surrogate: 4-Bromofluorobenzene	90.6 %		70 - 130		B3H0333	08/19/2013	08/19/13 16:30	
Surrogate: Dibromofluoromethane	99.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 16:30	
Surrogate: Dibromofluoromethane	97.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 17:45	
Surrogate: Toluene-d8	82.9 %		70 - 130		B3H0333	08/19/2013	08/19/13 17:45	
Surrogate: Toluene-d8	90.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 16:30	



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 : 08/23/2013

Client Sample ID MW-36

Lab ID: 1302457-02

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	8.5	0.20	NA	1	B3H0348	08/19/2013	08/20/13 00:34	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.5 %</i>		<i>47 - 117</i>		B3H0348	08/19/2013	<i>08/20/13 00:34</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.9 %</i>		<i>48 - 121</i>		B3H0348	08/19/2013	<i>08/20/13 00:34</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>103 %</i>		<i>58 - 142</i>		B3H0348	08/19/2013	<i>08/20/13 00:34</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>98.6 %</i>		<i>27 - 151</i>		B3H0348	08/19/2013	<i>08/20/13 00:34</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 : 08/23/2013

Client Sample ID MW-3600

Lab ID: 1302457-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,1-Dichloroethane	1.4	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,1-Dichloroethene	130	1.0	NA	2	B3H0333	08/19/2013	08/19/13 18:09	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	



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 : 08/23/2013

Client Sample ID MW-3600

Lab ID: 1302457-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Toluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Trichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:53	
Surrogate: 1,2-Dichloroethane-d4	102 %		70 - 130		B3H0333	08/19/2013	08/19/13 18:09	
Surrogate: 1,2-Dichloroethane-d4	97.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:53	
Surrogate: 4-Bromofluorobenzene	85.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 18:09	
Surrogate: 4-Bromofluorobenzene	86.4 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:53	
Surrogate: Dibromofluoromethane	94.9 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:53	
Surrogate: Dibromofluoromethane	96.6 %		70 - 130		B3H0333	08/19/2013	08/19/13 18:09	
Surrogate: Toluene-d8	86.2 %		70 - 130		B3H0333	08/19/2013	08/19/13 18:09	
Surrogate: Toluene-d8	86.3 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:53	



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 : 08/23/2013

Client Sample ID MW-3600

Lab ID: 1302457-03

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	8.5	0.20	NA	1	B3H0348	08/19/2013	08/20/13 01:00	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>69.9 %</i>		<i>47 - 117</i>		B3H0348	08/19/2013	<i>08/20/13 01:00</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>73.7 %</i>		<i>48 - 121</i>		B3H0348	08/19/2013	<i>08/20/13 01:00</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>109 %</i>		<i>58 - 142</i>		B3H0348	08/19/2013	<i>08/20/13 01:00</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>96.5 %</i>		<i>27 - 151</i>		B3H0348	08/19/2013	<i>08/20/13 01:00</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 : 08/23/2013

Client Sample ID MW-3000B

Lab ID: 1302457-04

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,1-Dichloroethene	20	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
cis-1,2-Dichloroethene	5.7	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	



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 : 08/23/2013

Client Sample ID MW-3000B

Lab ID: 1302457-04

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Toluene	1.0	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Trichloroethene	100	1.0	NA	2	B3H0333	08/19/2013	08/19/13 18:33	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 16:05	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.5 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 18:33</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.3 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 16:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86.6 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 18:33</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.3 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 16:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.5 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 16:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>94.1 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 18:33</i>	
<i>Surrogate: Toluene-d8</i>	<i>75.9 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 16:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>77.4 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 18:33</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 : 08/23/2013

Client Sample ID MW-3000B

Lab ID: 1302457-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.29	0.20	NA	1	B3H0348	08/19/2013	08/21/13 10:21	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53.5 %</i>		<i>47 - 117</i>		B3H0348	08/19/2013	<i>08/21/13 10:21</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>48.3 %</i>		<i>48 - 121</i>		B3H0348	08/19/2013	<i>08/21/13 10:21</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>83.6 %</i>		<i>58 - 142</i>		B3H0348	08/19/2013	<i>08/21/13 10:21</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>66.3 %</i>		<i>27 - 151</i>		B3H0348	08/19/2013	<i>08/21/13 10:21</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 : 08/23/2013

Client Sample ID MW-30B

Lab ID: 1302457-05

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,1-Dichloroethene	20	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
cis-1,2-Dichloroethene	5.9	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	



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 : 08/23/2013

Client Sample ID MW-30B

Lab ID: 1302457-05

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Toluene	1.1	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Trichloroethene	100	1.0	NA	2	B3H0333	08/19/2013	08/19/13 18:58	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:17	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.3 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 18:58</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:17</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.9 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 18:58</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.3 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:17</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.5 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:17</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>93.8 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 18:58</i>	
<i>Surrogate: Toluene-d8</i>	<i>76.7 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>74.9 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 18:58</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 : 08/23/2013

Client Sample ID MW-30B

Lab ID: 1302457-05

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.36	0.20	NA	1	B3H0348	08/19/2013	08/20/13 01:54	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>79.8 %</i>		<i>47 - 117</i>		B3H0348	08/19/2013	<i>08/20/13 01:54</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77.5 %</i>		<i>48 - 121</i>		B3H0348	08/19/2013	<i>08/20/13 01:54</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>119 %</i>		<i>58 - 142</i>		B3H0348	08/19/2013	<i>08/20/13 01:54</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>118 %</i>		<i>27 - 151</i>		B3H0348	08/19/2013	<i>08/20/13 01:54</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 : 08/23/2013

Client Sample ID MW-2900

Lab ID: 1302457-06

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,1,2-Trichloroethane	1.1	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,1-Dichloroethane	3.9	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,1-Dichloroethene	400	2.5	NA	5	B3H0333	08/19/2013	08/19/13 19:22	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2-Dichloroethane	0.64	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	



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 : 08/23/2013

Client Sample ID MW-2900

Lab ID: 1302457-06

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Tetrachloroethene	0.84	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Toluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Trichloroethene	4.0	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Trichlorofluoromethane	1.3	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 13:40	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.4 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 19:22</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.7 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 13:40</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.9 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 19:22</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86.2 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 13:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>91.0 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 13:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.5 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 19:22</i>	
<i>Surrogate: Toluene-d8</i>	<i>86.0 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 19:22</i>	
<i>Surrogate: Toluene-d8</i>	<i>82.6 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 13:40</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 : 08/23/2013

Client Sample ID MW-2900

Lab ID: 1302457-06

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	120	2.0	NA	1	B3H0368	08/20/2013	08/20/13 22:14	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>67.6 %</i>		<i>37 - 93</i>		B3H0368	08/20/2013	<i>08/20/13 22:14</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>75.6 %</i>		<i>51 - 100</i>		B3H0368	08/20/2013	<i>08/20/13 22:14</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>102 %</i>		<i>58 - 113</i>		B3H0368	08/20/2013	<i>08/20/13 22:14</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>81.6 %</i>		<i>39 - 95</i>		B3H0368	08/20/2013	<i>08/20/13 22:14</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 : 08/23/2013

Client Sample ID MW-29

Lab ID: 1302457-07

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,1,2-Trichloroethane	1.1	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,1-Dichloroethane	3.6	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,1-Dichloroethene	370	2.5	NA	5	B3H0333	08/19/2013	08/19/13 16:54	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2-Dichloroethane	0.59	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
2-Chlorotoluene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
4-Chlorotoluene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Benzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Bromobenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Bromodichloromethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Bromoform	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Bromomethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Carbon tetrachloride	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Chlorobenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Chloroethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Chloroform	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Chloromethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Dibromochloromethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	



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 : 08/23/2013

Client Sample ID MW-29

Lab ID: 1302457-07

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Ethylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Isopropylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
m,p-Xylene	ND	1.0	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Methylene chloride	ND	1.0	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
n-Butylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
n-Propylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Naphthalene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
o-Xylene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
sec-Butylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Styrene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
tert-Butylbenzene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Tetrachloroethene	0.97	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Toluene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Trichloroethene	3.8	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Trichlorofluoromethane	1.2	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	
Vinyl chloride	ND	0.50	NA	1	B3H0220	08/16/2013	08/16/13 18:23	

Surrogate: 1,2-Dichloroethane-d4	98.0 %	70 - 130	B3H0333	08/19/2013	08/19/13 16:54
Surrogate: 1,2-Dichloroethane-d4	93.5 %	70 - 130	B3H0220	08/16/2013	08/16/13 18:23
Surrogate: 4-Bromofluorobenzene	83.4 %	70 - 130	B3H0333	08/19/2013	08/19/13 16:54
Surrogate: 4-Bromofluorobenzene	85.4 %	70 - 130	B3H0220	08/16/2013	08/16/13 18:23
Surrogate: Dibromofluoromethane	87.8 %	70 - 130	B3H0220	08/16/2013	08/16/13 18:23
Surrogate: Dibromofluoromethane	94.7 %	70 - 130	B3H0333	08/19/2013	08/19/13 16:54
Surrogate: Toluene-d8	84.8 %	70 - 130	B3H0333	08/19/2013	08/19/13 16:54
Surrogate: Toluene-d8	85.5 %	70 - 130	B3H0220	08/16/2013	08/16/13 18:23



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 : 08/23/2013

Client Sample ID MW-29

Lab ID: 1302457-07

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	120	2.0	NA	1	B3H0368	08/20/2013	08/20/13 22:41	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>62.1 %</i>		<i>37 - 93</i>		B3H0368	08/20/2013	<i>08/20/13 22:41</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.4 %</i>		<i>51 - 100</i>		B3H0368	08/20/2013	<i>08/20/13 22:41</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>90.3 %</i>		<i>58 - 113</i>		B3H0368	08/20/2013	<i>08/20/13 22:41</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>71.4 %</i>		<i>39 - 95</i>		B3H0368	08/20/2013	<i>08/20/13 22:41</i>	



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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 : 08/23/2013

Client Sample ID MW-08

Lab ID: 1302457-08

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,1-Dichloroethene	10	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
cis-1,2-Dichloroethene	1.6	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	



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 : 08/23/2013

Client Sample ID MW-08

Lab ID: 1302457-08

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Toluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Trichloroethene	27	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 15:41	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.7 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:41</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.4 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:41</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.7 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>78.5 %</i>		<i>70 - 130</i>		B3H0333	08/19/2013	<i>08/19/13 15:41</i>	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/23/2013

Client Sample ID MW-08

Lab ID: 1302457-08

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	1.0	0.20	NA	1	B3H0348	08/19/2013	08/20/13 02:21	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>63.6 %</i>		<i>47 - 117</i>		B3H0348	08/19/2013	<i>08/20/13 02:21</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.9 %</i>		<i>48 - 121</i>		B3H0348	08/19/2013	<i>08/20/13 02:21</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>116 %</i>		<i>58 - 142</i>		B3H0348	08/19/2013	<i>08/20/13 02:21</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>84.6 %</i>		<i>27 - 151</i>		B3H0348	08/19/2013	<i>08/20/13 02:21</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 : 08/23/2013

Client Sample ID MW-26C

Lab ID: 1302457-09

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Chloroethane	0.87	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	



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 : 08/23/2013

Client Sample ID MW-26C

Lab ID: 1302457-09

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Toluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Trichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:04	
Surrogate: 1,2-Dichloroethane-d4	98.6 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:04	
Surrogate: 4-Bromofluorobenzene	87.3 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:04	
Surrogate: Dibromofluoromethane	98.0 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:04	
Surrogate: Toluene-d8	84.1 %		70 - 130		B3H0333	08/19/2013	08/19/13 14:04	



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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 : 08/23/2013

Client Sample ID MW-26C

Lab ID: 1302457-09

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0348	08/19/2013	08/20/13 02:47	
Surrogate: 1,2-Dichlorobenzene-d4	71.4 %		47 - 117		B3H0348	08/19/2013	08/20/13 02:47	
Surrogate: 2-Fluorobiphenyl	71.1 %		48 - 121		B3H0348	08/19/2013	08/20/13 02:47	
Surrogate: 4-Terphenyl-d14	153 %		58 - 142		B3H0348	08/19/2013	08/20/13 02:47	S1
Surrogate: Nitrobenzene-d5	90.3 %		27 - 151		B3H0348	08/19/2013	08/20/13 02:47	



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/23/2013

Client Sample ID MW-30A

Lab ID: 1302457-10

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,1-Dichloroethene	1.1	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
2-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
4-Chlorotoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Benzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Bromobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Bromodichloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Bromoform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Bromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Carbon tetrachloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Chlorobenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Chloroethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Chloroform	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Chloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Dibromochloromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	



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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 : 08/23/2013

Client Sample ID MW-30A

Lab ID: 1302457-10

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Ethylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Isopropylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
m,p-Xylene	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Methylene chloride	ND	1.0	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
n-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
n-Propylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Naphthalene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
o-Xylene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
sec-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Styrene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
tert-Butylbenzene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Tetrachloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Toluene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Trichloroethene	1.7	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
Vinyl chloride	ND	0.50	NA	1	B3H0333	08/19/2013	08/19/13 14:28	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.5 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 14:28</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.7 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 14:28</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.5 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 14:28</i>	
<i>Surrogate: Toluene-d8</i>	<i>87.5 %</i>	<i>70 - 130</i>			B3H0333	08/19/2013	<i>08/19/13 14:28</i>	



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Reported : 08/23/2013

Client Sample ID MW-30A

Lab ID: 1302457-10

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0348	08/19/2013	08/20/13 03:13	
Surrogate: 1,2-Dichlorobenzene-d4	76.8 %		47 - 117		B3H0348	08/19/2013	08/20/13 03:13	
Surrogate: 2-Fluorobiphenyl	77.5 %		48 - 121		B3H0348	08/19/2013	08/20/13 03:13	
Surrogate: 4-Terphenyl-d14	114 %		58 - 142		B3H0348	08/19/2013	08/20/13 03:13	
Surrogate: Nitrobenzene-d5	106 %		27 - 151		B3H0348	08/19/2013	08/20/13 03:13	



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QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3H0220 - MSVOAW_LL

Blank (B3H0220-BLK1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR



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

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

Batch B3H0220 - MSVOAW_LL (continued)

Blank (B3H0220-BLK1) - Continued

Prepared: 8/16/2013 Analyzed: 8/16/2013

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	25.58		25.0000		102	70 - 130			
Surrogate: 4-Bromofluorobenzene	23.10		25.0000		92.4	70 - 130			
Surrogate: Dibromofluoromethane	24.42		25.0000		97.7	70 - 130			
Surrogate: Toluene-d8	24.01		25.0000		96.0	70 - 130			

LCS (B3H0220-BS1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	18.8100	0.50	20.0000		94.0	70 - 130			
Benzene	35.4900	0.50	40.0000		88.7	70 - 130			
Chlorobenzene	17.4500	0.50	20.0000		87.2	70 - 130			
MTBE	19.7200	0.50	20.0000		98.6	70 - 130			
Toluene	38.3700	0.50	40.0000		95.9	70 - 130			
Trichloroethene	16.1400	0.50	20.0000		80.7	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	24.09		25.0000		96.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	23.05		25.0000		92.2	70 - 130			
Surrogate: Dibromofluoromethane	23.57		25.0000		94.3	70 - 130			
Surrogate: Toluene-d8	24.95		25.0000		99.8	70 - 130			

LCS Dup (B3H0220-BSD1)

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	16.4000	0.50	20.0000		82.0	70 - 130	13.7	20	
Benzene	34.9000	0.50	40.0000		87.2	70 - 130	1.68	20	
Chlorobenzene	17.4400	0.50	20.0000		87.2	70 - 130	0.0573	20	
MTBE	19.7600	0.50	20.0000		98.8	70 - 130	0.203	20	
Toluene	38.2800	0.50	40.0000		95.7	70 - 130	0.235	20	



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

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

Batch B3H0220 - MSVOAW_LL (continued)

LCS Dup (B3H0220-BSD1) - Continued

Prepared: 8/16/2013 Analyzed: 8/16/2013

Trichloroethene	15.8700	0.50	20.0000		79.4	70 - 130	1.69	20	
Surrogate: 1,2-Dichloroethane-d4	22.99		25.0000		92.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	22.87		25.0000		91.5	70 - 130			
Surrogate: Dibromofluoromethane	21.37		25.0000		85.5	70 - 130			
Surrogate: Toluene-d8	24.63		25.0000		98.5	70 - 130			

Duplicate (B3H0220-DUP1)

Source: 1302463-01

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	ND	0.50		ND	NR			20	
Benzene	ND	0.50		ND	NR			20	
Chlorobenzene	ND	0.50		ND	NR			20	
MTBE	ND	0.50		ND	NR			20	
Toluene	ND	0.50		ND	NR			20	
Trichloroethene	ND	0.50		ND	NR			20	
Surrogate: 1,2-Dichloroethane-d4	25.13		25.0000		101	70 - 130			
Surrogate: 4-Bromofluorobenzene	26.56		25.0000		106	70 - 130			
Surrogate: Dibromofluoromethane	22.98		25.0000		91.9	70 - 130			
Surrogate: Toluene-d8	23.04		25.0000		92.2	70 - 130			

Matrix Spike (B3H0220-MS1)

Source: 1302457-07

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	327.620	0.50	20.0000	318.050	47.9	70 - 130			M1
Benzene	39.3100	0.50	40.0000	ND	98.3	70 - 130			
Chlorobenzene	18.9900	0.50	20.0000	ND	95.0	70 - 130			
MTBE	18.9500	0.50	20.0000	ND	94.8	70 - 130			
Toluene	43.3300	0.50	40.0000	ND	108	70 - 130			
Trichloroethene	22.9900	0.50	20.0000	3.80000	96.0	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	22.81		25.0000		91.2	70 - 130			
Surrogate: 4-Bromofluorobenzene	21.99		25.0000		88.0	70 - 130			
Surrogate: Dibromofluoromethane	21.94		25.0000		87.8	70 - 130			
Surrogate: Toluene-d8	23.70		25.0000		94.8	70 - 130			

Matrix Spike Dup (B3H0220-MSD1)

Source: 1302457-07

Prepared: 8/16/2013 Analyzed: 8/16/2013

1,1-Dichloroethene	332.160	0.50	20.0000	318.050	70.6	70 - 130	1.38	20	
Benzene	41.9900	0.50	40.0000	ND	105	70 - 130	6.59	20	
Chlorobenzene	20.2400	0.50	20.0000	ND	101	70 - 130	6.37	20	
MTBE	21.1100	0.50	20.0000	ND	106	70 - 130	10.8	20	
Toluene	46.1800	0.50	40.0000	ND	115	70 - 130	6.37	20	
Trichloroethene	25.4000	0.50	20.0000	3.80000	108	70 - 130	9.96	20	
Surrogate: 1,2-Dichloroethane-d4	23.06		25.0000		92.2	70 - 130			
Surrogate: 4-Bromofluorobenzene	22.36		25.0000		89.4	70 - 130			
Surrogate: Dibromofluoromethane	22.02		25.0000		88.1	70 - 130			
Surrogate: Toluene-d8	24.77		25.0000		99.1	70 - 130			



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 : 08/23/2013

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

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

Batch B3H0333 - MSVOAW_LL

Blank (B3H0333-BLK1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR
Isopropylbenzene	ND	0.50			NR



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 : 08/23/2013

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

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

Batch B3H0333 - MSVOAW_LL (continued)

Blank (B3H0333-BLK1) - Continued

Prepared: 8/19/2013 Analyzed: 8/19/2013

m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	22.75		25.0000		91.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	21.72		25.0000		86.9	70 - 130			
Surrogate: Dibromofluoromethane	21.97		25.0000		87.9	70 - 130			
Surrogate: Toluene-d8	20.67		25.0000		82.7	70 - 130			

LCS (B3H0333-BS1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1-Dichloroethene	20.8500	0.50	20.0000		104	70 - 130			
Benzene	38.5500	0.50	40.0000		96.4	70 - 130			
Chlorobenzene	19.4000	0.50	20.0000		97.0	70 - 130			
MTBE	19.9000	0.50	20.0000		99.5	70 - 130			
Toluene	42.8300	0.50	40.0000		107	70 - 130			
Trichloroethene	20.9100	0.50	20.0000		105	70 - 130			

Surrogate: 1,2-Dichloroethane-d4	22.01		25.0000		88.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	22.24		25.0000		89.0	70 - 130			
Surrogate: Dibromofluoromethane	21.36		25.0000		85.4	70 - 130			
Surrogate: Toluene-d8	23.60		25.0000		94.4	70 - 130			

LCS Dup (B3H0333-BS1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1-Dichloroethene	22.5200	0.50	20.0000		113	70 - 130	7.70	20	
Benzene	40.7400	0.50	40.0000		102	70 - 130	5.52	20	
Chlorobenzene	19.6600	0.50	20.0000		98.3	70 - 130	1.33	20	
MTBE	20.6700	0.50	20.0000		103	70 - 130	3.80	20	
Toluene	43.9100	0.50	40.0000		110	70 - 130	2.49	20	
Trichloroethene	20.4800	0.50	20.0000		102	70 - 130	2.08	20	

Surrogate: 1,2-Dichloroethane-d4	22.16		25.0000		88.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	21.55		25.0000		86.2	70 - 130			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

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Reported : 08/23/2013

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

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

Batch B3H0333 - MSVOAW_LL (continued)

LCS Dup (B3H0333-BSD1) - Continued

Prepared: 8/19/2013 Analyzed: 8/19/2013

Surrogate: Dibromofluoromethane	21.60	25.0000	86.4	70 - 130
Surrogate: Toluene-d8	23.54	25.0000	94.2	70 - 130



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/23/2013

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

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

Batch B3H0368 - MSSEMI

Blank (B3H0368-BLK1)

Prepared: 8/20/2013 Analyzed: 8/20/2013

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	58.45		100.000		58.4	37 - 93			
Surrogate: 2-Fluorobiphenyl	64.47		100.000		64.5	51 - 100			
Surrogate: 4-Terphenyl-d14	84.63		100.000		84.6	58 - 113			
Surrogate: Nitrobenzene-d5	65.52		100.000		65.5	39 - 95			

LCS (B3H0368-BS1)

Prepared: 8/20/2013 Analyzed: 8/20/2013

1,4-Dioxane	80.5100	2.0	100.000		80.5	70 - 130			
Surrogate: 1,2-Dichlorobenzene-d4	67.39		100.000		67.4	37 - 93			
Surrogate: 2-Fluorobiphenyl	73.76		100.000		73.8	51 - 100			
Surrogate: 4-Terphenyl-d14	89.07		100.000		89.1	58 - 113			
Surrogate: Nitrobenzene-d5	83.50		100.000		83.5	39 - 95			

Matrix Spike (B3H0368-MS1)

Source: 1302457-07

Prepared: 8/20/2013 Analyzed: 8/20/2013

1,4-Dioxane	193.300	2.0	100.000	125.000	68.3	70 - 130			M1
Surrogate: 1,2-Dichlorobenzene-d4	69.26		100.000		69.3	37 - 93			
Surrogate: 2-Fluorobiphenyl	76.90		100.000		76.9	51 - 100			
Surrogate: 4-Terphenyl-d14	95.77		100.000		95.8	58 - 113			
Surrogate: Nitrobenzene-d5	82.82		100.000		82.8	39 - 95			

Matrix Spike Dup (B3H0368-MSD1)

Source: 1302457-07

Prepared: 8/20/2013 Analyzed: 8/20/2013

1,4-Dioxane	199.340	2.0	100.000	125.000	74.3	70 - 130	3.08	20	
Surrogate: 1,2-Dichlorobenzene-d4	57.34		100.000		57.3	37 - 93			
Surrogate: 2-Fluorobiphenyl	70.86		100.000		70.9	51 - 100			
Surrogate: 4-Terphenyl-d14	94.87		100.000		94.9	58 - 113			
Surrogate: Nitrobenzene-d5	70.41		100.000		70.4	39 - 95			



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 : 08/23/2013

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

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

Batch B3H0348 - MSSEMI

Blank (B3H0348-BLK1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7475		1.00000		74.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8172		1.00000		81.7	48 - 121			
Surrogate: 4-Terphenyl-d14	1.144		1.00000		114	58 - 142			
Surrogate: Nitrobenzene-d5	0.9828		1.00000		98.3	27 - 151			

LCS (B3H0348-BS1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,4-Dioxane	0.973100	0.20	1.00000		97.3	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.6791		1.00000		67.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7743		1.00000		77.4	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9957		1.00000		99.6	58 - 142			
Surrogate: Nitrobenzene-d5	0.8932		1.00000		89.3	27 - 151			

LCS Dup (B3H0348-BS1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,4-Dioxane	1.15764	0.20	1.00000		116	58 - 151	17.3	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.8273		1.00000		82.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7408		1.00000		74.1	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9911		1.00000		99.1	58 - 142			
Surrogate: Nitrobenzene-d5	1.107		1.00000		111	27 - 151			



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 : 08/23/2013

Notes and Definitions

S1	Surrogate recovery was above laboratory acceptance limit. No target analyte was detected in the sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 8/15/13 PAGE 1 OF 2

PROJECT NAME Raytheon Main		PROJECT No./TASK No. 532.30		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION	
PROJECT MANAGER Chris Ross		Phone No. 858-455-6500		40 ml VOA 1 L Amber 8260B VOCs 8270 SIM 1,4-Dioxane 8270 MOD 1,4-Dioxane				0-10 10-100 100-1,000 >1,000		Standard TAT MS MS		ATL	
QA MANAGER Steve Netto		Fax No. 858-455-6533										Attn: Rachelle Arada	
SAMPLER (SIGNATURE) 		SAMPLER (PRINTED) ERIN HUNTER Arielle Fember											
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION							
		Date	Time	Soil	Ground water	Surface water	Lab H2O	HCl	HNO3	NaOH	H2SO4	Ice	
1302457-1	TB-081513A	8/15/13	0800				X	X				X	
-2	MW-36		1105	X			X				X		
	↓		↓	X			X				X		
-3	MW-3600		1045	X			X				X		
	↓		↓	X			X				X		
-4	MW-30DOB		1330	X			X				X		
	↓		↓	X			X				X		
-5	MW-30B		1400	X			X				X		
	↓		↓	X			X				X		
-6	MW-2900		1515	X			X				X		
	↓		↓	X			X				X		
-7	MW-29		1615	X			X				X		
	↓		↓	X			X				X		
Total number of Containers per analysis:				206				Total No. of Containers: 206/38					
Relinquished by: Arielle Fember		Date 8/15/13	Received by: 		Date 8-15-13	INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.				Shipment Method: <u>Courier</u>			
Hargis + Associates, Inc.		Time 17:02	Advanced Tech Labs		Time 17:02					Send Results to: <u>Steve Netto</u>			
Relinquished by: 		Date 8-15-13	Received by: Fember		Date 8/15/13	Sample Receipt: ☐ No. of containers correct ☐ custody seals secure				☒ received good condition/cold ☐ conforms to COC document			
Advanced Tech Labs		Time 17:55	ATL		Time 7:55					Temp. @ receipt <u>41.9</u> °C Send invoice to San Diego, CA Attn: Accounts Payable			

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 8/15/13 PAGE 2 OF 2

PROJECT NAME RAYTHEON - MAIN		PROJECT No./TASK No. 532.30		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION	
PROJECT MANAGER S. NETTO		Phone No. 858.455.6500										ATTN: Rachelle Arada	
QA MANAGER E. HUNTER		Fax No. 858.455.6533											
SAMPLER (SIGNATURE) <i>[Signature]</i>		SAMPLER (PRINTED) DANIEL MORA											
		ERIN HAZEN											
		SHAYNE L. KAPPUS											
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION					REMARKS	
		Date	Time	Soil	Ground water	Surface water	HCl	HNO ₃	NaOH	H ₂ SO ₄	Ice		
1302457 - 8	MW-08	8/15/13	10:03	X			X				X		
	↓		↓	X							X		
	-9 MW-26C		12:26	X			X				X		
	↓		↓	X							X		
	-10 MW-30A	8/15/13	14:25	X			X				X		
	↓		↓								X		

Total number of Containers per analysis:				Total No. of Containers:			
Relinquished by: Anielle Fender		Date: 8/15/13		Received by: <i>[Signature]</i>		Date: 8-15-13	
Company: Hargis + Associates, INC.		Time: 17:02		Company: Advanced Tech Labs		Time: 17:02	
Relinquished by: <i>[Signature]</i>		Date: 8-15-13		Received by: <i>[Signature]</i>		Date: 8/15/13	
Company: Advanced Tech Labs		Time: 17:55		Company: ATL		Time: 17:11	
INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.							
Sample Receipt: ☐ No. of containers correct ☐ custody seals secure				Temp. @ receipt _____ °C ☒ received good condition/cold ☐ conforms to COC document			
Shipment Method: _____ Send Results to: _____ ☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300 Send invoice to San Diego, CA Attn: Accounts Payable							



August 23, 2013

Steve Netto & Erin Hunter
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (858) 455-6500
Fax: (858) 455-6533



Re: ATL Work Order Number : 1302478
Client Reference : RAYTHEON MAIN, 532.30

Enclosed are the results for sample(s) received on August 16, 2013 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 "E Rodriguez".

Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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 & Erin Hunter

Reported : 08/23/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-08162013	1302478-01	Lab H2O	8/16/13 7:30	8/16/13 11:20
MW-40	1302478-02	Groundwater	8/16/13 9:10	8/16/13 11:20
MW-38	1302478-03	Groundwater	8/16/13 10:42	8/16/13 11:20
MW-39	1302478-04	Groundwater	8/16/13 9:40	8/16/13 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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID TB-08162013

Lab ID: 1302478-01

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
2-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
4-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Benzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Bromobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Bromodichloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Bromoform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Bromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Carbon tetrachloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Chlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Chloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Chloroform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Chloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Dibromochloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID TB-08162013

Lab ID: 1302478-01

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Ethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Isopropylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
m,p-Xylene	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Methylene chloride	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
n-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
n-Propylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Naphthalene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
o-Xylene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
sec-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Styrene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
tert-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Tetrachloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Toluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Trichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Vinyl chloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 12:54	
Surrogate: 1,2-Dichloroethane-d4	88.2 %		70 - 130		B3H0332	08/19/2013	08/19/13 12:54	
Surrogate: 4-Bromofluorobenzene	95.7 %		70 - 130		B3H0332	08/19/2013	08/19/13 12:54	
Surrogate: Dibromofluoromethane	96.5 %		70 - 130		B3H0332	08/19/2013	08/19/13 12:54	
Surrogate: Toluene-d8	86.0 %		70 - 130		B3H0332	08/19/2013	08/19/13 12:54	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-40

Lab ID: 1302478-02

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
2-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
4-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Benzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Bromobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Bromodichloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Bromoform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Bromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Carbon tetrachloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Chlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Chloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Chloroform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Chloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Dibromochloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-40

Lab ID: 1302478-02

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Ethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Isopropylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
m,p-Xylene	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Methylene chloride	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
n-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
n-Propylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Naphthalene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
o-Xylene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
sec-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Styrene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
tert-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Tetrachloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Toluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Trichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Vinyl chloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:04	
Surrogate: 1,2-Dichloroethane-d4	90.4 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:04	
Surrogate: 4-Bromofluorobenzene	94.4 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:04	
Surrogate: Dibromofluoromethane	97.4 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:04	
Surrogate: Toluene-d8	84.1 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:04	



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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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-40

Lab ID: 1302478-02

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0348	08/19/2013	08/20/13 03:40	
Surrogate: 1,2-Dichlorobenzene-d4	85.2 %		47 - 117		B3H0348	08/19/2013	08/20/13 03:40	
Surrogate: 2-Fluorobiphenyl	78.2 %		48 - 121		B3H0348	08/19/2013	08/20/13 03:40	
Surrogate: 4-Terphenyl-d14	124 %		58 - 142		B3H0348	08/19/2013	08/20/13 03:40	
Surrogate: Nitrobenzene-d5	91.8 %		27 - 151		B3H0348	08/19/2013	08/20/13 03:40	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-38

Lab ID: 1302478-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
2-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
4-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Benzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Bromobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Bromodichloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Bromoform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Bromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Carbon tetrachloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Chlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Chloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Chloroform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Chloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Dibromochloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-38

Lab ID: 1302478-03

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Ethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Isopropylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
m,p-Xylene	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Methylene chloride	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
n-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
n-Propylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Naphthalene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
o-Xylene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
sec-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Styrene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
tert-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Tetrachloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Toluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Trichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Vinyl chloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:27	
Surrogate: 1,2-Dichloroethane-d4	95.5 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:27	
Surrogate: 4-Bromofluorobenzene	99.1 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:27	
Surrogate: Dibromofluoromethane	101 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:27	
Surrogate: Toluene-d8	88.6 %		70 - 130		B3H0332	08/19/2013	08/19/13 16:27	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-38

Lab ID: 1302478-03

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0348	08/19/2013	08/20/13 04:07	
Surrogate: 1,2-Dichlorobenzene-d4	77.9 %		47 - 117		B3H0348	08/19/2013	08/20/13 04:07	
Surrogate: 2-Fluorobiphenyl	81.0 %		48 - 121		B3H0348	08/19/2013	08/20/13 04:07	
Surrogate: 4-Terphenyl-d14	112 %		58 - 142		B3H0348	08/19/2013	08/20/13 04:07	
Surrogate: Nitrobenzene-d5	105 %		27 - 151		B3H0348	08/19/2013	08/20/13 04:07	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-39

Lab ID: 1302478-04

Volatile Organic Compounds by EPA 8260

Analyst: DP

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	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
2-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
4-Chlorotoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Benzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Bromobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Bromodichloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Bromoform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Bromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Carbon tetrachloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Chlorobenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Chloroethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Chloroform	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Chloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Dibromochloromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	



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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-39

Lab ID: 1302478-04

Volatile Organic Compounds by EPA 8260

Analyst: DP

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Ethylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Isopropylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
m,p-Xylene	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Methylene chloride	ND	1.0	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
n-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
n-Propylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Naphthalene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
o-Xylene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
sec-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Styrene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
tert-Butylbenzene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Tetrachloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Toluene	0.69	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Trichloroethene	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
Vinyl chloride	ND	0.50	NA	1	B3H0332	08/19/2013	08/19/13 16:51	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.7 %</i>		<i>70 - 130</i>		B3H0332	08/19/2013	<i>08/19/13 16:51</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.6 %</i>		<i>70 - 130</i>		B3H0332	08/19/2013	<i>08/19/13 16:51</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>96.8 %</i>		<i>70 - 130</i>		B3H0332	08/19/2013	<i>08/19/13 16:51</i>	
<i>Surrogate: Toluene-d8</i>	<i>85.6 %</i>		<i>70 - 130</i>		B3H0332	08/19/2013	<i>08/19/13 16:51</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 & Erin Hunter

Reported : 08/23/2013

Client Sample ID MW-39

Lab ID: 1302478-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	NA	1	B3H0348	08/19/2013	08/20/13 04:34	
Surrogate: 1,2-Dichlorobenzene-d4	77.2 %		47 - 117		B3H0348	08/19/2013	08/20/13 04:34	
Surrogate: 2-Fluorobiphenyl	82.5 %		48 - 121		B3H0348	08/19/2013	08/20/13 04:34	
Surrogate: 4-Terphenyl-d14	117 %		58 - 142		B3H0348	08/19/2013	08/20/13 04:34	
Surrogate: Nitrobenzene-d5	106 %		27 - 151		B3H0348	08/19/2013	08/20/13 04:34	



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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 & Erin Hunter

Reported : 08/23/2013

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3H0332 - MSVOAW_LL

Blank (B3H0332-BLK1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR



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 & Erin Hunter

Reported : 08/23/2013

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

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

Batch B3H0332 - MSVOAW_LL (continued)

Blank (B3H0332-BLK1) - Continued

Prepared: 8/19/2013 Analyzed: 8/19/2013

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	22.16		25.0000		88.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	23.72		25.0000		94.9	70 - 130			
Surrogate: Dibromofluoromethane	24.00		25.0000		96.0	70 - 130			
Surrogate: Toluene-d8	22.65		25.0000		90.6	70 - 130			

LCS (B3H0332-BS1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1-Dichloroethene	22.3900	0.50	20.0000		112	70 - 130			
Benzene	44.7100	0.50	40.0000		112	70 - 130			
Chlorobenzene	22.1000	0.50	20.0000		110	70 - 130			
MTBE	21.5300	0.50	20.0000		108	70 - 130			
Toluene	42.9900	0.50	40.0000		107	70 - 130			
Trichloroethene	23.7200	0.50	20.0000		119	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	21.69		25.0000		86.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.44		25.0000		97.8	70 - 130			
Surrogate: Dibromofluoromethane	22.81		25.0000		91.2	70 - 130			
Surrogate: Toluene-d8	23.32		25.0000		93.3	70 - 130			

LCS Dup (B3H0332-BSD1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,1-Dichloroethene	22.7200	0.50	20.0000		114	70 - 130	1.46	20	
Benzene	45.4500	0.50	40.0000		114	70 - 130	1.64	20	
Chlorobenzene	22.2000	0.50	20.0000		111	70 - 130	0.451	20	
MTBE	22.9300	0.50	20.0000		115	70 - 130	6.30	20	
Toluene	44.6200	0.50	40.0000		112	70 - 130	3.72	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 & Erin Hunter

Reported : 08/23/2013

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

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

Batch B3H0332 - MSVOAW_LL (continued)

LCS Dup (B3H0332-BSD1) - Continued

Prepared: 8/19/2013 Analyzed: 8/19/2013

Trichloroethene	23.5600	0.50	20.0000		118	70 - 130	0.677	20	
Surrogate: 1,2-Dichloroethane-d4	22.14		25.0000		88.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.78		25.0000		99.1	70 - 130			
Surrogate: Dibromofluoromethane	23.16		25.0000		92.6	70 - 130			
Surrogate: Toluene-d8	24.41		25.0000		97.6	70 - 130			



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 & Erin Hunter

Reported : 08/23/2013

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

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

Batch B3H0348 - MSSEMI

Blank (B3H0348-BLK1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7475		1.00000		74.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8172		1.00000		81.7	48 - 121			
Surrogate: 4-Terphenyl-d14	1.144		1.00000		114	58 - 142			
Surrogate: Nitrobenzene-d5	0.9828		1.00000		98.3	27 - 151			

LCS (B3H0348-BS1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,4-Dioxane	0.973100	0.20	1.00000		97.3	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.6791		1.00000		67.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7743		1.00000		77.4	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9957		1.00000		99.6	58 - 142			
Surrogate: Nitrobenzene-d5	0.8932		1.00000		89.3	27 - 151			

LCS Dup (B3H0348-BSD1)

Prepared: 8/19/2013 Analyzed: 8/19/2013

1,4-Dioxane	1.15764	0.20	1.00000		116	58 - 151	17.3	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.8273		1.00000		82.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7408		1.00000		74.1	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9911		1.00000		99.1	58 - 142			
Surrogate: Nitrobenzene-d5	1.107		1.00000		111	27 - 151			



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 & Erin Hunter

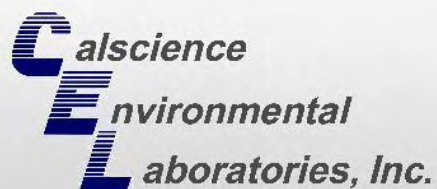
Reported : 08/23/2013

Notes and Definitions

ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.

[illegible]



CALSCIENCE

WORK ORDER NUMBER: 13-08-0597

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Analytical Report For

Client: Hargis + Associates, Inc.

Client Project Name: Raytheon Main / 532.30

Attention: Chris Ross

9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Emma C. Domineau for

Approved for release on 08/29/2013 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶



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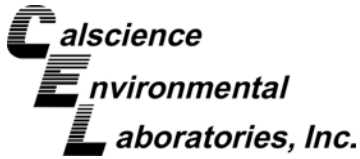
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NELAP ID: 03220CA | DoD-ELAP ID: L10-41 | CSDLAC ID: 10109 | SCAQMD ID: 93LA0830

Contents

Client Project Name: Raytheon Main / 532.30
Work Order Number: 13-08-0597

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Work Order Narrative

Work Order: 13-08-0597

Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain of Custody (COC) on 08/08/13. They were assigned to Work Order 13-08-0597.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

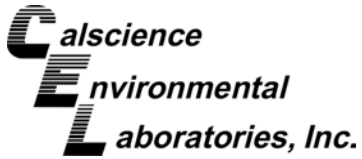
All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

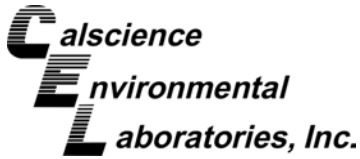


Sample Summary

Client:	Hargis + Associates, Inc.	Work Order:	13-08-0597
	9171 Towne Centre Drive, Suite 375	Project Name:	Raytheon Main / 532.30
	San Diego, CA 92122-6215	PO Number:	
		Date/Time Received:	08/08/13 13:10
		Number of Containers:	12

Attn: Chris Ross

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB-080713B	13-08-0597-1	08/07/13 14:00	2	Aqueous
MW-38	13-08-0597-2	08/07/13 16:20	4	Aqueous
TB-080813B	13-08-0597-3	08/08/13 10:00	2	Aqueous
MW-39	13-08-0597-4	08/08/13 10:28	4	Aqueous



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 3520C
Method: EPA 8270C(M) Isotope Dilution
Units: ug/L

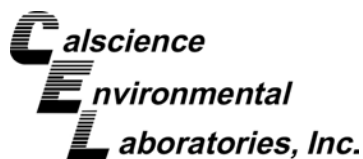
Project: Raytheon Main / 532.30

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-38	13-08-0597-2-D	08/07/13 16:20	Aqueous	GC/MS DDD	08/08/13	08/16/13 23:35	130808L07
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
1,4-Dioxane		ND	1.0		1		
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>		<u>Qualifiers</u>		
Nitrobenzene-d5		108	56-123				
MW-39	13-08-0597-4-D	08/08/13 10:28	Aqueous	GC/MS DDD	08/08/13	08/16/13 23:54	130808L07
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
1,4-Dioxane		ND	1.0		1		
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>		<u>Qualifiers</u>		
Nitrobenzene-d5		84	56-123				
Method Blank	099-09-004-2376	N/A	Aqueous	GC/MS DDD	08/08/13	08/12/13 16:04	130808L07
<u>Parameter</u>		<u>Result</u>	<u>RL</u>		<u>DF</u>		<u>Qualifiers</u>
1,4-Dioxane		ND	1.0		1		
<u>Surrogate</u>		<u>Rec. (%)</u>	<u>Control Limits</u>		<u>Qualifiers</u>		
Nitrobenzene-d5		102	56-123				

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

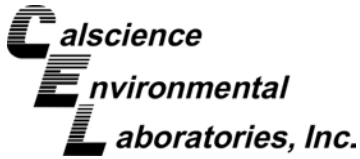
Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-080713B	13-08-0597-1-A	08/07/13 14:00	Aqueous	GC/MS CC	08/09/13	08/09/13 15:14	130809L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

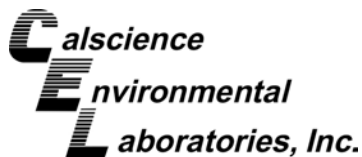
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	98	80-120	
Dibromofluoromethane	101	80-126	
1,2-Dichloroethane-d4	103	80-134	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

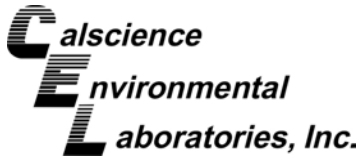
Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-38	13-08-0597-2-A	08/07/13 16:20	Aqueous	GC/MS CC	08/09/13	08/09/13 18:18	130809L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

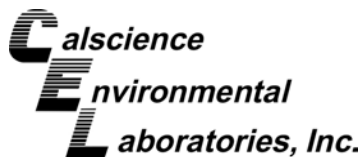
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	97	80-120	
Dibromofluoromethane	102	80-126	
1,2-Dichloroethane-d4	106	80-134	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

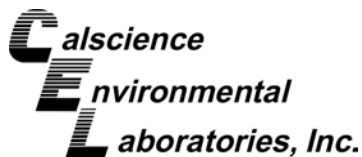
Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-080813B	13-08-0597-3-A	08/08/13 10:00	Aqueous	GC/MS CC	08/09/13	08/09/13 15:43	130809L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

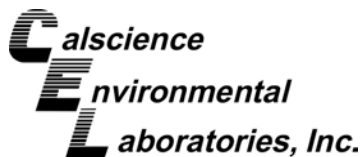
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	98	80-120	
Dibromofluoromethane	104	80-126	
1,2-Dichloroethane-d4	108	80-134	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

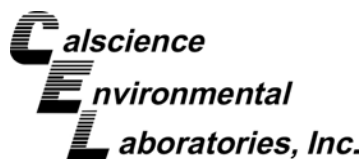
Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-39	13-08-0597-4-A	08/08/13 10:28	Aqueous	GC/MS CC	08/09/13	08/09/13 18:47	130809L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

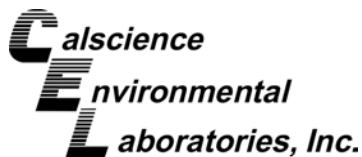
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	97	80-120	
Dibromofluoromethane	103	80-126	
1,2-Dichloroethane-d4	107	80-134	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

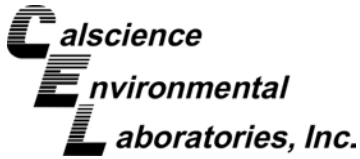
Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-11625	N/A	Aqueous	GC/MS CC	08/09/13	08/09/13 14:45	130809L01

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1	
Benzene	ND	0.50	1	
Bromobenzene	ND	1.0	1	
Bromochloromethane	ND	1.0	1	
Bromodichloromethane	ND	1.0	1	
Bromoform	ND	1.0	1	
Bromomethane	ND	10	1	
2-Butanone	ND	10	1	
n-Butylbenzene	ND	1.0	1	
sec-Butylbenzene	ND	1.0	1	
tert-Butylbenzene	ND	1.0	1	
Carbon Disulfide	ND	10	1	
Carbon Tetrachloride	ND	0.50	1	
Chlorobenzene	ND	1.0	1	
Chloroethane	ND	5.0	1	
Chloroform	ND	1.0	1	
Chloromethane	ND	10	1	
2-Chlorotoluene	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1	
Dibromochloromethane	ND	1.0	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1	
1,2-Dibromoethane	ND	1.0	1	
Dibromomethane	ND	1.0	1	
1,2-Dichlorobenzene	ND	1.0	1	
1,3-Dichlorobenzene	ND	1.0	1	
1,4-Dichlorobenzene	ND	1.0	1	
Dichlorodifluoromethane	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1	
1,2-Dichloroethane	ND	0.50	1	
1,1-Dichloroethene	ND	1.0	1	
c-1,2-Dichloroethene	ND	1.0	1	
t-1,2-Dichloroethene	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1	
2,2-Dichloropropane	ND	1.0	1	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

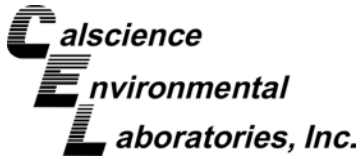
Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1	
c-1,3-Dichloropropene	ND	0.50	1	
t-1,3-Dichloropropene	ND	0.50	1	
Ethylbenzene	ND	1.0	1	
2-Hexanone	ND	10	1	
Isopropylbenzene	ND	1.0	1	
p-Isopropyltoluene	ND	1.0	1	
Methylene Chloride	ND	10	1	
4-Methyl-2-Pentanone	ND	10	1	
Naphthalene	ND	10	1	
n-Propylbenzene	ND	1.0	1	
Styrene	ND	1.0	1	
1,1,1,2-Tetrachloroethane	ND	1.0	1	
1,1,2,2-Tetrachloroethane	ND	1.0	1	
Tetrachloroethene	ND	1.0	1	
Toluene	ND	1.0	1	
1,2,3-Trichlorobenzene	ND	1.0	1	
1,2,4-Trichlorobenzene	ND	1.0	1	
1,1,1-Trichloroethane	ND	1.0	1	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,1,2-Trichloroethane	ND	1.0	1	
Trichloroethene	ND	1.0	1	
Trichlorofluoromethane	ND	10	1	
1,2,3-Trichloropropane	ND	5.0	1	
1,2,4-Trimethylbenzene	ND	1.0	1	
1,3,5-Trimethylbenzene	ND	1.0	1	
Vinyl Acetate	ND	10	1	
Vinyl Chloride	ND	0.50	1	
p/m-Xylene	ND	1.0	1	
o-Xylene	ND	1.0	1	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	96	80-120	
Dibromofluoromethane	101	80-126	
1,2-Dichloroethane-d4	105	80-134	
Toluene-d8	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B

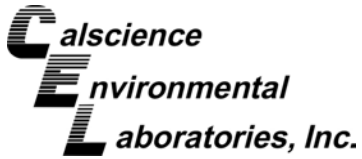
Project: Raytheon Main / 532.30

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Quality Control Sample ID	Matrix		Instrument		Date Prepared	Date Analyzed	MS/MSD Batch Number			
13-08-0578-1	Aqueous		GC/MS CC		08/09/13	08/09/13 16:52	130809S01			
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	14.67	50.00	70.36	111	68.68	108	78-120	2	0-20	
Carbon Tetrachloride	ND	50.00	58.17	116	58.66	117	67-139	1	0-20	
Chlorobenzene	ND	50.00	48.57	97	48.66	97	80-120	0	0-20	
1,2-Dibromoethane	ND	50.00	57.44	115	55.57	111	80-123	3	0-20	
1,2-Dichlorobenzene	ND	50.00	46.95	94	47.80	96	76-120	2	0-20	
1,2-Dichloroethane	ND	50.00	59.19	118	56.69	113	76-130	4	0-20	
1,1-Dichloroethene	ND	50.00	51.85	104	51.52	103	70-130	1	0-27	
Ethylbenzene	5.902	50.00	58.28	105	58.01	104	73-127	0	0-20	
Toluene	76.24	50.00	132.8	113	128.0	103	72-126	4	0-20	
Trichloroethene	ND	50.00	52.53	105	50.80	102	74-122	3	0-20	
Vinyl Chloride	ND	50.00	50.31	101	49.69	99	65-131	1	0-24	
p/m-Xylene	37.54	100.0	139.9	102	138.4	101	70-130	1	0-30	
o-Xylene	18.72	50.00	69.37	101	68.78	100	70-130	1	0-30	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	52.81	106	51.74	103	69-123	2	0-20	

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RPD: Relative Percent Difference. CL: Control Limits



Quality Control - LCS/LCSD

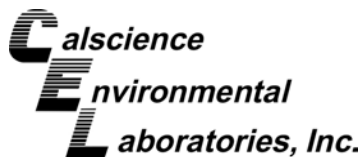
Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 3520C
Method: EPA 8270C(M) Isotope Dilution

Project: Raytheon Main / 532.30

Page 1 of 2

Quality Control Sample ID		Matrix		Instrument	Date Prepared	Date Analyzed		LCS/LCSD Batch Number	
099-09-004-2376		Aqueous		GC/MS DDD	08/08/13	08/19/13 12:59		130808L07	
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,4-Dioxane	200.0	213.1	107	207.2	104	50-130	3	0-20	



Quality Control - LCS

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 08/08/13
Work Order: 13-08-0597
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon Main / 532.30

Page 2 of 2

Quality Control Sample ID	Matrix		Instrument	Date Analyzed	LCS Batch Number	
099-14-001-11625	Aqueous		GC/MS CC	08/09/13 13:39	130809L01	
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	49.54	99	80-120	73-127	
Carbon Tetrachloride	50.00	53.96	108	66-138	54-150	
Chlorobenzene	50.00	46.94	94	80-120	73-127	
1,2-Dibromoethane	50.00	53.29	107	80-120	73-127	
1,2-Dichlorobenzene	50.00	46.76	94	80-120	73-127	
1,2-Dichloroethane	50.00	53.23	106	80-129	72-137	
1,1-Dichloroethene	50.00	47.59	95	71-131	61-141	
Ethylbenzene	50.00	49.62	99	80-123	73-130	
Toluene	50.00	49.25	98	79-121	72-128	
Trichloroethene	50.00	50.09	100	80-120	73-127	
Vinyl Chloride	50.00	46.76	94	70-136	59-147	
p/m-Xylene	100.0	96.37	96	75-125	67-133	
o-Xylene	50.00	47.29	95	75-125	67-133	
Methyl-t-Butyl Ether (MTBE)	50.00	48.26	97	72-126	63-135	

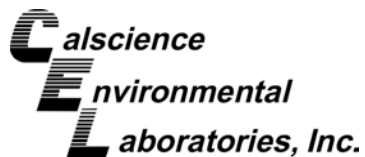
Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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Sample Analysis Summary Report

Work Order: 13-08-0597

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 8260B	EPA 5030C	856	GC/MS CC	2
EPA 8270C(M) Isotope Dilution	EPA 3520C	859	GC/MS DDD	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 13-08-0597

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

[illegible]

WORK ORDER #: **13-08-0597**

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Hargis + Assoc.

DATE: 08/08/13

TEMPERATURE: Thermometer ID: SC3 (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Temperature 3.8 °C - 0.2°C (CF) = 3.6 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Initial: DL

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present ☐ N/A

Initial: DL

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present

Initial: JD

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	☒	☐	☐
COC document(s) received complete.....	☒	☐	☐

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	☒	☐	☐

Sample container label(s) consistent with COC.....	☒	☐	☐

Sample container(s) intact and good condition.....	☒	☐	☐

Proper containers and sufficient volume for analyses requested.....	☒	☐	☐

Analyses received within holding time.....	☒	☐	☐

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen.....	☐	☐	☒

Proper preservation noted on COC or sample container.....	☒	☐	☐

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	☒	☐	☐

Tedlar bag(s) free of condensation.....	☐	☐	☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

Water: ☐ VOA ☒ VOA³ ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☒ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznna ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister **Other:** ☐ _____ **Trip Blank Lot#:** _____ **Labeled/Checked by:** JD

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** ME

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered **Scanned by:** RE

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM ANALYTICAL RESULTS

June 03, 2013

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
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1301566
Client Reference : RAYTHEON MAIN, 532.15

Enclosed are the results for sample(s) received on May 29, 2013 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,



Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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, 532.15

Report To : Steve Netto

Reported : 06/03/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEFF	1301566-01	Groundwater	5/29/13 9:15	5/29/13 10:05
TB-052913	1301566-02	Lab H2O	5/29/13 9:00	5/29/13 10:05

CASE NARRATIVE

The sample for SM 5210B (BOD) analyses was subcontracted to AETL with DOHS Cert.#1541.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID CEFF

Lab ID: 1301566-01

Total Metals by ICP-AES EPA 200.7

Analyst: SB

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	NA	1	B3E0610	05/29/2013	05/29/13 17:53	
Cadmium	ND	0.003	NA	1	B3E0610	05/29/2013	05/29/13 17:53	
Chromium	ND	0.003	NA	1	B3E0610	05/29/2013	05/29/13 17:53	
Copper	ND	0.005	NA	1	B3E0610	05/29/2013	05/29/13 17:53	
Lead	ND	0.005	NA	1	B3E0610	05/29/2013	05/29/13 17:53	
Nickel	ND	0.005	NA	1	B3E0610	05/29/2013	05/29/13 17:53	
Silver	ND	0.003	NA	1	B3E0610	05/29/2013	05/29/13 17:53	
Zinc	ND	0.01	NA	1	B3E0610	05/29/2013	05/29/13 17:53	

Mercury by AA (Cold Vapor) EPA 245.1

Analyst: VV

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	NA	1	B3E0603	05/29/2013	05/29/13 15:39	

Polychlorinated Biphenyls and Pesticides Analysis by EPA 608

Analyst: BB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
4,4'-DDE	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
4,4'-DDT	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Aldrin	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
alpha-BHC	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
alpha-Chlordane	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Aroclor 1016	ND	0.50	NA	1	B3E0605	05/29/2013	05/29/13 16:36	
Aroclor 1221	ND	1.0	NA	1	B3E0605	05/29/2013	05/29/13 16:36	
Aroclor 1232	ND	0.50	NA	1	B3E0605	05/29/2013	05/29/13 16:36	
Aroclor 1242	ND	0.50	NA	1	B3E0605	05/29/2013	05/29/13 16:36	
Aroclor 1248	ND	0.50	NA	1	B3E0605	05/29/2013	05/29/13 16:36	
Aroclor 1254	ND	0.50	NA	1	B3E0605	05/29/2013	05/29/13 16:36	
Aroclor 1260	ND	0.50	NA	1	B3E0605	05/29/2013	05/29/13 16:36	
beta-BHC	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Chlordane	ND	0.25	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
delta-BHC	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Dieldrin	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Endosulfan I	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID CEFF

Lab ID: 1301566-01

Polychlorinated Biphenyls and Pesticides Analysis by EPA 608

Analyst: BB

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan II	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Endosulfan sulfate	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Endrin	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Endrin aldehyde	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Endrin ketone	ND	0.05	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
gamma-BHC	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
gamma-Chlordane	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Heptachlor	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Heptachlor epoxide	ND	0.02	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Toxaphene	ND	2.5	NA	1	B3E0605	05/29/2013	05/29/13 19:44	
Surrogate: Decachlorobiphenyl	103 %	39 - 129			B3E0605	05/29/2013	05/29/13 16:36	
Surrogate: Decachlorobiphenyl	86.0 %	39 - 129			B3E0605	05/29/2013	05/29/13 19:44	
Surrogate: Tetrachloro-m-xylene	82.2 %	50 - 118			B3E0605	05/29/2013	05/29/13 19:44	
Surrogate: Tetrachloro-m-xylene	105 %	50 - 118			B3E0605	05/29/2013	05/29/13 16:36	

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1-Trichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,1-Dichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,1-Dichloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,2-Dichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,2-Dichloropropane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
2-Chloroethyl vinyl ether	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Acrolein	ND	10	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Acrylonitrile	ND	10	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Benzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Bromodichloromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Bromoform	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Bromomethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Carbon tetrachloride	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID CEFF

Lab ID: 1301566-01

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Chloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Chloroform	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Chloromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Dibromochloromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Ethylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
m,p-Xylene	ND	1.0	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Methylene chloride	ND	1.0	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
o-Xylene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Tetrachloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Toluene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
trans-1,3-Dichloropropene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Trichloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Trichlorofluoromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
Vinyl chloride	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 13:24	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.0 %</i>		<i>70 - 130</i>		B3E0596	05/29/2013	<i>05/29/13 13:24</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>72.7 %</i>		<i>70 - 130</i>		B3E0596	05/29/2013	<i>05/29/13 13:24</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>88.8 %</i>		<i>70 - 130</i>		B3E0596	05/29/2013	<i>05/29/13 13:24</i>	
<i>Surrogate: Toluene-d8</i>	<i>71.1 %</i>		<i>70 - 130</i>		B3E0596	05/29/2013	<i>05/29/13 13:24</i>	

Semivolatile Organic Compounds by EPA 625

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
1,2-Dichlorobenzene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
1,2-Diphenylhydrazine	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
1,3-Dichlorobenzene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
1,4-Dichlorobenzene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2,4,6-Trichlorophenol	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2,4-Dichlorophenol	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2,4-Dimethylphenol	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2,4-Dinitrophenol	ND	50	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2,4-Dinitrotoluene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2,6-Dinitrotoluene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID CEFF

Lab ID: 1301566-01

Semivolatile Organic Compounds by EPA 625

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chloronaphthalene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2-Chlorophenol	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
2-Nitrophenol	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
3,3'-Dichlorobenzidine	ND	20	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
4,6-Dinitro-2-methylphenol	ND	50	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
4-Bromophenyl-phenylether	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
4-Chloro-3-methylphenol	ND	50	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
4-Chlorophenyl-phenylether	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
4-Nitrophenol	ND	50	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Acenaphthene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Acenaphthylene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Anthracene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Benzidine (M)	ND	50	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Benzo(a)anthracene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Benzo(a)pyrene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Benzo(b)fluoranthene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Benzo(g,h,i)perylene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Benzo(k)fluoranthene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
bis(2-chloroethoxy)methane	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
bis(2-Chloroethyl)ether	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
bis(2-chloroisopropyl)ether	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
bis(2-ethylhexyl)phthalate	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Butylbenzylphthalate	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Chrysene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Di-n-butylphthalate	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Di-n-octylphthalate	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Dibenz(a,h)anthracene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Diethyl phthalate	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Dimethyl phthalate	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Fluoranthene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Fluorene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Hexachlorobenzene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Hexachlorobutadiene	ND	20	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Hexachlorocyclopentadiene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Hexachloroethane	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Indeno(1,2,3-cd)pyrene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Isophorone	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID CEFF

Lab ID: 1301566-01

Semivolatile Organic Compounds by EPA 625

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
N-Nitroso-di-n propylamine	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
N-Nitrosodimethylamine	ND	50	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
N-Nitrosodiphenylamine	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Naphthalene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Nitrobenzene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Pentachlorophenol	ND	50	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Phenanthrene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Phenol	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Pyrene	ND	10	NA	1	B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: 1,2-Dichlorobenzene-d4	84.1 %	36 - 117			B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: 2,4,6-Tribromophenol	106 %	33 - 149			B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: 2-Chlorophenol-d4	76.1 %	37 - 99			B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: 2-Fluorobiphenyl	98.1 %	52 - 126			B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: 2-Fluorophenol	49.4 %	17 - 69			B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: 4-Terphenyl-d14	123 %	40 - 165			B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: Nitrobenzene-d5	93.6 %	38 - 117			B3E0620	05/29/2013	05/29/13 19:40	
Surrogate: Phenol-d5	33.8 %	5 - 60			B3E0620	05/29/2013	05/29/13 19:40	

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664A

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Total Petroleum Hydrocarbons	ND	2.3	NA	1	B3E0616	05/29/2013	05/29/13 14:52	

Cyanide, Total by SM4500-CN E

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Cyanide, Total	ND	0.010	NA	1	B3E0615	05/29/2013	05/29/13 15:24	

Cyanide, Total by SM4500-CN G

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Cyanide, Amenable to Chlorination	ND	0.010	NA	1	B3E0615	05/29/2013	05/29/13 15:24	



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID CEFF

Lab ID: 1301566-01

pH by SM 4500H+B

Analyst: RD

Analyte	Result (pH Units)	PQL (pH Units)	MDL (pH Units)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
pH	7.7	0.10	NA	1	B3E0622	05/29/2013	05/29/13 00:00	H1

Sulfide, Total by SM 4500-S=D

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.010	NA	1	B3E0611	05/29/2013	05/29/13 12:31	

Sulfide, Dissolved by SM 4500-S=D

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Dissolved	ND	0.010	NA	1	B3E0612	05/29/2013	05/29/13 12:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID TB-052913

Lab ID: 1301566-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,1-Dichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,1-Dichloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,1-Dichloropropene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2-Dibromoethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2-Dichloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,2-Dichloropropane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,3-Dichloropropane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
2,2-Dichloropropane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
2-Chlorotoluene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
4-Chlorotoluene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
4-Isopropyltoluene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Benzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Bromobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Bromodichloromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Bromoform	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Bromomethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Carbon tetrachloride	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Chlorobenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Chloroethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Chloroform	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Chloromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Dibromochloromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Client Sample ID TB-052913

Lab ID: 1301566-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Dichlorodifluoromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Ethylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Hexachlorobutadiene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Isopropylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
m,p-Xylene	ND	1.0	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Methylene chloride	ND	1.0	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
n-Butylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
n-Propylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Naphthalene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
o-Xylene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
sec-Butylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Styrene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
tert-Butylbenzene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Tetrachloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Toluene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Trichloroethene	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Trichlorofluoromethane	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Vinyl chloride	ND	0.50	NA	1	B3E0596	05/29/2013	05/29/13 14:16	
Surrogate: 1,2-Dichloroethane-d4	101 %		70 - 130		B3E0596	05/29/2013	05/29/13 14:16	
Surrogate: 4-Bromofluorobenzene	74.6 %		70 - 130		B3E0596	05/29/2013	05/29/13 14:16	
Surrogate: Dibromofluoromethane	93.8 %		70 - 130		B3E0596	05/29/2013	05/29/13 14:16	
Surrogate: Toluene-d8	81.2 %		70 - 130		B3E0596	05/29/2013	05/29/13 14:16	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

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Report To : Steve Netto

Reported : 06/03/2013

QUALITY CONTROL SECTION

Total Metals by ICP-AES EPA 200.7 - Quality Control

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

Batch B3E0610 - EPA 200.7

Blank (B3E0610-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Arsenic	ND	0.01			NR				
Cadmium	ND	0.003			NR				
Chromium	ND	0.003			NR				
Copper	ND	0.005			NR				
Lead	ND	0.005			NR				
Nickel	ND	0.005			NR				
Silver	ND	0.003			NR				
Zinc	ND	0.01			NR				

LCS (B3E0610-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Arsenic	0.981116	0.01	1.00000		98.1	85 - 115			
Cadmium	0.969256	0.003	1.00000		96.9	85 - 115			
Chromium	0.992848	0.003	1.00000		99.3	85 - 115			
Copper	1.10654	0.005	1.00000		111	85 - 115			
Lead	1.01939	0.005	1.00000		102	85 - 115			
Nickel	0.987030	0.005	1.00000		98.7	85 - 115			
Silver	0.999965	0.003	1.00000		100	85 - 115			
Zinc	1.03262	0.01	1.00000		103	85 - 115			

Matrix Spike (B3E0610-MS1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Arsenic	2.47018	0.01	2.50000	ND	98.8	78 - 113			
Cadmium	2.38922	0.003	2.50000	4.482E-4	95.6	76 - 107			
Chromium	2.48354	0.003	2.50000	0.002572	99.2	76 - 113			
Copper	2.48734	0.005	2.50000	ND	99.5	77 - 115			
Lead	2.40590	0.005	2.50000	ND	96.2	76 - 109			
Nickel	2.37118	0.005	2.50000	0.001232	94.8	67 - 121			
Silver	2.54840	0.003	2.50000	ND	102	68 - 129			
Zinc	2.38209	0.01	2.50000	0.005320	95.1	62 - 120			

Matrix Spike Dup (B3E0610-MSD1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Arsenic	2.38474	0.01	2.50000	ND	95.4	78 - 113	3.52	20	
Cadmium	2.25021	0.003	2.50000	4.482E-4	90.0	76 - 107	5.99	20	
Chromium	2.33890	0.003	2.50000	0.002572	93.5	76 - 113	6.00	20	
Copper	2.34738	0.005	2.50000	ND	93.9	77 - 115	5.79	20	
Lead	2.31834	0.005	2.50000	ND	92.7	76 - 109	3.71	20	
Nickel	2.23483	0.005	2.50000	0.001232	89.3	67 - 121	5.92	20	
Silver	2.40294	0.003	2.50000	ND	96.1	68 - 129	5.88	20	
Zinc	2.25018	0.01	2.50000	0.005320	89.8	62 - 120	5.70	20	



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Mercury by AA (Cold Vapor) EPA 245.1 - Quality Control

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

Batch B3E0603 - EPA 245.1/7470

Blank (B3E0603-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Mercury ND 0.20 NR

LCS (B3E0603-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Mercury 10.6090 0.20 10.0000 106 85 - 115

Duplicate (B3E0603-DUP1)

Source: 1301505-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Mercury ND 0.20 ND NR 20

Matrix Spike (B3E0603-MS1)

Source: 1301505-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Mercury 10.2217 0.20 10.0000 ND 102 70 - 130

Matrix Spike Dup (B3E0603-MSD1)

Source: 1301505-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Mercury 10.3616 0.20 10.0000 ND 104 70 - 130 1.36 20

Post Spike (B3E0603-PS1)

Source: 1301505-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Mercury 5.20425 5.00000 0.002485 104 70 - 130



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Reported : 06/03/2013

Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 - Quality Control

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

Batch B3E0605 - GCSEMI_PCB/PEST

Blank (B3E0605-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

4,4'-DDD	ND	0.05			NR				
4,4'-DDD [2C]	ND	0.05			NR				
4,4'-DDE	ND	0.05			NR				
4,4'-DDE [2C]	ND	0.05			NR				
4,4'-DDT	ND	0.05			NR				
4,4'-DDT [2C]	ND	0.05			NR				
Aldrin	ND	0.02			NR				
Aldrin [2C]	ND	0.02			NR				
alpha-BHC	ND	0.02			NR				
alpha-BHC [2C]	ND	0.02			NR				
alpha-Chlordane	ND	0.02			NR				
alpha-Chlordane [2C]	ND	0.02			NR				
beta-BHC	ND	0.02			NR				
beta-BHC [2C]	ND	0.02			NR				
Chlordane	ND	0.25			NR				
Chlordane [2C]	ND	0.25			NR				
delta-BHC	ND	0.02			NR				
delta-BHC [2C]	ND	0.02			NR				
Dieldrin	ND	0.05			NR				
Dieldrin [2C]	ND	0.05			NR				
Endosulfan I	ND	0.02			NR				
Endosulfan I [2C]	ND	0.02			NR				
Endosulfan II	ND	0.05			NR				
Endosulfan II [2C]	ND	0.05			NR				
Endosulfan sulfate	ND	0.05			NR				
Endosulfan Sulfate [2C]	ND	0.05			NR				
Endrin	ND	0.05			NR				
Endrin [2C]	ND	0.05			NR				
Endrin aldehyde	ND	0.05			NR				
Endrin aldehyde [2C]	ND	0.05			NR				
Endrin ketone	ND	0.05			NR				
Endrin ketone [2C]	ND	0.05			NR				
gamma-BHC	ND	0.02			NR				
gamma-BHC [2C]	ND	0.02			NR				
gamma-Chlordane	ND	0.02			NR				
gamma-Chlordane [2C]	ND	0.02			NR				
Heptachlor	ND	0.02			NR				
Heptachlor [2C]	ND	0.02			NR				
Heptachlor epoxide	ND	0.02			NR				
Heptachlor epoxide [2C]	ND	0.02			NR				
Toxaphene	ND	2.5			NR				



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Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 - Quality Control (cont'd)

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

Batch B3E0605 - GCSEMI_PCB/PEST (continued)

Blank (B3E0605-BLK1) - Continued

Prepared: 5/29/2013 Analyzed: 5/29/2013

Toxaphene [2C]	ND	2.5			NR				
Surrogate: Decachlorobiphenyl	0.3923		0.500000		78.5	39 - 129			
Surrogate: Decachlorobiphenyl [2C]	0.4196		0.500000		83.9	39 - 129			
Surrogate: Tetrachloro-m-xylene	0.3630		0.500000		72.6	50 - 118			
Surrogate: Tetrachloro-m-xylene [2C]	0.3495		0.500000		69.9	50 - 118			

Blank (B3E0605-BLK2)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Aroclor 1016	ND	0.50			NR				
Aroclor 1221	ND	1.0			NR				
Aroclor 1232	ND	0.50			NR				
Aroclor 1242	ND	0.50			NR				
Aroclor 1248	ND	0.50			NR				
Aroclor 1254	ND	0.50			NR				
Aroclor 1260	ND	0.50			NR				
Surrogate: Decachlorobiphenyl	0.4311		0.500000		86.2	39 - 129			
Surrogate: Tetrachloro-m-xylene	0.4574		0.500000		91.5	50 - 118			

LCS (B3E0605-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

4,4'-DDT	0.399810	0.05	0.500000		80.0	56 - 111			
4,4'-DDT [2C]	0.406685	0.05	0.500000		81.3	56 - 111			
Aldrin	0.401680	0.02	0.500000		80.3	56 - 113			
Aldrin [2C]	0.376510	0.02	0.500000		75.3	56 - 113			
Dieldrin	0.387570	0.05	0.500000		77.5	55 - 113			
Dieldrin [2C]	0.371105	0.05	0.500000		74.2	55 - 113			
Endrin	0.424405	0.05	0.500000		84.9	55 - 101			
Endrin [2C]	0.449430	0.05	0.500000		89.9	55 - 101			
gamma-BHC	0.414690	0.02	0.500000		82.9	61 - 110			
gamma-BHC [2C]	0.391670	0.02	0.500000		78.3	61 - 110			
Heptachlor	0.433145	0.02	0.500000		86.6	67 - 110			
Heptachlor [2C]	0.429375	0.02	0.500000		85.9	67 - 110			
Surrogate: Decachlorobiphenyl	0.4298		0.500000		86.0	39 - 129			
Surrogate: Decachlorobiphenyl [2C]	0.4577		0.500000		91.5	39 - 129			
Surrogate: Tetrachloro-m-xylene	0.4032		0.500000		80.6	50 - 118			
Surrogate: Tetrachloro-m-xylene [2C]	0.3888		0.500000		77.8	50 - 118			

LCS (B3E0605-BS2)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Aroclor 1016	4.10770	0.50	5.00000		82.2	64 - 102			
Aroclor 1260	4.35026	0.50	5.00000		87.0	68 - 100			
Surrogate: Decachlorobiphenyl	0.4477		0.500000		89.5	39 - 129			
Surrogate: Tetrachloro-m-xylene	0.4551		0.500000		91.0	50 - 118			



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Polychlorinated Biphenyls and Pesticides Analysis by EPA 608 - Quality Control (cont'd)

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

Batch B3E0605 - GCSEMI_PCB/PEST (continued)

LCS Dup (B3E0605-BS01)

Prepared: 5/29/2013 Analyzed: 5/29/2013

4,4'-DDT	0.389045	0.05	0.500000		77.8	56 - 111	2.73	20	
4,4'-DDT [2C]	0.392835	0.05	0.500000		78.6	56 - 111	3.46	20	
Aldrin	0.392955	0.02	0.500000		78.6	56 - 113	2.20	20	
Aldrin [2C]	0.368745	0.02	0.500000		73.7	56 - 113	2.08	20	
Dieldrin	0.376880	0.05	0.500000		75.4	55 - 113	2.80	20	
Dieldrin [2C]	0.360535	0.05	0.500000		72.1	55 - 113	2.89	20	
Endrin	0.409025	0.05	0.500000		81.8	55 - 101	3.69	20	
Endrin [2C]	0.432625	0.05	0.500000		86.5	55 - 101	3.81	20	
gamma-BHC	0.408305	0.02	0.500000		81.7	61 - 110	1.55	20	
gamma-BHC [2C]	0.385725	0.02	0.500000		77.1	61 - 110	1.53	20	
Heptachlor	0.424445	0.02	0.500000		84.9	67 - 110	2.03	20	
Heptachlor [2C]	0.420835	0.02	0.500000		84.2	67 - 110	2.01	20	

Surrogate: Decachlorobiphenyl	0.4091		0.500000		81.8	39 - 129			
Surrogate: Decachlorobiphenyl [2C]	0.4358		0.500000		87.2	39 - 129			
Surrogate: Tetrachloro-m-xylene	0.3974		0.500000		79.5	50 - 118			
Surrogate: Tetrachloro-m-xylene [2C]	0.4085		0.500000		81.7	50 - 118			

LCS Dup (B3E0605-BS02)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Aroclor 1016	4.23466	0.50	5.00000		84.7	64 - 102	3.04	20	
Aroclor 1260	4.38060	0.50	5.00000		87.6	68 - 100	0.695	20	
Surrogate: Decachlorobiphenyl	0.4511		0.500000		90.2	39 - 129			
Surrogate: Tetrachloro-m-xylene	0.4569		0.500000		91.4	50 - 118			



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Volatile Organic Compounds by EPA 624 - Quality Control

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

Batch B3E0596 - MSVOAW_LL

Blank (B3E0596-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,1,1-Trichloroethane	ND	0.50			NR				
1,1,2,2-Tetrachloroethane	ND	0.50			NR				
1,1,2-Trichloroethane	ND	0.50			NR				
1,1-Dichloroethane	ND	0.50			NR				
1,1-Dichloroethene	ND	0.50			NR				
1,2-Dichlorobenzene	ND	0.50			NR				
1,2-Dichloroethane	ND	0.50			NR				
1,2-Dichloropropane	ND	0.50			NR				
1,3-Dichlorobenzene	ND	0.50			NR				
1,4-Dichlorobenzene	ND	0.50			NR				
2-Chloroethyl vinyl ether	ND	0.50			NR				
Acrolein	ND	10			NR				
Acrylonitrile	ND	10			NR				
Benzene	ND	0.50			NR				
Bromodichloromethane	ND	0.50			NR				
Bromoform	ND	0.50			NR				
Bromomethane	ND	0.50			NR				
Carbon tetrachloride	ND	0.50			NR				
Chlorobenzene	ND	0.50			NR				
Chloroethane	ND	0.50			NR				
Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
o-Xylene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
trans-1,3-Dichloropropene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	24.03	25.0000	96.1	70 - 130
Surrogate: 4-Bromofluorobenzene	18.61	25.0000	74.4	70 - 130
Surrogate: Dibromofluoromethane	22.68	25.0000	90.7	70 - 130
Surrogate: Toluene-d8	18.43	25.0000	73.7	70 - 130

LCS (B3E0596-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013



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Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

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

Batch B3E0596 - MSVOAW_LL (continued)

LCS (B3E0596-BS1) - Continued

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,1-Dichloroethene	19.4600		20.0000		97.3	70 - 130			
Benzene	38.3600		40.0000		95.9	70 - 130			
Chlorobenzene	17.0200		20.0000		85.1	70 - 130			
Toluene	40.2000		40.0000		100	70 - 130			
Trichloroethene	17.4700		20.0000		87.4	70 - 130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.85</i>		<i>25.0000</i>		<i>95.4</i>	<i>70 - 130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>19.50</i>		<i>25.0000</i>		<i>78.0</i>	<i>70 - 130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>22.98</i>		<i>25.0000</i>		<i>91.9</i>	<i>70 - 130</i>			
<i>Surrogate: Toluene-d8</i>	<i>21.72</i>		<i>25.0000</i>		<i>86.9</i>	<i>70 - 130</i>			

LCS Dup (B3E0596-BSD1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,1-Dichloroethene	19.4600		20.0000		97.3	70 - 130	0.00	20	
Benzene	38.2700		40.0000		95.7	70 - 130	0.235	20	
Chlorobenzene	16.4700		20.0000		82.4	70 - 130	3.28	20	
Toluene	39.6500		40.0000		99.1	70 - 130	1.38	20	
Trichloroethene	17.3700		20.0000		86.8	70 - 130	0.574	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.75</i>		<i>25.0000</i>		<i>95.0</i>	<i>70 - 130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>19.32</i>		<i>25.0000</i>		<i>77.3</i>	<i>70 - 130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>23.30</i>		<i>25.0000</i>		<i>93.2</i>	<i>70 - 130</i>			
<i>Surrogate: Toluene-d8</i>	<i>21.93</i>		<i>25.0000</i>		<i>87.7</i>	<i>70 - 130</i>			



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Semivolatile Organic Compounds by EPA 625 - Quality Control

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

Batch B3E0620 - MSSEMI_ISOTOPEDILN

Blank (B3E0620-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,2,4-Trichlorobenzene	ND	10			NR				
1,2-Dichlorobenzene	ND	10			NR				
1,2-Diphenylhydrazine	ND	10			NR				
1,3-Dichlorobenzene	ND	10			NR				
1,4-Dichlorobenzene	ND	10			NR				
2,4,6-Trichlorophenol	ND	10			NR				
2,4-Dichlorophenol	ND	10			NR				
2,4-Dimethylphenol	ND	10			NR				
2,4-Dinitrophenol	ND	50			NR				
2,4-Dinitrotoluene	ND	10			NR				
2,6-Dinitrotoluene	ND	10			NR				
2-Chloronaphthalene	ND	10			NR				
2-Chlorophenol	ND	10			NR				
2-Nitrophenol	ND	10			NR				
3,3'-Dichlorobenzidine	ND	20			NR				
4,6-Dinitro-2-methylphenol	ND	50			NR				
4-Bromophenyl-phenylether	ND	10			NR				
4-Chloro-3-methylphenol	ND	50			NR				
4-Chlorophenyl-phenylether	ND	10			NR				
4-Nitrophenol	ND	50			NR				
Acenaphthene	ND	10			NR				
Acenaphthylene	ND	10			NR				
Anthracene	ND	10			NR				
Benzidine (M)	ND	50			NR				
Benzo(a)anthracene	ND	10			NR				
Benzo(a)pyrene	ND	10			NR				
Benzo(b)fluoranthene	ND	10			NR				
Benzo(g,h,i)perylene	ND	10			NR				
Benzo(k)fluoranthene	ND	10			NR				
bis(2-chloroethoxy)methane	ND	10			NR				
bis(2-Chloroethyl)ether	ND	10			NR				
bis(2-chloroisopropyl)ether	ND	10			NR				
bis(2-ethylhexyl)phthalate	ND	10			NR				
Butylbenzylphthalate	ND	10			NR				
Chrysene	ND	10			NR				
Di-n-butylphthalate	ND	10			NR				
Di-n-octylphthalate	ND	10			NR				
Dibenz(a,h)anthracene	ND	10			NR				
Diethyl phthalate	ND	10			NR				
Dimethyl phthalate	ND	10			NR				
Fluoranthene	ND	10			NR				



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

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

Batch B3E0620 - MSSEMI_ISOTOPEDILN (continued)

Blank (B3E0620-BLK1) - Continued

Prepared: 5/29/2013 Analyzed: 5/29/2013

Fluorene	ND	10			NR				
Hexachlorobenzene	ND	10			NR				
Hexachlorobutadiene	ND	20			NR				
Hexachlorocyclopentadiene	ND	10			NR				
Hexachloroethane	ND	10			NR				
Indeno(1,2,3-cd)pyrene	ND	10			NR				
Isophorone	ND	10			NR				
N-Nitroso-di-n propylamine	ND	10			NR				
N-Nitrosodimethylamine	ND	50			NR				
N-Nitrosodiphenylamine	ND	10			NR				
Naphthalene	ND	10			NR				
Nitrobenzene	ND	10			NR				
Pentachlorophenol	ND	50			NR				
Phenanthrene	ND	10			NR				
Phenol	ND	10			NR				
Pyrene	ND	10			NR				

Surrogate: 1,2-Dichlorobenzene-d4	84.06		100.000	84.1	36 - 117
Surrogate: 2,4,6-Tribromophenol	108.0		100.000	108	33 - 149
Surrogate: 2-Chlorophenol-d4	77.43		100.000	77.4	37 - 99
Surrogate: 2-Fluorobiphenyl	95.40		100.000	95.4	52 - 126
Surrogate: 2-Fluorophenol	51.65		100.000	51.6	17 - 69
Surrogate: 4-Terphenyl-d14	129.8		100.000	130	40 - 165
Surrogate: Nitrobenzene-d5	91.97		100.000	92.0	38 - 117
Surrogate: Phenol-d5	36.03		100.000	36.0	5 - 60

LCS (B3E0620-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,2,4-Trichlorobenzene	98.1000	10	100.000	98.1	61 - 108
1,4-Dichlorobenzene	89.4900	10	100.000	89.5	54 - 98
2,4-Dinitrotoluene	116.700	10	100.000	117	79 - 130
2-Chlorophenol	81.7800	10	100.000	81.8	54 - 91
4-Chloro-3-methylphenol	102.180	50	100.000	102	75 - 109
4-Nitrophenol	53.1100	50	100.000	53.1	31 - 69
Acenaphthene	110.920	10	100.000	111	76 - 118
N-Nitroso-di-n propylamine	99.8000	10	100.000	99.8	52 - 119
Pentachlorophenol	99.5600	50	100.000	99.6	74 - 128
Phenol	37.8500	10	100.000	37.8	23 - 49
Pyrene	127.630	10	100.000	128	75 - 135

Surrogate: 1,2-Dichlorobenzene-d4	88.48		100.000	88.5	36 - 117
Surrogate: 2,4,6-Tribromophenol	115.8		100.000	116	33 - 149
Surrogate: 2-Chlorophenol-d4	81.61		100.000	81.6	37 - 99
Surrogate: 2-Fluorobiphenyl	103.1		100.000	103	52 - 126



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Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

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Semivolatile Organic Compounds by EPA 625 - Quality Control (cont'd)

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

Batch B3E0620 - MSSEMI_ISOTOPEDILN (continued)

LCS (B3E0620-BS1) - Continued

Prepared: 5/29/2013 Analyzed: 5/29/2013

Surrogate: 2-Fluorophenol	51.35		100.000		51.4	17 - 69			
Surrogate: 4-Terphenyl-d14	110.9		100.000		111	40 - 165			
Surrogate: Nitrobenzene-d5	95.15		100.000		95.2	38 - 117			
Surrogate: Phenol-d5	36.65		100.000		36.6	5 - 60			

LCS Dup (B3E0620-BSD1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,2,4-Trichlorobenzene	97.7900	10	100.000		97.8	61 - 108	0.317	20	
1,4-Dichlorobenzene	90.7100	10	100.000		90.7	54 - 98	1.35	20	
2,4-Dinitrotoluene	118.400	10	100.000		118	79 - 130	1.45	20	
2-Chlorophenol	83.5200	10	100.000		83.5	54 - 91	2.11	20	
4-Chloro-3-methylphenol	102.440	50	100.000		102	75 - 109	0.254	20	
4-Nitrophenol	55.8400	50	100.000		55.8	31 - 69	5.01	20	
Acenaphthene	112.330	10	100.000		112	76 - 118	1.26	20	
N-Nitroso-di-n propylamine	100.270	10	100.000		100	52 - 119	0.470	20	
Pentachlorophenol	103.370	50	100.000		103	74 - 128	3.75	20	
Phenol	40.1800	10	100.000		40.2	23 - 49	5.97	20	
Pyrene	127.180	10	100.000		127	75 - 135	0.353	20	
Surrogate: 1,2-Dichlorobenzene-d4	85.55		100.000		85.6	36 - 117			
Surrogate: 2,4,6-Tribromophenol	115.0		100.000		115	33 - 149			
Surrogate: 2-Chlorophenol-d4	80.22		100.000		80.2	37 - 99			
Surrogate: 2-Fluorobiphenyl	103.0		100.000		103	52 - 126			
Surrogate: 2-Fluorophenol	52.85		100.000		52.8	17 - 69			
Surrogate: 4-Terphenyl-d14	110.0		100.000		110	40 - 165			
Surrogate: Nitrobenzene-d5	94.30		100.000		94.3	38 - 117			
Surrogate: Phenol-d5	37.90		100.000		37.9	5 - 60			



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Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Total Petroleum Hydrocarbons, HEM/SGT EPA 1664A - Quality Control

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

Batch B3E0616 - Prep_WC_2_W

Blank (B3E0616-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Total Petroleum Hydrocarbons

ND

2.0

NR

LCS (B3E0616-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Total Petroleum Hydrocarbons

18.9000

2.0

20.0000

94.5

78 - 114

LCS Dup (B3E0616-BSD1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Total Petroleum Hydrocarbons

18.7000

2.0

20.0000

93.5

78 - 114

1.06

20



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Project Number : RAYTHEON MAIN, 532.15

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Reported : 06/03/2013

Cyanide, Total by SM4500-CN E - Quality Control

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

Batch B3E0615 - Prep_WC_3_W

Blank (B3E0615-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Total	ND	0.010			NR				



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Report To : Steve Netto

Reported : 06/03/2013

Cyanide, Total by SM4500-CN E - Quality Control (cont'd)

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

Batch B3E0615 - Prep_WC_3_W (continued)

LCS (B3E0615-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Total	0.403000	0.010	0.400000	101	80 - 120



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Reported : 06/03/2013

Cyanide, Total by SM4500-CN E - Quality Control (cont'd)

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

Batch B3E0615 - Prep_WC_3_W (continued)

Matrix Spike (B3E0615-MS1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Total	0.389000	0.010	0.400000	ND	97.2	80 - 120



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Reported : 06/03/2013

Cyanide, Total by SM4500-CN E - Quality Control (cont'd)

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

Batch B3E0615 - Prep_WC_3_W (continued)

Matrix Spike Dup (B3E0615-MSD1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Total	0.389000	0.010	0.400000	ND	97.2	80 - 120	0.00	20	



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Reported : 06/03/2013

Cyanide, Total by SM4500-CN G - Quality Control

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

Batch B3E0615 - Prep_WC_3_W

Blank (B3E0615-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Amenable to Chlorination

ND

0.010

NR



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Report To : Steve Netto

Reported : 06/03/2013

Cyanide, Total by SM4500-CN G - Quality Control (cont'd)

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

Batch B3E0615 - Prep_WC_3_W (continued)

LCS (B3E0615-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Amenable to Chlorination	ND	0.010	0.400000		NR	80 - 120			



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Cyanide, Total by SM4500-CN G - Quality Control (cont'd)

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

Batch B3E0615 - Prep_WC_3_W (continued)

Matrix Spike (B3E0615-MS1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Amenable to Chlorination

ND

0.010

0.400000

ND

NR

80 - 120



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Cyanide, Total by SM4500-CN G - Quality Control (cont'd)

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

Batch B3E0615 - Prep_WC_3_W (continued)

Matrix Spike Dup (B3E0615-MSD1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Cyanide, Amenable to Chlorination	ND	0.010	0.400000	ND	NR	80 - 120	20



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pH by SM 4500H+B - Quality Control

Analyte	Result (pH Units)	PQL (pH Units)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B3E0622 - No Prep-Sample Control

Duplicate (B3E0622-DUP1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

pH	7.67000	0.10		7.66000	NR		0.130	10	H1



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Sulfide, Total by SM 4500-S=D - Quality Control

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

Batch B3E0611 - Prep_WC_3_W

Blank (B3E0611-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Total	ND	0.010			NR				



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Reported : 06/03/2013

Sulfide, Total by SM 4500-S=D - Quality Control (cont'd)

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

Batch B3E0611 - Prep_WC_3_W (continued)

LCS (B3E0611-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Total	0.0961	0.010	0.100000	96.1	80 - 120



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Report To : Steve Netto

Reported : 06/03/2013

Sulfide, Total by SM 4500-S=D - Quality Control (cont'd)

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

Batch B3E0611 - Prep_WC_3_W (continued)

Matrix Spike (B3E0611-MS1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Total	0.0963	0.010	0.100000	ND	96.3	70 - 120



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Reported : 06/03/2013

Sulfide, Total by SM 4500-S=D - Quality Control (cont'd)

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

Batch B3E0611 - Prep_WC_3_W (continued)

Matrix Spike Dup (B3E0611-MSD1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Total	0.0965	0.010	0.100000	ND	96.5	70 - 120	0.207	20	



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Reported : 06/03/2013

Sulfide, Dissolved by SM 4500-S=D - Quality Control

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

Batch B3E0612 - Prep_WC_3_W

Blank (B3E0612-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Dissolved

ND

0.010

NR



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Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Sulfide, Dissolved by SM 4500-S=D - Quality Control (cont'd)

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

Batch B3E0612 - Prep_WC_3_W (continued)

LCS (B3E0612-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Dissolved	0.0971	0.010	0.100000	97.1	80 - 120



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Sulfide, Dissolved by SM 4500-S=D - Quality Control (cont'd)

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

Batch B3E0612 - Prep_WC_3_W (continued)

Matrix Spike (B3E0612-MS1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Dissolved	0.0962	0.010	0.100000	0.004	92.2	80 - 120



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Sulfide, Dissolved by SM 4500-S=D - Quality Control (cont'd)

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

Batch B3E0612 - Prep_WC_3_W (continued)

Matrix Spike Dup (B3E0612-MSD1)

Source: 1301566-01

Prepared: 5/29/2013 Analyzed: 5/29/2013

Sulfide, Dissolved	0.0966	0.010	0.100000	0.004	92.6	80 - 120	0.415	20	



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Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3E0596 - MSVOAW_LL

Blank (B3E0596-BLK1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR



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

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

Batch B3E0596 - MSVOAW_LL (continued)

Blank (B3E0596-BLK1) - Continued

Prepared: 5/29/2013 Analyzed: 5/29/2013

Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	24.03		25.0000		96.1	70 - 130			
Surrogate: 4-Bromofluorobenzene	18.61		25.0000		74.4	70 - 130			
Surrogate: Dibromofluoromethane	22.68		25.0000		90.7	70 - 130			
Surrogate: Toluene-d8	18.43		25.0000		73.7	70 - 130			



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Report To : Steve Netto

Reported : 06/03/2013

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

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

Batch B3E0596 - MSVOAW_LL (continued)

LCS (B3E0596-BS1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,1-Dichloroethene	19.4600		20.0000		97.3	70 - 130			
Benzene	38.3600		40.0000		95.9	70 - 130			
Chlorobenzene	17.0200		20.0000		85.1	70 - 130			
MTBE	22.5700		20.0000		113	70 - 130			
Toluene	40.2000		40.0000		100	70 - 130			
Trichloroethene	17.4700		20.0000		87.4	70 - 130			

Surrogate: 1,2-Dichloroethane-d4 23.85 25.0000 95.4 70 - 130

Surrogate: 4-Bromofluorobenzene 19.50 25.0000 78.0 70 - 130

Surrogate: Dibromofluoromethane 22.98 25.0000 91.9 70 - 130

Surrogate: Toluene-d8 21.72 25.0000 86.9 70 - 130



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

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

Batch B3E0596 - MSVOAW_LL (continued)

LCS Dup (B3E0596-BSD1)

Prepared: 5/29/2013 Analyzed: 5/29/2013

1,1-Dichloroethene	19.4600		20.0000		97.3	70 - 130	0.00	20	
Benzene	38.2700		40.0000		95.7	70 - 130	0.235	20	
Chlorobenzene	16.4700		20.0000		82.4	70 - 130	3.28	20	
MTBE	23.0300		20.0000		115	70 - 130	2.02	20	
Toluene	39.6500		40.0000		99.1	70 - 130	1.38	20	
Trichloroethene	17.3700		20.0000		86.8	70 - 130	0.574	20	

Surrogate: 1,2-Dichloroethane-d4 23.75 25.0000 95.0 70 - 130

Surrogate: 4-Bromofluorobenzene 19.32 25.0000 77.3 70 - 130

Surrogate: Dibromofluoromethane 23.30 25.0000 93.2 70 - 130

Surrogate: Toluene-d8 21.93 25.0000 87.7 70 - 130



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 06/03/2013

Notes and Definitions

H1	Sample was received past holding time.
ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.



American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Number of Pages 2
Date Received 05/29/2013
Date Reported 06/03/2013

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
69659	05/29/2013	ATL

Project ID: 1301566
Project Name: PO# SC08024

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____

Approved By: _____

Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181

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Page: 1 A

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Project ID: 1301566

Date Received 05/29/2013

Date Reported 06/03/2013

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
69659	05/29/2013	ATL

CERTIFICATE OF ANALYSIS CASE NARRATIVE

AETL received 1 samples with the following specification on 05/29/2013.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers		
69659.01	1301566-01	05/29/2013	Aqueous	1		
	Method ^ Submethod		Req Date	Priority	TAT	Units
	SM5210B		05/29/2013	1	Rush	mg/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: 

Approved By: 

Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
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ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045

Attn: Rachelle Arada

Page: 2

Project ID: 1301566

Project Name: PO# SC08024

AETL Job Number	Submitted	Client
69659	05/29/2013	ATL

Method: SM5210B, Biochemical Oxygen Demand 5 days, @ 20C (Standard Methods)

QC Batch No: 052913-1

Our Lab I.D.		Method Blank	69659.01			
Client Sample I.D.			1301566-01			
Date Sampled			05/29/2013			
Date Prepared		05/29/2013	05/29/2013			
Preparation Method		SM5210B	SM5210B			
Date Analyzed		06/03/2013	06/03/2013			
Matrix		Aqueous	Aqueous			
Units		mg/L	mg/L			
Dilution Factor		1	1			
Analytes	MDL	PQL	Results	Results		
Biochemical Oxygen Demand (BOD)	5.0	5.0	ND	ND		

QUALITY CONTROL REPORT

QC Batch No: 052913-1; Dup or Spiked Sample: 69654.01; LCS: Clean Water; LCS Prepared: 05/29/2013; LCS Analyzed: 06/03/2013;

Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Biochemical Oxygen Demand (BOD)	707	707	<1	<15	198	172	86.9	80-120		



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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected. However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.



American Environmental Testing Laboratory Inc.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

69659

ADVANCED TECHNOLOGY
LABORATORIES
SUBCONTRACT ORDER
Work Order: 1301566

SENDING LABORATORY:

Advanced Technology Laboratories
 3275 Walnut Avenue
 Signal Hill, CA 90755
 Phone: 562.989.4045
 Fax: 562.989.6348
 Project Manager: Rachelle Arada

RECEIVING LABORATORY:

AETL
 2834 North Naomi Street
 Burbank, CA 91504
 Phone : (818) 845-8200
 Fax: (818) 845-8840
 PO#: SC08024-RUSH DUE ASAP (RA)

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

Analysis	Due	Expires		Sampled
ATL Lab#: 1301566-01 / CEFF				
405.1_5210B	06/05/13 15:00	05/31/13 09:15	69659.01 Groundwater	05/29/13 09:15
[Biochemical Oxygen Demand]				
1-Poly Unpres - 1000mL				

Comments:

ARPER MAMONTX	5/29/13	[Signature]	5/29/13	1255
Released By	Date	Received By	Date	
[Signature]	5/29/13	Jean Claude	5/29/13	1445
Released By	Date	Received By	Date	



DATE 5/29/13 PAGE 2 OF 3

Page 51 of 52

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 5/29/13 PAGE 3 OF 3

PROJECT NAME RAYTHEON MAIN				PROJECT No./TASK No. 532.15				SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION	
PROJECT MANAGER Steve Netto				Phone No. 858-455-6500				16 oz plastic 32 oz plastic 32 oz clear glass 40 mL VOA vial Metals by EPA 200.7 LAS Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn BOD by SM 5210B Oil & Grease Min. by EPA 1664A Total Toxic Organics by EPA 624				24 Hour TAT		ATL			
QA MANAGER				Fax No. 858-455-6533										Attn: Rachelle Arada			
SAMPLER (SIGNATURE) Daniel Mora Kevin Fong				SAMPLER (PRINTED) Kevin Fong													
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION						REMARKS					
		Date	Time	Soil	Ground water	Surface water	Lab H ₂ O	HCl	HNO ₃	NaOH	H ₂ SO ₄		Ice				
	CEFF	5/29/13	9:15	X				X		X							
				X				X		X							
				X				X		X							
				X				X		X							
	FB052813	5/29/13	9:00														
	FB 052913	5/29/13	9:00					X	X		X						KF
Total number of Containers per analysis: 1 1 1 3 Total No. of Containers: 6																	
Relinquished by: [Signature]				Date: 5/29/13		Received by: [Signature]				Date: 5/29/13		INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.					
Company: H+A, INC				Time: 1005		Company: ATL				Time: 1005							
Relinquished by: [Signature]				Date: 5/29/13		Received by: C. Gyulak				Date: 5/29		Sample Receipt: ☐ No. of containers correct ☐ custody seals secure Temp. @ receipt _____ °C ☐ received good condition/cold ☐ conforms to COC document					
Company: ATL				Time: 1054		Company: ATL				Time: 1054							
Shipment Method: Send Results to: Steve Netto ☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 124 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300 Send invoice to San Diego, CA Attn: Accounts Payable																	

14 TOTAL

June 24, 2013

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
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1301748

Client Reference : Raytheon Main: Fullerton Quarterly, 532.15

Enclosed are the results for sample(s) received on June 13, 2013 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,



Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EW-02	1301748-01	Groundwater	6/13/13 9:55	6/13/13 12:29
POX	1301748-02	Groundwater	6/13/13 10:40	6/13/13 12:29

CASE NARRATIVE

The sample for SM 2320B (Alkalinity) analysis was subcontracted to AETL with DOHS Cert.#1541.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

Client Sample ID EW-02

Lab ID: 1301748-01

Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	110	10	NA	20	B3F0311	06/14/2013	06/14/13 14:27	
Nitrate as N	5.4	0.10	NA	1	B3F0311	06/14/2013	06/14/13 11:25	
Nitrite, as N	ND	0.10	NA	1	B3F0311	06/14/2013	06/14/13 11:25	
ortho-Phosphate (As P)	ND	0.05	NA	1	B3F0311	06/14/2013	06/14/13 11:25	
Sulfate	160	20	NA	20	B3F0311	06/14/2013	06/14/13 14:27	

Total Organic Carbon by SM 5310B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	NA	1	B3F0429	06/20/2013	06/20/13 12:41	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	NA	1	B3F0336	06/17/2013	06/17/13 14:15	

Total Metals by ICP-AES EPA 6010B

Analyst: AG

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	0.015	0.010	NA	1	B3F0393	06/19/2013	06/19/13 15:39	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: AG

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	79	0.50	NA	1	B3F0427	06/20/2013	06/21/13 11:18	
Iron	ND	0.50	NA	1	B3F0427	06/20/2013	06/21/13 11:18	
Magnesium	26	0.10	NA	1	B3F0427	06/20/2013	06/21/13 11:18	
Manganese	ND	0.50	NA	1	B3F0427	06/20/2013	06/21/13 11:18	
Selenium	ND	0.010	NA	1	B3F0427	06/20/2013	06/21/13 11:18	
Sodium	93	1.0	NA	1	B3F0427	06/20/2013	06/21/13 11:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

Client Sample ID POX

Lab ID: 1301748-02

Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	110	10	NA	20	B3F0311	06/14/2013	06/14/13 14:39	
Nitrate as N	5.3	0.10	NA	1	B3F0311	06/14/2013	06/14/13 11:36	
Nitrite, as N	ND	0.10	NA	1	B3F0311	06/14/2013	06/14/13 11:36	
ortho-Phosphate (As P)	ND	0.05	NA	1	B3F0311	06/14/2013	06/14/13 11:36	
Sulfate	160	20	NA	20	B3F0311	06/14/2013	06/14/13 14:39	

Total Organic Carbon by SM 5310B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	NA	1	B3F0429	06/20/2013	06/20/13 13:25	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	15	5.0	NA	1	B3F0336	06/17/2013	06/17/13 14:15	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

QUALITY CONTROL SECTION

Anions Scan by Ion Chromatography EPA 300.0 - Quality Control

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

Batch B3F0311 - No_Prep_IC_1

Blank (B3F0311-BLK1)

Prepared: 6/14/2013 Analyzed: 6/14/2013

Chloride	ND	0.50			NR				
Nitrate as N	ND	0.10			NR				
Nitrite, as N	ND	0.10			NR				
ortho-Phosphate (As P)	ND	0.05			NR				
Sulfate	ND	1.0			NR				

LCS (B3F0311-BS1)

Prepared: 6/14/2013 Analyzed: 6/14/2013

Chloride	1.02890	0.50	1.00000		103	90 - 110			
Nitrate as N	0.951200	0.10	1.00000		95.1	90 - 110			
Nitrite, as N	0.979500	0.10	1.00000		98.0	90 - 110			
ortho-Phosphate (As P)	1.02000	0.05	1.00000		102	90 - 110			
Sulfate	2.05520	1.0	2.00000		103	90 - 110			

Duplicate (B3F0311-DUP1)

Source: 1301753-02

Prepared: 6/14/2013 Analyzed: 6/14/2013

Chloride	71.2220	5.0		100.451	NR		34.1	20	R
Nitrate as N	1.28400	1.0		1.27610	NR		0.617	20	
Nitrite, as N	ND	1.0		ND	NR			20	
ortho-Phosphate (As P)	ND	0.50		ND	NR			20	
Sulfate	47.3970	10		54.2134	NR		13.4	20	

Matrix Spike (B3F0311-MS1)

Source: 1301753-02

Prepared: 6/14/2013 Analyzed: 6/14/2013

Chloride	72.2280	5.0	2.50000	100.451	-1130	80 - 120			M1
Nitrate as N	3.51400	1.0	2.50000	1.27610	89.5	80 - 120			
Nitrite, as N	2.95000	1.0	2.50000	ND	118	80 - 120			
ortho-Phosphate (As P)	3.25300	0.50	2.50000	ND	130	80 - 120			M1
Sulfate	64.0010	10	5.00000	54.2134	196	80 - 120			M1

Matrix Spike Dup (B3F0311-MSD1)

Source: 1301753-02

Prepared: 6/14/2013 Analyzed: 6/14/2013

Chloride	71.7710	5.0	2.50000	100.451	-1150	80 - 120	0.635	20	M1
Nitrate as N	3.57500	1.0	2.50000	1.27610	92.0	80 - 120	1.72	20	
Nitrite, as N	2.94300	1.0	2.50000	ND	118	80 - 120	0.238	20	
ortho-Phosphate (As P)	3.21600	0.50	2.50000	ND	129	80 - 120	1.14	20	M1
Sulfate	63.5290	10	5.00000	54.2134	186	80 - 120	0.740	20	M1



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

Total Organic Carbon by SM 5310B - Quality Control

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

Batch B3F0429 - No_Prep_II_W

Blank (B3F0429-BLK1)

Prepared: 6/20/2013 Analyzed: 6/20/2013

Organic Carbon, Total ND 3.0 NR

LCS (B3F0429-BS1)

Prepared: 6/20/2013 Analyzed: 6/20/2013

Organic Carbon, Total 21.5500 3.0 20.0000 108 80 - 120

Matrix Spike (B3F0429-MS1)

Source: 1301748-01

Prepared: 6/20/2013 Analyzed: 6/20/2013

Organic Carbon, Total 23.3300 3.0 20.0000 2.26000 105 80 - 120

Matrix Spike Dup (B3F0429-MSD1)

Source: 1301748-01

Prepared: 6/20/2013 Analyzed: 6/20/2013

Organic Carbon, Total 22.2600 3.0 20.0000 2.26000 100 80 - 120 4.69 20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

Chemical Oxygen Demand by EPA 410.4 - Quality Control

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

Batch B3F0336 - Prep_WC_1_W

Blank (B3F0336-BLK1)

Prepared: 6/17/2013 Analyzed: 6/17/2013

Chemical Oxygen Demand

ND

5.0

NR

LCS (B3F0336-BS1)

Prepared: 6/17/2013 Analyzed: 6/17/2013

Chemical Oxygen Demand

492.228

5.0

501.500

98.2

80 - 120

Matrix Spike (B3F0336-MS1)

Source: 1301718-01

Prepared: 6/17/2013 Analyzed: 6/17/2013

Chemical Oxygen Demand

509.597

5.0

500.000

36.8740

94.5

80 - 120

Matrix Spike Dup (B3F0336-MSD1)

Source: 1301718-01

Prepared: 6/17/2013 Analyzed: 6/17/2013

Chemical Oxygen Demand

553.128

5.0

500.000

36.8740

103

80 - 120

8.19

20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

Total Metals by ICP-AES EPA 6010B - Quality Control

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

Batch B3F0393 - EPA 3010A

Blank (B3F0393-BLK1)

Prepared: 6/19/2013 Analyzed: 6/19/2013

Selenium ND 0.010 NR

LCS (B3F0393-BS1)

Prepared: 6/19/2013 Analyzed: 6/19/2013

Selenium 0.952573 0.010 1.00000 95.3 80 - 120

Matrix Spike (B3F0393-MS1)

Source: 1301748-01

Prepared: 6/19/2013 Analyzed: 6/19/2013

Selenium 2.30023 0.010 2.50000 0.015236 91.4 67 - 125

Matrix Spike Dup (B3F0393-MSD1)

Source: 1301748-01

Prepared: 6/19/2013 Analyzed: 6/19/2013

Selenium 2.31445 0.010 2.50000 0.015236 92.0 67 - 125 0.617 20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

Dissolved Metals by ICP-AES EPA 6010B - Quality Control

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

Batch B3F0427 - EPA 3010A

Blank (B3F0427-BLK1)

Prepared: 6/20/2013 Analyzed: 6/21/2013

Calcium	ND	0.50			NR				
Iron	ND	0.50			NR				
Magnesium	ND	0.10			NR				
Manganese	ND	0.50			NR				
Selenium	ND	0.010			NR				
Sodium	ND	1.0			NR				

LCS (B3F0427-BS1)

Prepared: 6/20/2013 Analyzed: 6/21/2013

Calcium	21.7348	0.50	20.0000		109	80 - 120			
Iron	21.6338	0.50	20.0000		108	80 - 120			
Magnesium	21.9833	0.10	20.0000		110	80 - 120			
Manganese	10.6918	0.50	10.0000		107	80 - 120			
Selenium	1.00170	0.010	1.00000		100	80 - 120			
Sodium	22.1306	1.0	20.0000		111	80 - 120			

Matrix Spike (B3F0427-MS1)

Source: 1301748-01

Prepared: 6/20/2013 Analyzed: 6/21/2013

Calcium	97.4431	0.50	20.0000	79.2672	90.9	44 - 151			
Iron	19.7300	0.50	20.0000	0.022390	98.5	72 - 118			
Magnesium	44.8595	0.10	20.0000	26.2111	93.2	51 - 137			
Manganese	9.35189	0.50	10.0000	ND	93.5	76 - 106			
Selenium	2.30979	0.010	2.50000	ND	92.4	67 - 125			
Sodium	111.387	1.0	20.0000	92.7241	93.3	31 - 176			E

Matrix Spike Dup (B3F0427-MSD1)

Source: 1301748-01

Prepared: 6/20/2013 Analyzed: 6/21/2013

Calcium	111.665	0.50	20.0000	79.2672	162	44 - 151	13.6	20	
Iron	20.6337	0.50	20.0000	0.022390	103	72 - 118	4.48	20	
Magnesium	49.5243	0.10	20.0000	26.2111	117	51 - 137	9.88	20	
Manganese	9.97501	0.50	10.0000	ND	99.8	76 - 106	6.45	20	
Selenium	2.48356	0.010	2.50000	ND	99.3	67 - 125	7.25	20	
Sodium	127.031	1.0	20.0000	92.7241	172	31 - 176	13.1	20	E



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Quarterly, 532.

Report To : Steve Netto

Reported : 06/24/2013

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
E	Result value above quantitation range.
ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.



American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Number of Pages 2
Date Received 06/14/2013
Date Reported 06/24/2013

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
69822	06/14/2013	ATL

Project ID: 1301748
Project Name: PO# SC08056

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____

Approved By: _____

Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181

Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Page: 1 A

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Project ID: 1301748

Date Received 06/14/2013

Date Reported 06/24/2013

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
69822	06/14/2013	ATL

CERTIFICATE OF ANALYSIS CASE NARRATIVE

AETL received 1 samples with the following specification on 06/14/2013.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers	
69822.01	1301748-01	06/13/2013	Aqueous	1	
	Method ^ Submethod	Req Date	Priority	TAT	Units
	SM-2320B	06/21/2013	2	Normal	mg/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____

Approved By: _____

Cyrus Razmara, Ph.D.
Laboratory Director



American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045

Attn: Rachelle Arada

Page: 2

Project ID: 1301748

Project Name: PO# SC08056

AETL Job Number	Submitted	Client
69822	06/14/2013	ATL

Method: SM-2320B, Alkalinity, titration method (Std. methods 19th ed.)

QC Batch No: 061713-1

Our Lab I.D.		Method Blank	69822.01			
Client Sample I.D.			1301748-01			
Date Sampled			06/13/2013			
Date Prepared		06/17/2013	06/17/2013			
Preparation Method		SM2320B	SM2320B			
Date Analyzed		06/17/2013	06/17/2013			
Matrix		Aqueous	Aqueous			
Units		mg/L	mg/L			
Dilution Factor		1	1			
Analytes	MDL	PQL	Results	Results		
Bicarbonate (as CaCO ₃)	5.0	5.0	ND	250		
Carbonate (as CaCO ₃)	1.0	5.0	ND	ND		
Hydroxide (as CaCO ₃)	1.0	5.0	ND	ND		
Total Alkalinity (as CaCO ₃)	1.0	5.0	ND	250		

QUALITY CONTROL REPORT

QC Batch No: 061713-1; Dup or Spiked Sample: 69810.01; LCS: Clean Water; QC Prepared: 06/17/2013; QC Analyzed: 06/17/2013;
Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Bicarbonate (as CaCO ₃)	500	20.0	520	100	20.0	520	100	<1	80-120	<15
Total Alkalinity (as CaCO ₃)	500	20.0	520	100	20.0	520	100	<1	80-120	<15

QC Batch No: 061713-1; Dup or Spiked Sample: 69810.01; LCS: Clean Water; QC Prepared: 06/17/2013; QC Analyzed: 06/17/2013;
Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Bicarbonate (as CaCO ₃)	500	500	<1	<15	20.0	20.0	100	80-120		
Total Alkalinity (as CaCO ₃)	500	500	<1	<15	20.0	20.0	100	80-120		



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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected. However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.



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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

ADVANCED TECHNOLOGY
LABORATORIES

69822

SUBCONTRACT ORDER

Work Order: 1301748

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada

RECEIVING LABORATORY:

AETL
2834 North Naomi Street
Burbank, CA 91504
Phone : (818) 845-8200
Fax: (818) 845-8840
PO#: SC08056 - STANDARD TAT (RA)

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

Analysis	Due	Expires	Sampled
ATL Lab#: 1301748-01 / EW-02			
310.1_2320B_ SUB	06/21/13 17:00	06/27/13 09:55	06/13/13 09:55
[Alkalinity,]			

69822.01

Groundwater

1-Poly Unpres - 250mL

Comments: Speciated (hydroxide, bicarbonate, carbonate and total)

Released By

Date

Received By

Date

Released By

Date

Received By

Date



DATE 6/13/13 PAGE 1 OF 1

[illegible]

June 28, 2013

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
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1301752
Client Reference : Raytheon Main: Fullerton Monthly, 532.15

Enclosed are the results for sample(s) received on June 13, 2013 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,



Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-061313	1301752-01	Lab H2O	6/13/13 8:30	6/13/13 12:29
EW-02	1301752-02	Groundwater	6/13/13 9:55	6/13/13 12:29
PF	1301752-03	Groundwater	6/13/13 9:08	6/13/13 12:29
POX	1301752-04	Groundwater	6/13/13 10:40	6/13/13 12:29
CBT	1301752-05	Groundwater	6/13/13 11:00	6/13/13 12:29
CEFF	1301752-06	Groundwater	6/13/13 11:10	6/13/13 12:29

CASE NARRATIVE

The samples for EPA 317 (Bromate) analysis were subcontracted to Exova, Inc. with ELAP Cert.# 2652.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID TB-061313

Lab ID: 1301752-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1-Dichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1-Dichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1-Dichloropropene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dibromoethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,3-Dichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
2,2-Dichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
2-Chlorotoluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
4-Chlorotoluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
4-Isopropyltoluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Benzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Bromobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Bromodichloromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Bromoform	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Bromomethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Carbon tetrachloride	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chloroform	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chloromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Dibromochloromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID TB-061313

Lab ID: 1301752-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Dichlorodifluoromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Ethylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Hexachlorobutadiene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Isopropylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
m,p-Xylene	ND	1.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Methylene chloride	ND	1.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
n-Butylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
n-Propylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Naphthalene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
o-Xylene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
sec-Butylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Styrene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
tert-Butylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Tetrachloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Toluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Trichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Trichlorofluoromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Vinyl chloride	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Surrogate: 1,2-Dichloroethane-d4	101 %		70 - 130		B3F0381	06/19/2013	06/19/13 01:56	
Surrogate: 4-Bromofluorobenzene	100 %		70 - 130		B3F0381	06/19/2013	06/19/13 01:56	
Surrogate: Dibromofluoromethane	92.2 %		70 - 130		B3F0381	06/19/2013	06/19/13 01:56	
Surrogate: Toluene-d8	80.4 %		70 - 130		B3F0381	06/19/2013	06/19/13 01:56	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID EW-02

Lab ID: 1301752-02

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.21	0.05	NA	1	B3F0311	06/14/2013	06/14/13 12:22	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	670	10	NA	1	B3F0353	06/17/2013	06/18/13 09:15	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	3.8	NA	1	B3F0349	06/17/2013	06/17/13 09:12	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,1-Dichloroethane	0.64	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,1-Dichloroethene	54	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,1-Dichloropropene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2-Dibromoethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2-Dichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,2-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
1,3-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID EW-02

Lab ID: 1301752-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
2,2-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
2-Chlorotoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
4-Chlorotoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
4-Isopropyltoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Benzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Bromobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Bromodichloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Bromoform	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Bromomethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Carbon tetrachloride	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Chlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Chloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Chloroform	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Chloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Dibromochloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Dibromomethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Dichlorodifluoromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Ethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Hexachlorobutadiene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Isopropylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
m,p-Xylene	ND	1.0	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Methylene chloride	ND	1.0	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
n-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
n-Propylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Naphthalene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
o-Xylene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
sec-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Styrene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
tert-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Tetrachloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Toluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Trichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Trichlorofluoromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID EW-02

Lab ID: 1301752-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:32	
Surrogate: 1,2-Dichloroethane-d4	100 %		70 - 130		B3F0385	06/19/2013	06/19/13 17:32	
Surrogate: 4-Bromofluorobenzene	93.2 %		70 - 130		B3F0385	06/19/2013	06/19/13 17:32	
Surrogate: Dibromofluoromethane	89.2 %		70 - 130		B3F0385	06/19/2013	06/19/13 17:32	
Surrogate: Toluene-d8	79.4 %		70 - 130		B3F0385	06/19/2013	06/19/13 17:32	

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	25	2.0	NA	1	B3F0376	06/18/2013	06/20/13 15:01	
Surrogate: 1,2-Dichlorobenzene-d4	80.9 %		37 - 93		B3F0376	06/18/2013	06/20/13 15:01	
Surrogate: 2-Fluorobiphenyl	84.8 %		51 - 100		B3F0376	06/18/2013	06/20/13 15:01	
Surrogate: 4-Terphenyl-d14	83.3 %		58 - 113		B3F0376	06/18/2013	06/20/13 15:01	
Surrogate: Nitrobenzene-d5	72.8 %		39 - 95		B3F0376	06/18/2013	06/20/13 15:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID PF

Lab ID: 1301752-03

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	4.1	NA	1	B3F0349	06/17/2013	06/17/13 09:14	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID POX

Lab ID: 1301752-04

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.21	0.05	NA	1	B3F0311	06/14/2013	06/14/13 13:19	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	670	10	NA	1	B3F0353	06/17/2013	06/18/13 09:15	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,1-Dichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,1-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,1-Dichloropropene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2-Dibromoethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2-Dichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,2-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,3-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
2,2-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
2-Chlorotoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
4-Chlorotoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
4-Isopropyltoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Benzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID POX

Lab ID: 1301752-04

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Bromodichloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Bromoform	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Bromomethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Carbon tetrachloride	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Chlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Chloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Chloroform	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Chloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Dibromochloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Dibromomethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Dichlorodifluoromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Ethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Hexachlorobutadiene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Isopropylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
m,p-Xylene	ND	1.0	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Methylene chloride	ND	1.0	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
n-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
n-Propylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Naphthalene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
o-Xylene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
sec-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Styrene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
tert-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Tetrachloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Toluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Trichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Trichlorofluoromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	
Vinyl chloride	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 17:08	

Surrogate: 1,2-Dichloroethane-d4	99.3 %	70 - 130	B3F0385	06/19/2013	06/19/13 17:08
Surrogate: 4-Bromofluorobenzene	91.1 %	70 - 130	B3F0385	06/19/2013	06/19/13 17:08
Surrogate: Dibromofluoromethane	87.9 %	70 - 130	B3F0385	06/19/2013	06/19/13 17:08
Surrogate: Toluene-d8	78.7 %	70 - 130	B3F0385	06/19/2013	06/19/13 17:08



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID POX

Lab ID: 1301752-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.89	0.20	NA	1	B3F0408	06/19/2013	06/20/13 10:44	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>73.7 %</i>		<i>47 - 117</i>		B3F0408	06/19/2013	<i>06/20/13 10:44</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>79.9 %</i>		<i>48 - 121</i>		B3F0408	06/19/2013	<i>06/20/13 10:44</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>90.3 %</i>		<i>58 - 142</i>		B3F0408	06/19/2013	<i>06/20/13 10:44</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>74.5 %</i>		<i>27 - 151</i>		B3F0408	06/19/2013	<i>06/20/13 10:44</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID CBT

Lab ID: 1301752-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,1-Dichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,1-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,1-Dichloropropene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2-Dibromoethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2-Dichloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,2-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,3-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
2,2-Dichloropropane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
2-Chlorotoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
4-Chlorotoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
4-Isopropyltoluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Benzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Bromobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Bromodichloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Bromoform	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Bromomethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Carbon tetrachloride	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Chlorobenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Chloroethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Chloroform	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Chloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Dibromochloromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID CBT

Lab ID: 1301752-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Dichlorodifluoromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Ethylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Hexachlorobutadiene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Isopropylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
m,p-Xylene	ND	1.0	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Methylene chloride	ND	1.0	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
n-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
n-Propylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Naphthalene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
o-Xylene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
sec-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Styrene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
tert-Butylbenzene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Tetrachloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Toluene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Trichloroethene	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Trichlorofluoromethane	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Vinyl chloride	ND	0.50	NA	1	B3F0385	06/19/2013	06/19/13 16:20	
Surrogate: 1,2-Dichloroethane-d4	99.4 %		70 - 130		B3F0385	06/19/2013	06/19/13 16:20	
Surrogate: 4-Bromofluorobenzene	95.0 %		70 - 130		B3F0385	06/19/2013	06/19/13 16:20	
Surrogate: Dibromofluoromethane	89.6 %		70 - 130		B3F0385	06/19/2013	06/19/13 16:20	
Surrogate: Toluene-d8	78.4 %		70 - 130		B3F0385	06/19/2013	06/19/13 16:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID CEFF

Lab ID: 1301752-06

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.21	0.05	NA	1	B3F0311	06/14/2013	06/14/13 13:30	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	670	10	NA	1	B3F0353	06/17/2013	06/18/13 09:15	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,1-Dichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,1-Dichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,1-Dichloropropene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2-Dibromoethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2-Dichloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,2-Dichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,3-Dichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
2,2-Dichloropropane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
2-Chlorotoluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
4-Chlorotoluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
4-Isopropyltoluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Benzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Client Sample ID CEFF

Lab ID: 1301752-06

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Bromodichloromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Bromoform	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Bromomethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Carbon tetrachloride	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Chlorobenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Chloroethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Chloroform	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Chloromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Dibromochloromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Dibromomethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Dichlorodifluoromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Ethylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Hexachlorobutadiene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Isopropylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
m,p-Xylene	ND	1.0	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Methylene chloride	ND	1.0	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
n-Butylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
n-Propylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Naphthalene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
o-Xylene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
sec-Butylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Styrene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
tert-Butylbenzene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Tetrachloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Toluene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Trichloroethene	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Trichlorofluoromethane	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	
Vinyl chloride	ND	0.50	NA	1	B3F0381	06/19/2013	06/19/13 02:20	

Surrogate: 1,2-Dichloroethane-d4	97.9 %	70 - 130	B3F0381	06/19/2013	06/19/13 02:20
Surrogate: 4-Bromofluorobenzene	97.5 %	70 - 130	B3F0381	06/19/2013	06/19/13 02:20
Surrogate: Dibromofluoromethane	87.5 %	70 - 130	B3F0381	06/19/2013	06/19/13 02:20
Surrogate: Toluene-d8	78.8 %	70 - 130	B3F0381	06/19/2013	06/19/13 02:20



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QUALITY CONTROL SECTION

Bromide by Ion Chromatography EPA 300 - Quality Control

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

Batch B3F0311 - No_Prep_IC_1

Blank (B3F0311-BLK1)

Prepared: 6/14/2013 Analyzed: 6/14/2013

Bromide ND 0.05 NR

LCS (B3F0311-BS1)

Prepared: 6/14/2013 Analyzed: 6/14/2013

Bromide 0.999800 0.05 1.00000 100 90 - 110

Duplicate (B3F0311-DUP1)

Source: 1301753-02

Prepared: 6/14/2013 Analyzed: 6/14/2013

Bromide ND 0.50 ND NR 20

Matrix Spike (B3F0311-MS1)

Source: 1301753-02

Prepared: 6/14/2013 Analyzed: 6/14/2013

Bromide 2.23300 0.50 2.50000 ND 89.3 80 - 120

Matrix Spike Dup (B3F0311-MSD1)

Source: 1301753-02

Prepared: 6/14/2013 Analyzed: 6/14/2013

Bromide 2.47300 0.50 2.50000 ND 98.9 80 - 120 10.2 20



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

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

Batch B3F0353 - No_Prep_WC_1

Blank (B3F0353-BLK1)

Prepared: 6/17/2013 Analyzed: 6/18/2013

Residue, Dissolved

ND

10

NR

LCS (B3F0353-BS1)

Prepared: 6/17/2013 Analyzed: 6/18/2013

Residue, Dissolved

998.000

10

970.000

103

80 - 120

Duplicate (B3F0353-DUP1)

Source: 1301728-01

Prepared: 6/17/2013 Analyzed: 6/18/2013

Residue, Dissolved

702.000

10

699.000

NR

0.428

10



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Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

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

Batch B3F0349 - No_Prep_WC_1

Blank (B3F0349-BLK1)

Prepared: 6/17/2013 Analyzed: 6/17/2013

Residue, Suspended

ND

10

NR

LCS (B3F0349-BS1)

Prepared: 6/17/2013 Analyzed: 6/17/2013

Residue, Suspended

113.000

10

96.6000

117

80 - 120

Duplicate (B3F0349-DUP1)

Source: 1301705-01

Prepared: 6/17/2013 Analyzed: 6/17/2013

Residue, Suspended

12.3333

3.3

11.6667

NR

5.56

10



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Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3F0381 - MSVOAW_LL

Blank (B3F0381-BLK1)

Prepared: 6/18/2013 Analyzed: 6/18/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR



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

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

Batch B3F0381 - MSVOAW_LL (continued)

Blank (B3F0381-BLK1) - Continued

Prepared: 6/18/2013 Analyzed: 6/18/2013

Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	25.13	25.0000	101	70 - 130
Surrogate: 4-Bromofluorobenzene	25.67	25.0000	103	70 - 130
Surrogate: Dibromofluoromethane	22.97	25.0000	91.9	70 - 130
Surrogate: Toluene-d8	21.33	25.0000	85.3	70 - 130

LCS (B3F0381-BS1)

Prepared: 6/18/2013 Analyzed: 6/18/2013

1,1-Dichloroethene	19.0900	20.0000	95.4	70 - 130
Benzene	35.6200	40.0000	89.0	70 - 130
Chlorobenzene	18.0200	20.0000	90.1	70 - 130
MTBE	19.2100	20.0000	96.0	70 - 130
Toluene	36.1300	40.0000	90.3	70 - 130
Trichloroethene	18.5000	20.0000	92.5	70 - 130

Surrogate: 1,2-Dichloroethane-d4	23.60	25.0000	94.4	70 - 130
Surrogate: 4-Bromofluorobenzene	25.64	25.0000	103	70 - 130
Surrogate: Dibromofluoromethane	22.60	25.0000	90.4	70 - 130
Surrogate: Toluene-d8	22.31	25.0000	89.2	70 - 130

LCS Dup (B3F0381-BS1)

Prepared: 6/18/2013 Analyzed: 6/18/2013

1,1-Dichloroethene	20.4800	20.0000	102	70 - 130	7.03	20
Benzene	38.7900	40.0000	97.0	70 - 130	8.52	20
Chlorobenzene	19.6300	20.0000	98.2	70 - 130	8.55	20
MTBE	20.5500	20.0000	103	70 - 130	6.74	20
Toluene	39.5200	40.0000	98.8	70 - 130	8.96	20
Trichloroethene	20.2500	20.0000	101	70 - 130	9.03	20

Surrogate: 1,2-Dichloroethane-d4	21.44	25.0000	85.8	70 - 130



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

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

Batch B3F0381 - MSVOAW_LL (continued)

LCS Dup (B3F0381-BSD1) - Continued

Prepared: 6/18/2013 Analyzed: 6/18/2013

Surrogate: 4-Bromofluorobenzene	24.51	25.0000	98.0	70 - 130
Surrogate: Dibromofluoromethane	21.51	25.0000	86.0	70 - 130
Surrogate: Toluene-d8	21.47	25.0000	85.9	70 - 130

Batch B3F0385 - MSVOAW_LL

Blank (B3F0385-BLK1)

Prepared: 6/19/2013 Analyzed: 6/19/2013

1,1,1,2-Tetrachloroethane	ND	0.50	NR
1,1,1-Trichloroethane	ND	0.50	NR
1,1,2,2-Tetrachloroethane	ND	0.50	NR
1,1,2-Trichloroethane	ND	0.50	NR
1,1-Dichloroethane	ND	0.50	NR
1,1-Dichloroethene	ND	0.50	NR
1,1-Dichloropropene	ND	0.50	NR
1,2,3-Trichloropropane	ND	0.50	NR
1,2,3-Trichlorobenzene	ND	0.50	NR
1,2,4-Trichlorobenzene	ND	0.50	NR
1,2,4-Trimethylbenzene	ND	0.50	NR
1,2-Dibromo-3-chloropropane	ND	0.50	NR
1,2-Dibromoethane	ND	0.50	NR
1,2-Dichlorobenzene	ND	0.50	NR
1,2-Dichloroethane	ND	0.50	NR
1,2-Dichloropropane	ND	0.50	NR
1,3,5-Trimethylbenzene	ND	0.50	NR
1,3-Dichlorobenzene	ND	0.50	NR
1,3-Dichloropropane	ND	0.50	NR
1,4-Dichlorobenzene	ND	0.50	NR
2,2-Dichloropropane	ND	0.50	NR
2-Chlorotoluene	ND	0.50	NR
4-Chlorotoluene	ND	0.50	NR
4-Isopropyltoluene	ND	0.50	NR
Benzene	ND	0.50	NR
Bromobenzene	ND	0.50	NR
Bromodichloromethane	ND	0.50	NR
Bromoform	ND	0.50	NR
Bromomethane	ND	0.50	NR
Carbon tetrachloride	ND	0.50	NR
Chlorobenzene	ND	0.50	NR
Chloroethane	ND	0.50	NR
Chloroform	ND	0.50	NR
Chloromethane	ND	0.50	NR



Certificate of Analysis

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Report To : Steve Netto

Reported : 06/28/2013

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

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

Batch B3F0385 - MSVOAW_LL (continued)

Blank (B3F0385-BLK1) - Continued

Prepared: 6/19/2013 Analyzed: 6/19/2013

cis-1,2-Dichloroethene	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Dibromomethane	ND	0.50			NR				
Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	26.07	25.0000	104	70 - 130
Surrogate: 4-Bromofluorobenzene	23.21	25.0000	92.8	70 - 130
Surrogate: Dibromofluoromethane	23.66	25.0000	94.6	70 - 130
Surrogate: Toluene-d8	21.31	25.0000	85.2	70 - 130

LCS (B3F0385-BS1)

Prepared: 6/19/2013 Analyzed: 6/19/2013

1,1-Dichloroethene	20.3500	20.0000	102	70 - 130
Benzene	40.9100	40.0000	102	70 - 130
Chlorobenzene	19.5400	20.0000	97.7	70 - 130
MTBE	21.8500	20.0000	109	70 - 130
Toluene	42.1100	40.0000	105	70 - 130
Trichloroethene	20.9900	20.0000	105	70 - 130

Surrogate: 1,2-Dichloroethane-d4	23.07	25.0000	92.3	70 - 130
Surrogate: 4-Bromofluorobenzene	24.05	25.0000	96.2	70 - 130
Surrogate: Dibromofluoromethane	21.01	25.0000	84.0	70 - 130
Surrogate: Toluene-d8	21.74	25.0000	87.0	70 - 130

LCS Dup (B3F0385-BSD1)

Prepared: 6/19/2013 Analyzed: 6/19/2013



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

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

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

Batch B3F0385 - MSVOAW_LL (continued)

LCS Dup (B3F0385-BSD1) - Continued

Prepared: 6/19/2013 Analyzed: 6/19/2013

1,1-Dichloroethene	20.0300		20.0000		100	70 - 130	1.58	20	
Benzene	38.6300		40.0000		96.6	70 - 130	5.73	20	
Chlorobenzene	19.0000		20.0000		95.0	70 - 130	2.80	20	
MTBE	21.6600		20.0000		108	70 - 130	0.873	20	
Toluene	40.0200		40.0000		100	70 - 130	5.09	20	
Trichloroethene	19.8100		20.0000		99.0	70 - 130	5.78	20	

Surrogate: 1,2-Dichloroethane-d4	23.46		25.0000		93.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	23.72		25.0000		94.9	70 - 130			
Surrogate: Dibromofluoromethane	22.10		25.0000		88.4	70 - 130			
Surrogate: Toluene-d8	21.48		25.0000		85.9	70 - 130			

Duplicate (B3F0385-DUP1)

Source: 1301752-05

Prepared: 6/19/2013 Analyzed: 6/19/2013

1,1-Dichloroethene	ND	0.50		ND	NR			20	
Benzene	ND	0.50		ND	NR			20	
Chlorobenzene	ND	0.50		ND	NR			20	
MTBE	ND	0.50		ND	NR			20	
Toluene	ND	0.50		ND	NR			20	
Trichloroethene	ND	0.50		ND	NR			20	

Surrogate: 1,2-Dichloroethane-d4	24.14		25.0000		96.6	70 - 130			
Surrogate: 4-Bromofluorobenzene	23.14		25.0000		92.6	70 - 130			
Surrogate: Dibromofluoromethane	21.96		25.0000		87.8	70 - 130			
Surrogate: Toluene-d8	19.82		25.0000		79.3	70 - 130			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

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

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

Batch B3F0376 - MSSEMI_ISOTOPEDILN

Blank (B3F0376-BLK1)

Prepared: 6/18/2013 Analyzed: 6/20/2013

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	80.54		100.000		80.5	37 - 93			
Surrogate: 2-Fluorobiphenyl	84.01		100.000		84.0	51 - 100			
Surrogate: 4-Terphenyl-d14	79.94		100.000		79.9	58 - 113			
Surrogate: Nitrobenzene-d5	70.85		100.000		70.8	39 - 95			

LCS (B3F0376-BS1)

Prepared: 6/18/2013 Analyzed: 6/20/2013

1,4-Dioxane	87.3700	2.0	100.000		87.4	70 - 130			
Surrogate: 1,2-Dichlorobenzene-d4	75.22		100.000		75.2	37 - 93			
Surrogate: 2-Fluorobiphenyl	87.32		100.000		87.3	51 - 100			
Surrogate: 4-Terphenyl-d14	85.83		100.000		85.8	58 - 113			
Surrogate: Nitrobenzene-d5	72.19		100.000		72.2	39 - 95			

LCS Dup (B3F0376-BSD1)

Prepared: 6/18/2013 Analyzed: 6/20/2013

1,4-Dioxane	94.1600	2.0	100.000		94.2	70 - 130	7.48	20	
Surrogate: 1,2-Dichlorobenzene-d4	72.35		100.000		72.4	37 - 93			
Surrogate: 2-Fluorobiphenyl	84.31		100.000		84.3	51 - 100			
Surrogate: 4-Terphenyl-d14	85.44		100.000		85.4	58 - 113			
Surrogate: Nitrobenzene-d5	69.91		100.000		69.9	39 - 95			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

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

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

Batch B3F0408 - MSSEMI

Blank (B3F0408-BLK1)

Prepared: 6/19/2013 Analyzed: 6/20/2013

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7764		1.00000		77.6	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8535		1.00000		85.4	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9519		1.00000		95.2	58 - 142			
Surrogate: Nitrobenzene-d5	0.7490		1.00000		74.9	27 - 151			

LCS (B3F0408-BS1)

Prepared: 6/19/2013 Analyzed: 6/20/2013

1,4-Dioxane	1.28882	0.20	1.00000		129	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7605		1.00000		76.0	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8503		1.00000		85.0	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9394		1.00000		93.9	58 - 142			
Surrogate: Nitrobenzene-d5	0.7439		1.00000		74.4	27 - 151			

LCS Dup (B3F0408-BSD1)

Prepared: 6/19/2013 Analyzed: 6/20/2013

1,4-Dioxane	1.28567	0.20	1.00000		129	58 - 151	0.245	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.7489		1.00000		74.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8622		1.00000		86.2	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9359		1.00000		93.6	58 - 142			
Surrogate: Nitrobenzene-d5	0.7438		1.00000		74.4	27 - 151			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1

Report To : Steve Netto

Reported : 06/28/2013

Notes and Definitions

ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.

Client: Advanced Technology Laboratories Inc
Job No.: 149015

Bromate by EPA 317.0
Ion Chromatography/Post-Column Reaction-Visible Absorption Spectroscopy

Column: Dionex AS9-HC/AG9-HSC
Eluent: 10 mM Na₂CO₃
Flow: 1.20 mL/min
Injection: 250 µL
Detection: Visible, 450 nm

Sample preparation: The undiluted samples were treated with a 2.5 mL Dionex OnGuard II H cartridge to remove excess basic cations. One sample required dilution with water by 1:5 for analysis. The detection limit is adjusted for the dilution.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>	<u>Detection Limit</u>
ATL Lab#: 1301752-02 / EW-02	ND	0.3
ATL Lab#: 1301752-04 / POX	5	2
ATL Lab#: 1301752-06 / CEFF	4.7	0.3
ATL Lab#: 1301752-06 / CEFF Duplicate	4.9	0.3
Method Blank	ND	0.3

Date Analyzed: 06-27-13

Quality Control Summary

Sample ID: ATL Lab#: 1301752-06 / CEFF

<u>Analyte</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Sample RPD</u>
Bromate	4.7	4.9	4

QC Guidelines NMT 10

Sample ID: Batch QC

<u>Analyte</u>	<u>Sample Result</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>
Bromate	ND	1000	930	93

QC Guidelines 75-125

Exova Inc – Santa Fe Springs – 562-948-2225
The above data is considered preliminary and may not reflect final reported values.
A final signed report will be mailed to you.

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1301752

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada

RECEIVING LABORATORY:

Exova Inc.
9240 Santa Fe Springs Road
Santa Fe Springs, CA 90670
Phone : (562) 948-2225
Fax: (562) 948-5850
PO#: SC08057 - STANDARD TAI *(RA)*

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

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1301752-02	/ EW-02		Groundwater	06/13/13 09:55
317.0	06/27/13 17:00	06/14/13 09:55		
[Bromate]				
Poly Unpres - 125mL				
ATL Lab#: 1301752-04	/ POX		Groundwater	06/13/13 10:40
317.0	06/27/13 17:00	06/14/13 10:40		
[Bromate]				
Poly Unpres - 125mL				
ATL Lab#: 1301752-06	/ CEFF		Groundwater	06/13/13 11:10
317.0	06/27/13 17:00	06/14/13 11:10		
[Bromate]				
1-Poly Unpres - 125mL				

Released By <i>[Signature]</i> <i>6/14/13 12:05</i> Date	Received By <i>[Signature]</i> <i>6/14/13 12:05</i> Date	Released By <i>[Signature]</i> <i>6/14/13 13:33</i> Date	Received By <i>[Signature]</i> <i>EXOVA 06-14-13 13:33</i> Date

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 6/13/13 PAGE 1 OF 1

PROJECT NAME				PROJECT No./TASK No.				SAMPLE CONTAINERS				ANALYSIS REQUESTED				ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S				SPECIAL HANDLING				LABORATORY INFORMATION								
Raytheon Main: Fullerton Monthly				532.15																												
PROJECT MANAGER Chris Ross				Phone No. 858-455-6500																												
QA MANAGER Steve Netto				Fax No. 858-455-6533																												
SAMPLER (SIGNATURE)				SAMPLER (PRINTED)																												
				MARLOS RODRIGUEZ																												
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION			40 ml VOA	125 ml Poly	250 ml Poly	1 L Amber	VOCs by EPA 8260B	1,4-Dioxane by EPA 8270SIN	1,4-Dioxane by EPA 8270BOD	Bromate by EPA 317	Bromide by EPA 300	TDS by EPA SM2540C	TSS by EPA SM2540D	0-10	10-100	100-1,000	>1,000								
		Date	Time	Soil	Ground-water	Surface water	Lab H2O	HCl	HNO3																						NaOH	H2SO4
170172-01	TB-06/13/13	6/13/13	08:30				X	X						X							X											Please include
-2	EW-02		09:55	X			X							X	X	X	X	X	X		X											mrodriguez@hargis.com
3	PF		09:08	X															X													in lab report
4	POX		10:40	X			X							X	X	X	X	X			X											distribution list.
5	CBT		11:00	X			X							X							X											
6	CEFF		11:10	X			X							X		X	X	X			X											Set 1,4-Dioxane
																																MDL to 1.0 ppm
Total number of Containers per analysis:										146				52												Total No. of Containers: 27						
Relinquished by:		Date	Received by:	Date	INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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.																											
		6/13/13		6/13/13																												
Company		Time	Company	Time	Sample Receipt: ☐ No. of containers correct ☐ custody seals secure Temp. @ receipt <u>22</u> °C ☒ received good condition/cold ☐ conforms to COC document																											
12:29		ATL	1229	1229																												
Relinquished by:		Date	Received by:	Date	Shipment Method: <u>DELIVER</u> Send Results to: <u>Steve Netto</u> ☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300 Send invoice to San Diego, CA Attn: Accounts Payable																											
Company		Time	Company	Time																												

June 24, 2013

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
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1301756
Client Reference : Raytheon Main: Fullerton OCSD, 532.15

Enclosed are the results for sample(s) received on June 13, 2013 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,



Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-061313	1301756-01	Lab H2O	6/13/13 8:30	5/13/13 12:29
CEFF	1301756-02	Groundwater	6/13/13 11:10	5/13/13 12:29



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

Client Sample ID TB-061313

Lab ID: 1301756-01

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1-Trichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1,2,2-Tetrachloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1,2-Trichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1-Dichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,1-Dichloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dichlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,2-Dichloropropane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,3-Dichlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
1,4-Dichlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
2-Chloroethyl vinyl ether	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Acrolein	ND	50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Acrylonitrile	ND	50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Benzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Bromodichloromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Bromoform	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Bromomethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Carbon tetrachloride	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chloroform	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Chloromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
cis-1,3-Dichloropropene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Dibromochloromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Ethylbenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
m,p-Xylene	ND	10	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Methylene chloride	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
o-Xylene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Tetrachloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Toluene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
trans-1,2-Dichloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
trans-1,3-Dichloropropene	ND	50	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Trichloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Trichlorofluoromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	
Vinyl chloride	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 01:56	

Surrogate: 1,2-Dichloroethane-d4

101 %

70 - 130

B3F0381

06/19/2013

06/19/13 01:56

Surrogate: 4-Bromofluorobenzene

100 %

70 - 130

B3F0381

06/19/2013

06/19/13 01:56



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

Client Sample ID TB-061313

Lab ID: 1301756-01

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Dibromofluoromethane</i>	92.2 %	70 - 130			B3F0381	06/19/2013	06/19/13 01:56	
<i>Surrogate: Toluene-d8</i>	80.4 %	70 - 130			B3F0381	06/19/2013	06/19/13 01:56	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

Client Sample ID CEFF

Lab ID: 1301756-02

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1-Trichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,1,2,2-Tetrachloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,1,2-Trichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,1-Dichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,1-Dichloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,2-Dichlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,2-Dichloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,2-Dichloropropane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,3-Dichlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
1,4-Dichlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
2-Chloroethyl vinyl ether	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Acrolein	ND	50	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Acrylonitrile	ND	50	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Benzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Bromodichloromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Bromoform	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Bromomethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Carbon tetrachloride	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Chlorobenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Chloroethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Chloroform	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Chloromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
cis-1,3-Dichloropropene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Dibromochloromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Ethylbenzene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
m,p-Xylene	ND	10	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Methylene chloride	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
o-Xylene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Tetrachloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Toluene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
trans-1,2-Dichloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
trans-1,3-Dichloropropene	ND	50	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Trichloroethene	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Trichlorofluoromethane	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	
Vinyl chloride	ND	5.0	NA	1	B3F0381	06/19/2013	06/19/13 02:44	

Surrogate: 1,2-Dichloroethane-d4

101 %

70 - 130

B3F0381

06/19/2013

06/19/13 02:44

Surrogate: 4-Bromofluorobenzene

99.1 %

70 - 130

B3F0381

06/19/2013

06/19/13 02:44



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

Client Sample ID CEFF

Lab ID: 1301756-02

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Dibromofluoromethane</i>	92.0 %		70 - 130		B3F0381	06/19/2013	06/19/13 02:44	
<i>Surrogate: Toluene-d8</i>	80.2 %		70 - 130		B3F0381	06/19/2013	06/19/13 02:44	

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	1.1	0.20	NA	1	B3F0408	06/19/2013	06/20/13 11:10	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	76.7 %		47 - 117		B3F0408	06/19/2013	06/20/13 11:10	
<i>Surrogate: 2-Fluorobiphenyl</i>	86.3 %		48 - 121		B3F0408	06/19/2013	06/20/13 11:10	
<i>Surrogate: 4-Terphenyl-d14</i>	96.9 %		58 - 142		B3F0408	06/19/2013	06/20/13 11:10	
<i>Surrogate: Nitrobenzene-d5</i>	77.8 %		27 - 151		B3F0408	06/19/2013	06/20/13 11:10	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 624 - Quality Control

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

Batch B3F0381 - MSVOAW_LL

Blank (B3F0381-BLK1)

Prepared: 6/18/2013 Analyzed: 6/18/2013

1,1,1-Trichloroethane	ND	5.0				NR			
1,1,2,2-Tetrachloroethane	ND	5.0				NR			
1,1,2-Trichloroethane	ND	5.0				NR			
1,1-Dichloroethane	ND	5.0				NR			
1,1-Dichloroethene	ND	5.0				NR			
1,2-Dichlorobenzene	ND	5.0				NR			
1,2-Dichloroethane	ND	5.0				NR			
1,2-Dichloropropane	ND	5.0				NR			
1,3-Dichlorobenzene	ND	5.0				NR			
1,4-Dichlorobenzene	ND	5.0				NR			
2-Chloroethyl vinyl ether	ND	5.0				NR			
Acrolein	ND	50				NR			
Acrylonitrile	ND	50				NR			
Benzene	ND	5.0				NR			
Bromodichloromethane	ND	5.0				NR			
Bromoform	ND	5.0				NR			
Bromomethane	ND	5.0				NR			
Carbon tetrachloride	ND	5.0				NR			
Chlorobenzene	ND	5.0				NR			
Chloroethane	ND	5.0				NR			
Chloroform	ND	5.0				NR			
Chloromethane	ND	5.0				NR			
cis-1,3-Dichloropropene	ND	5.0				NR			
Dibromochloromethane	ND	5.0				NR			
Ethylbenzene	ND	5.0				NR			
m,p-Xylene	ND	10				NR			
Methylene chloride	ND	5.0				NR			
o-Xylene	ND	5.0				NR			
Tetrachloroethene	ND	5.0				NR			
Toluene	ND	5.0				NR			
trans-1,2-Dichloroethene	ND	5.0				NR			
trans-1,3-Dichloropropene	ND	50				NR			
Trichloroethene	ND	5.0				NR			
Trichlorofluoromethane	ND	5.0				NR			
Vinyl chloride	ND	5.0				NR			

Surrogate: 1,2-Dichloroethane-d4	25.13	25.0000	101	70 - 130
Surrogate: 4-Bromofluorobenzene	25.67	25.0000	103	70 - 130
Surrogate: Dibromofluoromethane	22.97	25.0000	91.9	70 - 130
Surrogate: Toluene-d8	21.33	25.0000	85.3	70 - 130



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

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

Batch B3F0381 - MSVOAW_LL (continued)

LCS (B3F0381-BS1)

Prepared: 6/18/2013 Analyzed: 6/18/2013

1,1-Dichloroethene	19.0900		20.0000		95.4	70 - 130			
Benzene	35.6200		40.0000		89.0	70 - 130			
Chlorobenzene	18.0200		20.0000		90.1	70 - 130			
Toluene	36.1300		40.0000		90.3	70 - 130			
Trichloroethene	18.5000		20.0000		92.5	70 - 130			
Surrogate: 1,2-Dichloroethane-d4	23.60		25.0000		94.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.64		25.0000		103	70 - 130			
Surrogate: Dibromofluoromethane	22.60		25.0000		90.4	70 - 130			
Surrogate: Toluene-d8	22.31		25.0000		89.2	70 - 130			

LCS Dup (B3F0381-BS1)

Prepared: 6/18/2013 Analyzed: 6/18/2013

1,1-Dichloroethene	20.4800		20.0000		102	70 - 130	7.03	20	
Benzene	38.7900		40.0000		97.0	70 - 130	8.52	20	
Chlorobenzene	19.6300		20.0000		98.2	70 - 130	8.55	20	
Toluene	39.5200		40.0000		98.8	70 - 130	8.96	20	
Trichloroethene	20.2500		20.0000		101	70 - 130	9.03	20	
Surrogate: 1,2-Dichloroethane-d4	21.44		25.0000		85.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.51		25.0000		98.0	70 - 130			
Surrogate: Dibromofluoromethane	21.51		25.0000		86.0	70 - 130			
Surrogate: Toluene-d8	21.47		25.0000		85.9	70 - 130			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

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

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

Batch B3F0408 - MSSEMI

Blank (B3F0408-BLK1)

Prepared: 6/19/2013 Analyzed: 6/20/2013

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7764		1.00000		77.6	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8535		1.00000		85.4	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9519		1.00000		95.2	58 - 142			
Surrogate: Nitrobenzene-d5	0.7490		1.00000		74.9	27 - 151			

LCS (B3F0408-BS1)

Prepared: 6/19/2013 Analyzed: 6/20/2013

1,4-Dioxane	1.28882	0.20	1.00000		129	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7605		1.00000		76.0	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8503		1.00000		85.0	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9394		1.00000		93.9	58 - 142			
Surrogate: Nitrobenzene-d5	0.7439		1.00000		74.4	27 - 151			

LCS Dup (B3F0408-BSD1)

Prepared: 6/19/2013 Analyzed: 6/20/2013

1,4-Dioxane	1.28567	0.20	1.00000		129	58 - 151	0.245	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.7489		1.00000		74.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8622		1.00000		86.2	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9359		1.00000		93.6	58 - 142			
Surrogate: Nitrobenzene-d5	0.7438		1.00000		74.4	27 - 151			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton OCSD, 532.15

Report To : Steve Netto

Reported : 06/24/2013

Notes and Definitions

ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.



DATE 6/13/13 PAGE 1 OF 1

[illegible]

July 22, 2013

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
NELAP No.: 02107CA
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1301939
Client Reference : Raytheon Main: Fullerton Monthly, 532.15

Enclosed are the results for sample(s) received on July 02, 2013 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,



Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-070213	1301939-01	Lab H2O	7/02/13 8:30	7/02/13 10:50
EW-02	1301939-02	Groundwater	7/02/13 9:55	7/02/13 10:50
PF	1301939-03	Groundwater	7/02/13 9:03	7/02/13 10:50
POX	1301939-04	Groundwater	7/02/13 9:10	7/02/13 10:50
CBT	1301939-05	Groundwater	7/02/13 9:17	7/02/13 10:50
CEFF	1301939-06	Groundwater	7/02/13 9:23	7/02/13 10:50

CASE NARRATIVE

The samples for EPA 317 (Bromate) analysis were subcontracted to Exova, Inc. with ELAP Cert.# 2652.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID TB-070213

Lab ID: 1301939-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,1-Dichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,1-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
2-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
4-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Benzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Bromobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Bromodichloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Bromoform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Bromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Carbon tetrachloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Chlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Chloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Chloroform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Chloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Dibromochloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID TB-070213

Lab ID: 1301939-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Ethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Isopropylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
m,p-Xylene	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Methylene chloride	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
n-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
n-Propylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Naphthalene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
o-Xylene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
sec-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Styrene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
tert-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Tetrachloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Toluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Trichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Vinyl chloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 18:57	
Surrogate: 1,2-Dichloroethane-d4	81.8 %		70 - 130		B3G0043	07/03/2013	07/03/13 18:57	
Surrogate: 4-Bromofluorobenzene	79.8 %		70 - 130		B3G0043	07/03/2013	07/03/13 18:57	
Surrogate: Dibromofluoromethane	87.3 %		70 - 130		B3G0043	07/03/2013	07/03/13 18:57	
Surrogate: Toluene-d8	71.0 %		70 - 130		B3G0043	07/03/2013	07/03/13 18:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID EW-02

Lab ID: 1301939-02

Bromide by Ion Chromatography EPA 300

Analyst: Phali

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.17	0.05	NA	1	B3G0106	07/08/2013	07/08/13 13:55	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	680	10	NA	1	B3G0082	07/05/2013	07/08/13 09:10	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	3.9	NA	1	B3G0072	07/05/2013	07/05/13 08:30	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,1-Dichloroethane	0.72	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,1-Dichloroethene	64	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID EW-02

Lab ID: 1301939-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
2-Chlorotoluene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
4-Chlorotoluene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Benzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Bromobenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Bromodichloromethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Bromoform	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Bromomethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Carbon tetrachloride	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Chlorobenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Chloroethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Chloroform	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Chloromethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Dibromochloromethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Dibromomethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Ethylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Isopropylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
m,p-Xylene	ND	1.0	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Methylene chloride	ND	1.0	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
n-Butylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
n-Propylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Naphthalene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
o-Xylene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
sec-Butylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Styrene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
tert-Butylbenzene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Tetrachloroethene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Toluene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Trichloroethene	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID EW-02

Lab ID: 1301939-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride	ND	0.50	NA	1	B3G0118	07/09/2013	07/09/13 17:36	
Surrogate: 1,2-Dichloroethane-d4	84.6 %		70 - 130		B3G0118	07/09/2013	07/09/13 17:36	
Surrogate: 4-Bromofluorobenzene	81.0 %		70 - 130		B3G0118	07/09/2013	07/09/13 17:36	
Surrogate: Dibromofluoromethane	88.4 %		70 - 130		B3G0118	07/09/2013	07/09/13 17:36	
Surrogate: Toluene-d8	73.6 %		70 - 130		B3G0118	07/09/2013	07/09/13 17:36	

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	27	2.0	NA	1	B3G0121	07/09/2013	07/10/13 01:17	
Surrogate: 1,2-Dichlorobenzene-d4	81.3 %		37 - 93		B3G0121	07/09/2013	07/10/13 01:17	
Surrogate: 2-Fluorobiphenyl	89.6 %		51 - 100		B3G0121	07/09/2013	07/10/13 01:17	
Surrogate: 4-Terphenyl-d14	102 %		58 - 113		B3G0121	07/09/2013	07/10/13 01:17	
Surrogate: Nitrobenzene-d5	94.0 %		39 - 95		B3G0121	07/09/2013	07/10/13 01:17	



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Reported : 07/22/2013

Client Sample ID PF

Lab ID: 1301939-03

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	3.7	NA	1	B3G0072	07/05/2013	07/05/13 08:30	



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Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID POX

Lab ID: 1301939-04

Bromide by Ion Chromatography EPA 300

Analyst: Phali

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.18	0.05	NA	1	B3G0106	07/08/2013	07/08/13 14:06	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	660	10	NA	1	B3G0082	07/05/2013	07/08/13 09:10	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,1-Dichloroethane	0.53	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,1-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
2-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
4-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Benzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID POX

Lab ID: 1301939-04

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Bromodichloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Bromoform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Bromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Carbon tetrachloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Chlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Chloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Chloroform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Chloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Dibromochloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Dibromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Ethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Isopropylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
m,p-Xylene	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Methylene chloride	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
n-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
n-Propylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Naphthalene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
o-Xylene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
sec-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Styrene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
tert-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Tetrachloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Toluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Trichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	
Vinyl chloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 20:08	

Surrogate: 1,2-Dichloroethane-d4	84.4 %	70 - 130	B3G0043	07/03/2013	07/03/13 20:08
Surrogate: 4-Bromofluorobenzene	82.1 %	70 - 130	B3G0043	07/03/2013	07/03/13 20:08
Surrogate: Dibromofluoromethane	88.2 %	70 - 130	B3G0043	07/03/2013	07/03/13 20:08
Surrogate: Toluene-d8	79.8 %	70 - 130	B3G0043	07/03/2013	07/03/13 20:08



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID POX

Lab ID: 1301939-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.98	0.20	NA	1	B3G0145	07/09/2013	07/11/13 10:53	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.3 %</i>		<i>47 - 117</i>		B3G0145	07/09/2013	<i>07/11/13 10:53</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.7 %</i>		<i>48 - 121</i>		B3G0145	07/09/2013	<i>07/11/13 10:53</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>62.0 %</i>		<i>58 - 142</i>		B3G0145	07/09/2013	<i>07/11/13 10:53</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>92.3 %</i>		<i>27 - 151</i>		B3G0145	07/09/2013	<i>07/11/13 10:53</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID CBT

Lab ID: 1301939-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,1-Dichloroethane	0.50	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,1-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
2-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
4-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Benzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Bromobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Bromodichloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Bromoform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Bromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Carbon tetrachloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Chlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Chloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Chloroform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Chloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Dibromochloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID CBT

Lab ID: 1301939-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Ethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Isopropylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
m,p-Xylene	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Methylene chloride	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
n-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
n-Propylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Naphthalene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
o-Xylene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
sec-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Styrene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
tert-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Tetrachloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Toluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Trichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Vinyl chloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:44	
Surrogate: 1,2-Dichloroethane-d4	85.7 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:44	
Surrogate: 4-Bromofluorobenzene	81.5 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:44	
Surrogate: Dibromofluoromethane	90.1 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:44	
Surrogate: Toluene-d8	80.4 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:44	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID CEFF

Lab ID: 1301939-06

Bromide by Ion Chromatography EPA 300

Analyst: Phali

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.19	0.05	NA	1	B3G0106	07/08/2013	07/08/13 14:18	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	660	10	NA	1	B3G0082	07/05/2013	07/08/13 09:10	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,1-Dichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,1-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,1-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2-Dibromoethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2-Dichloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,3-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
2,2-Dichloropropane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
2-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
4-Chlorotoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
4-Isopropyltoluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Benzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 07/22/2013

Client Sample ID CEFF

Lab ID: 1301939-06

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Bromodichloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Bromoform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Bromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Carbon tetrachloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Chlorobenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Chloroethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Chloroform	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Chloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Dibromochloromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Dibromomethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Dichlorodifluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Ethylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Hexachlorobutadiene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Isopropylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
m,p-Xylene	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Methylene chloride	ND	1.0	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
n-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
n-Propylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Naphthalene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
o-Xylene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
sec-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Styrene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
tert-Butylbenzene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Tetrachloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Toluene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Trichloroethene	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Trichlorofluoromethane	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Vinyl chloride	ND	0.50	NA	1	B3G0043	07/03/2013	07/03/13 19:21	
Surrogate: 1,2-Dichloroethane-d4	85.7 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:21	
Surrogate: 4-Bromofluorobenzene	82.6 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:21	
Surrogate: Dibromofluoromethane	89.0 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:21	
Surrogate: Toluene-d8	73.2 %		70 - 130		B3G0043	07/03/2013	07/03/13 19:21	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

QUALITY CONTROL SECTION

Bromide by Ion Chromatography EPA 300 - Quality Control

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

Batch B3G0106 - No_Prep_IC_1

Blank (B3G0106-BLK1)

Prepared: 7/8/2013 Analyzed: 7/8/2013

Bromide ND 0.05 NR

LCS (B3G0106-BS1)

Prepared: 7/8/2013 Analyzed: 7/8/2013

Bromide 0.930500 0.05 1.00000 93.0 90 - 110

Duplicate (B3G0106-DUP1)

Source: 1301970-02

Prepared: 7/8/2013 Analyzed: 7/8/2013

Bromide ND 2.5 ND NR 20

Matrix Spike (B3G0106-MS1)

Source: 1301970-02

Prepared: 7/8/2013 Analyzed: 7/8/2013

Bromide ND 2.5 2.50000 ND NR 80 - 120 M6

Matrix Spike Dup (B3G0106-MSD1)

Source: 1301970-02

Prepared: 7/8/2013 Analyzed: 7/8/2013

Bromide ND 2.5 2.50000 ND NR 80 - 120 20 M6



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San Diego , CA 92122

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

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

Batch B3G0082 - No_Prep_WC_1

Blank (B3G0082-BLK1)

Prepared: 7/5/2013 Analyzed: 7/8/2013

Residue, Dissolved

ND

10

NR

LCS (B3G0082-BS1)

Prepared: 7/5/2013 Analyzed: 7/8/2013

Residue, Dissolved

997.000

10

970.000

103

80 - 120

Duplicate (B3G0082-DUP1)

Source: 1301943-01

Prepared: 7/5/2013 Analyzed: 7/8/2013

Residue, Dissolved

2631.43

29

2557.14

NR

2.86

10



Certificate of Analysis

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Report To : Steve Netto

Reported : 07/22/2013

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

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

Batch B3G0072 - No_Prep_WC_1

Blank (B3G0072-BLK1)

Prepared: 7/5/2013 Analyzed: 7/5/2013

Residue, Suspended

ND

10

NR

LCS (B3G0072-BS1)

Prepared: 7/5/2013 Analyzed: 7/5/2013

Residue, Suspended

98.0000

10

96.6000

101

80 - 120

Duplicate (B3G0072-DUP1)

Source: 1301964-01

Prepared: 7/5/2013 Analyzed: 7/5/2013

Residue, Suspended

1580.00

67

1586.67

NR

0.421

10



Certificate of Analysis

Hargis & Associates, Inc.

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Reported : 07/22/2013

Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3G0043 - MSVOAW_LL

Blank (B3G0043-BLK1)

Prepared: 7/3/2013 Analyzed: 7/3/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR



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

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

Batch B3G0043 - MSVOAW_LL (continued)

Blank (B3G0043-BLK1) - Continued

Prepared: 7/3/2013 Analyzed: 7/3/2013

Isopropylbenzene	ND	0.50				NR			
m,p-Xylene	ND	1.0				NR			
Methylene chloride	ND	1.0				NR			
n-Butylbenzene	ND	0.50				NR			
n-Propylbenzene	ND	0.50				NR			
Naphthalene	ND	0.50				NR			
o-Xylene	ND	0.50				NR			
sec-Butylbenzene	ND	0.50				NR			
Styrene	ND	0.50				NR			
tert-Butylbenzene	ND	0.50				NR			
Tetrachloroethene	ND	0.50				NR			
Toluene	ND	0.50				NR			
trans-1,2-Dichloroethene	ND	0.50				NR			
Trichloroethene	ND	0.50				NR			
Trichlorofluoromethane	ND	0.50				NR			
Vinyl chloride	ND	0.50				NR			

Surrogate: 1,2-Dichloroethane-d4	20.43		25.0000		81.7	70 - 130			
Surrogate: 4-Bromofluorobenzene	20.71		25.0000		82.8	70 - 130			
Surrogate: Dibromofluoromethane	22.02		25.0000		88.1	70 - 130			
Surrogate: Toluene-d8	20.91		25.0000		83.6	70 - 130			

LCS (B3G0043-BS1)

Prepared: 7/3/2013 Analyzed: 7/3/2013

1,1-Dichloroethene	17.3200		20.0000		86.6	70 - 130			
Benzene	35.6800		40.0000		89.2	70 - 130			
Chlorobenzene	19.8000		20.0000		99.0	70 - 130			
MTBE	18.4200		20.0000		92.1	70 - 130			
Toluene	35.4600		40.0000		88.6	70 - 130			
Trichloroethene	18.9300		20.0000		94.6	70 - 130			

Surrogate: 1,2-Dichloroethane-d4	20.24		25.0000		81.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	21.08		25.0000		84.3	70 - 130			
Surrogate: Dibromofluoromethane	21.11		25.0000		84.4	70 - 130			
Surrogate: Toluene-d8	21.17		25.0000		84.7	70 - 130			

LCS Dup (B3G0043-BSD1)

Prepared: 7/3/2013 Analyzed: 7/3/2013

1,1-Dichloroethene	19.1400		20.0000		95.7	70 - 130	9.98	20	
Benzene	37.4800		40.0000		93.7	70 - 130	4.92	20	
Chlorobenzene	20.4400		20.0000		102	70 - 130	3.18	20	
MTBE	19.2000		20.0000		96.0	70 - 130	4.15	20	
Toluene	37.7900		40.0000		94.5	70 - 130	6.36	20	
Trichloroethene	20.1900		20.0000		101	70 - 130	6.44	20	

Surrogate: 1,2-Dichloroethane-d4	20.59		25.0000		82.4	70 - 130			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

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

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

Batch B3G0043 - MSVOAW_LL (continued)

LCS Dup (B3G0043-BSD1) - Continued

Prepared: 7/3/2013 Analyzed: 7/3/2013

Surrogate: 4-Bromofluorobenzene	21.48		25.0000		85.9	70 - 130			
Surrogate: Dibromofluoromethane	20.75		25.0000		83.0	70 - 130			
Surrogate: Toluene-d8	21.32		25.0000		85.3	70 - 130			

Batch B3G0118 - MSVOAW_LL

Blank (B3G0118-BLK1)

Prepared: 7/9/2013 Analyzed: 7/9/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR				
1,1,1-Trichloroethane	ND	0.50			NR				
1,1,2,2-Tetrachloroethane	ND	0.50			NR				
1,1,2-Trichloroethane	ND	0.50			NR				
1,1-Dichloroethane	ND	0.50			NR				
1,1-Dichloroethene	ND	0.50			NR				
1,1-Dichloropropene	ND	0.50			NR				
1,2,3-Trichloropropane	ND	0.50			NR				
1,2,3-Trichlorobenzene	ND	0.50			NR				
1,2,4-Trichlorobenzene	ND	0.50			NR				
1,2,4-Trimethylbenzene	ND	0.50			NR				
1,2-Dibromo-3-chloropropane	ND	0.50			NR				
1,2-Dibromoethane	ND	0.50			NR				
1,2-Dichlorobenzene	ND	0.50			NR				
1,2-Dichloroethane	ND	0.50			NR				
1,2-Dichloropropane	ND	0.50			NR				
1,3,5-Trimethylbenzene	ND	0.50			NR				
1,3-Dichlorobenzene	ND	0.50			NR				
1,3-Dichloropropane	ND	0.50			NR				
1,4-Dichlorobenzene	ND	0.50			NR				
2,2-Dichloropropane	ND	0.50			NR				
2-Chlorotoluene	ND	0.50			NR				
4-Chlorotoluene	ND	0.50			NR				
4-Isopropyltoluene	ND	0.50			NR				
Benzene	ND	0.50			NR				
Bromobenzene	ND	0.50			NR				
Bromodichloromethane	ND	0.50			NR				
Bromoform	ND	0.50			NR				
Bromomethane	ND	0.50			NR				
Carbon tetrachloride	ND	0.50			NR				
Chlorobenzene	ND	0.50			NR				
Chloroethane	ND	0.50			NR				
Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

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

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

Batch B3G0118 - MSVOAW_LL (continued)

Blank (B3G0118-BLK1) - Continued

Prepared: 7/9/2013 Analyzed: 7/9/2013

cis-1,2-Dichloroethene	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Dibromomethane	ND	0.50			NR				
Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	21.28	25.0000	85.1	70 - 130
Surrogate: 4-Bromofluorobenzene	19.74	25.0000	79.0	70 - 130
Surrogate: Dibromofluoromethane	22.21	25.0000	88.8	70 - 130
Surrogate: Toluene-d8	17.91	25.0000	71.6	70 - 130

LCS (B3G0118-BS1)

Prepared: 7/9/2013 Analyzed: 7/9/2013

1,1-Dichloroethene	20.9200	20.0000	105	70 - 130
Benzene	39.6600	40.0000	99.2	70 - 130
Chlorobenzene	20.9400	20.0000	105	70 - 130
MTBE	19.6600	20.0000	98.3	70 - 130
Toluene	38.5200	40.0000	96.3	70 - 130
Trichloroethene	21.6700	20.0000	108	70 - 130

Surrogate: 1,2-Dichloroethane-d4	21.59	25.0000	86.4	70 - 130
Surrogate: 4-Bromofluorobenzene	21.13	25.0000	84.5	70 - 130
Surrogate: Dibromofluoromethane	21.98	25.0000	87.9	70 - 130
Surrogate: Toluene-d8	20.90	25.0000	83.6	70 - 130

LCS Dup (B3G0118-BSD1)

Prepared: 7/9/2013 Analyzed: 7/9/2013



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

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

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

Batch B3G0118 - MSVOAW_LL (continued)

LCS Dup (B3G0118-BSD1) - Continued

Prepared: 7/9/2013 Analyzed: 7/9/2013

1,1-Dichloroethene	20.4600		20.0000		102	70 - 130	2.22	20	
Benzene	39.1700		40.0000		97.9	70 - 130	1.24	20	
Chlorobenzene	20.7100		20.0000		104	70 - 130	1.10	20	
MTBE	20.1000		20.0000		100	70 - 130	2.21	20	
Toluene	38.0900		40.0000		95.2	70 - 130	1.12	20	
Trichloroethene	20.8400		20.0000		104	70 - 130	3.90	20	
Surrogate: 1,2-Dichloroethane-d4	21.67		25.0000		86.7	70 - 130			
Surrogate: 4-Bromofluorobenzene	21.25		25.0000		85.0	70 - 130			
Surrogate: Dibromofluoromethane	21.67		25.0000		86.7	70 - 130			
Surrogate: Toluene-d8	20.84		25.0000		83.4	70 - 130			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

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

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

Batch B3G0121 - MSSEMI_ISOTOPEDILN

Blank (B3G0121-BLK1)

Prepared: 7/9/2013 Analyzed: 7/9/2013

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	58.60		100.000		58.6	37 - 93			
Surrogate: 2-Fluorobiphenyl	70.27		100.000		70.3	51 - 100			
Surrogate: 4-Terphenyl-d14	93.57		100.000		93.6	58 - 113			
Surrogate: Nitrobenzene-d5	72.62		100.000		72.6	39 - 95			

LCS (B3G0121-BS1)

Prepared: 7/9/2013 Analyzed: 7/9/2013

1,4-Dioxane	104.210	2.0	100.000		104	70 - 130			
Surrogate: 1,2-Dichlorobenzene-d4	66.45		100.000		66.4	37 - 93			
Surrogate: 2-Fluorobiphenyl	83.85		100.000		83.8	51 - 100			
Surrogate: 4-Terphenyl-d14	99.31		100.000		99.3	58 - 113			
Surrogate: Nitrobenzene-d5	85.12		100.000		85.1	39 - 95			

LCS Dup (B3G0121-BSD1)

Prepared: 7/9/2013 Analyzed: 7/9/2013

1,4-Dioxane	103.680	2.0	100.000		104	70 - 130	0.510	20	
Surrogate: 1,2-Dichlorobenzene-d4	65.02		100.000		65.0	37 - 93			
Surrogate: 2-Fluorobiphenyl	79.28		100.000		79.3	51 - 100			
Surrogate: 4-Terphenyl-d14	95.58		100.000		95.6	58 - 113			
Surrogate: Nitrobenzene-d5	80.14		100.000		80.1	39 - 95			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

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

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

Batch B3G0145 - MSSEMI

Blank (B3G0145-BLK1)

Prepared: 7/9/2013 Analyzed: 7/11/2013

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.5271		1.00000	52.7	47 - 117				
Surrogate: 2-Fluorobiphenyl	0.6454		1.00000	64.5	48 - 121				
Surrogate: 4-Terphenyl-d14	0.5829		1.00000	58.3	58 - 142				
Surrogate: Nitrobenzene-d5	0.8349		1.00000	83.5	27 - 151				

LCS (B3G0145-BS1)

Prepared: 7/9/2013 Analyzed: 7/11/2013

1,4-Dioxane	0.658030	0.20	1.00000	65.8	58 - 151				
Surrogate: 1,2-Dichlorobenzene-d4	0.8390		1.00000	83.9	47 - 117				
Surrogate: 2-Fluorobiphenyl	0.8752		1.00000	87.5	48 - 121				
Surrogate: 4-Terphenyl-d14	0.7445		1.00000	74.4	58 - 142				
Surrogate: Nitrobenzene-d5	1.201		1.00000	120	27 - 151				

LCS Dup (B3G0145-BSD1)

Prepared: 7/9/2013 Analyzed: 7/11/2013

1,4-Dioxane	0.625820	0.20	1.00000	62.6	58 - 151	5.02	20		
Surrogate: 1,2-Dichlorobenzene-d4	0.8103		1.00000	81.0	47 - 117				
Surrogate: 2-Fluorobiphenyl	0.8600		1.00000	86.0	48 - 121				
Surrogate: 4-Terphenyl-d14	0.7626		1.00000	76.3	58 - 142				
Surrogate: Nitrobenzene-d5	1.154		1.00000	115	27 - 151				



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 07/22/2013

Notes and Definitions

M6	Matrix spike analyte was diluted out.
ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.

Client: Advanced Technology Laboratories
Job No.: 149506

Bromate by EPA 317.0
Ion Chromatography/Post-Column Reaction-Visible Absorption Spectroscopy

Column: Dionex AS9-HC 4 x 250 mm, AG9-HC Guard 4 x 50 mm
Eluent: 10 mM Na₂CO₃
Flow: 1.20 mL/min
Injection: 250 µL
Detection: Visible, 450 nm

Sample preparation: The undiluted samples were treated with a 2.5 mL Dionex OnGuard II H cartridge to remove excess basic cations. One sample required dilution with water by 1:5 for analysis. The detection limit is adjusted for the dilution.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>	<u>Detection Limit</u>
ATL Lab#: 1301939-02 / EW-02	ND	0.3
ATL Lab#: 1301939-04 / POX	5	2
ATL Lab#: 1301939-06 / CEFF	4.3	0.3
ATL Lab#: 1301939-06 / CEFF Duplicate	4.2	0.3
Method Blank	ND	0.3

Date Analyzed: 07-19-13

Quality Control Summary

Sample ID: ATL Lab#: 1301939-06 / CEFF

<u>Analyte</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Sample RPD</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>
Bromate	4.3	4.2	2	20.0	23.2	95
QC Guidelines			NMT 10			75-125

Exova Inc – Santa Fe Springs – 562-948-2225
The above data is considered preliminary and may not reflect final reported values.
A final signed report will be mailed to you.

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1301939

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)

RECEIVING LABORATORY:

Exova Inc.
9240 Santa Fe Springs Road
Santa Fe Springs, CA 90670
Phone : (562) 948-2225
Fax: (562) 948-5850
PO#: SC08085 - STANDARD TA1

RA

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

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1301939-02 / EW-02			Groundwater	07/02/13 09:55
317.0	07/17/13 17:00	07/03/13 09:55		
[Bromate]				
1-Poly Unpres - 125mL				
ATL Lab#: 1301939-04 / POX			Groundwater	07/02/13 09:10
317.0	07/17/13 17:00	07/03/13 09:10		
[Bromate]				
1-Poly Unpres - 125mL				
ATL Lab#: 1301939-06 / CEFF			Groundwater	07/02/13 09:23
317.0	07/17/13 17:00	07/03/13 09:23		
[Bromate]				
1-Poly Unpres - 125mL				

Released By <i>[Signature]</i>	Date <i>7/13/13</i>	Received By <i>[Signature]</i>	Date <i>7-3-13 9:19</i>
Released By <i>[Signature]</i>	Date <i>7-3-13 10:22</i>	Received By <i>[Signature]</i>	Date <i>07-03-13 A 10:23</i>



DATE 7/2/13 PAGE 1 OF 1

[illegible]



August 26, 2013

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



Re: ATL Work Order Number : 1302385
Client Reference : Raytheon Main: Fullerton Monthly, 532.15

Enclosed are the results for sample(s) received on August 10, 2013 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 "Eddie Rodriguez", is shown over a light blue rectangular background.

Eddie Rodriguez
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 the National Environmental Laboratory Accreditation Conference and/or 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: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-081013	1302385-01	Lab H2O	8/10/13 10:00	8/10/13 12:27
EW-02	1302385-02	Groundwater	8/10/13 11:05	8/10/13 12:27
PF	1302385-03	Groundwater	8/10/13 10:20	8/10/13 12:27
POX	1302385-04	Groundwater	8/10/13 10:25	8/10/13 12:27
CBT	1302385-05	Groundwater	8/10/13 10:35	8/10/13 12:27
CEFF	1302385-06	Groundwater	8/10/13 10:40	8/10/13 12:27

CASE NARRATIVE

The samples for EPA 317 (Bromate) analysis were subcontracted to Exova, Inc. with ELAP Cert.# 2652.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID TB-081013

Lab ID: 1302385-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,1-Dichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
2-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
4-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Benzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Bromobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Bromodichloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Bromoform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Bromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Carbon tetrachloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Chlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Chloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Chloroform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Chloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Dibromochloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID TB-081013

Lab ID: 1302385-01

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Ethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Isopropylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
m,p-Xylene	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Methylene chloride	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
n-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
n-Propylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Naphthalene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
o-Xylene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
sec-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Styrene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
tert-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Tetrachloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Toluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Trichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Vinyl chloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 12:54	
Surrogate: 1,2-Dichloroethane-d4	92.4 %		70 - 130		B3H0257	08/14/2013	08/14/13 12:54	
Surrogate: 4-Bromofluorobenzene	97.7 %		70 - 130		B3H0257	08/14/2013	08/14/13 12:54	
Surrogate: Dibromofluoromethane	97.2 %		70 - 130		B3H0257	08/14/2013	08/14/13 12:54	
Surrogate: Toluene-d8	91.3 %		70 - 130		B3H0257	08/14/2013	08/14/13 12:54	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID EW-02

Lab ID: 1302385-02

Bromide by Ion Chromatography EPA 300

Analyst: Phali

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.17	0.05	NA	1	B3H0261	08/13/2013	08/13/13 09:44	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	670	10	NA	1	B3H0280	08/13/2013	08/14/13 08:00	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	3.7	NA	1	B3H0272	08/13/2013	08/13/13 15:12	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,1-Dichloroethane	0.76	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,1-Dichloroethene	80	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID EW-02

Lab ID: 1302385-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
2-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
4-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Benzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Bromobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Bromodichloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Bromoform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Bromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Carbon tetrachloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Chlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Chloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Chloroform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Chloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Dibromochloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Dibromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Ethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Isopropylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
m,p-Xylene	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Methylene chloride	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
n-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
n-Propylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Naphthalene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
o-Xylene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
sec-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Styrene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
tert-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Tetrachloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Toluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Trichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID EW-02

Lab ID: 1302385-02

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl chloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:52	
Surrogate: 1,2-Dichloroethane-d4	93.9 %		70 - 130		B3H0257	08/14/2013	08/14/13 14:52	
Surrogate: 4-Bromofluorobenzene	95.7 %		70 - 130		B3H0257	08/14/2013	08/14/13 14:52	
Surrogate: Dibromofluoromethane	99.4 %		70 - 130		B3H0257	08/14/2013	08/14/13 14:52	
Surrogate: Toluene-d8	90.4 %		70 - 130		B3H0257	08/14/2013	08/14/13 14:52	

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	24	2.0	NA	1	B3H0241	08/13/2013	08/14/13 01:56	
Surrogate: 1,2-Dichlorobenzene-d4	86.2 %		37 - 93		B3H0241	08/13/2013	08/14/13 01:56	
Surrogate: 2-Fluorobiphenyl	95.9 %		51 - 100		B3H0241	08/13/2013	08/14/13 01:56	
Surrogate: 4-Terphenyl-d14	109 %		58 - 113		B3H0241	08/13/2013	08/14/13 01:56	
Surrogate: Nitrobenzene-d5	86.8 %		39 - 95		B3H0241	08/13/2013	08/14/13 01:56	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID PF

Lab ID: 1302385-03

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	3.7	NA	1	B3H0272	08/13/2013	08/13/13 15:14	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID POX

Lab ID: 1302385-04

Bromide by Ion Chromatography EPA 300

Analyst: Phali

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.15	0.05	NA	1	B3H0261	08/13/2013	08/13/13 09:55	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	660	10	NA	1	B3H0280	08/13/2013	08/14/13 08:00	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,1-Dichloroethane	0.54	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
2-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
4-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Benzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID POX

Lab ID: 1302385-04

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Bromodichloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Bromoform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Bromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Carbon tetrachloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Chlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Chloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Chloroform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Chloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Dibromochloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Dibromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Ethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Isopropylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
m,p-Xylene	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Methylene chloride	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
n-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
n-Propylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Naphthalene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
o-Xylene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
sec-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Styrene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
tert-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Tetrachloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Toluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Trichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	
Vinyl chloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 14:05	

Surrogate: 1,2-Dichloroethane-d4

92.6 %

70 - 130

B3H0257

08/14/2013

08/14/13 14:05

Surrogate: 4-Bromofluorobenzene

99.2 %

70 - 130

B3H0257

08/14/2013

08/14/13 14:05

Surrogate: Dibromofluoromethane

98.6 %

70 - 130

B3H0257

08/14/2013

08/14/13 14:05

Surrogate: Toluene-d8

90.3 %

70 - 130

B3H0257

08/14/2013

08/14/13 14:05



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID POX

Lab ID: 1302385-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.86	0.20	NA	1	B3H0237	08/13/2013	08/14/13 10:16	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>75.7 %</i>		<i>47 - 117</i>		B3H0237	08/13/2013	<i>08/14/13 10:16</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>79.3 %</i>		<i>48 - 121</i>		B3H0237	08/13/2013	<i>08/14/13 10:16</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>103 %</i>		<i>58 - 142</i>		B3H0237	08/13/2013	<i>08/14/13 10:16</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>61.3 %</i>		<i>27 - 151</i>		B3H0237	08/13/2013	<i>08/14/13 10:16</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID CBT

Lab ID: 1302385-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,1-Dichloroethane	0.52	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
2-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
4-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Benzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Bromobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Bromodichloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Bromoform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Bromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Carbon tetrachloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Chlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Chloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Chloroform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Chloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Dibromochloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID CBT

Lab ID: 1302385-05

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Ethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Isopropylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
m,p-Xylene	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Methylene chloride	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
n-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
n-Propylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Naphthalene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
o-Xylene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
sec-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Styrene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
tert-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Tetrachloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Toluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Trichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Vinyl chloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:41	
Surrogate: 1,2-Dichloroethane-d4	92.6 %		70 - 130		B3H0257	08/14/2013	08/14/13 13:41	
Surrogate: 4-Bromofluorobenzene	98.1 %		70 - 130		B3H0257	08/14/2013	08/14/13 13:41	
Surrogate: Dibromofluoromethane	99.8 %		70 - 130		B3H0257	08/14/2013	08/14/13 13:41	
Surrogate: Toluene-d8	91.6 %		70 - 130		B3H0257	08/14/2013	08/14/13 13:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID CEFF

Lab ID: 1302385-06

Bromide by Ion Chromatography EPA 300

Analyst: Phali

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.14	0.05	NA	1	B3H0261	08/13/2013	08/13/13 10:06	

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

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	650	10	NA	1	B3H0280	08/13/2013	08/14/13 08:00	

Volatile Organic Compounds by EPA 8260

Analyst: SL

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	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,1,1-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,1,2,2-Tetrachloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,1,2-Trichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,1-Dichloroethane	0.53	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,1-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,1-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2,3-Trichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2,3-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2,4-Trichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2,4-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2-Dibromo-3-chloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2-Dibromoethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2-Dichloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,3,5-Trimethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,3-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,3-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
1,4-Dichlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
2,2-Dichloropropane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
2-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
4-Chlorotoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
4-Isopropyltoluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Benzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1:

Report To : Steve Netto

Reported : 08/26/2013

Client Sample ID CEFF

Lab ID: 1302385-06

Volatile Organic Compounds by EPA 8260

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Bromodichloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Bromoform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Bromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Carbon tetrachloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Chlorobenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Chloroethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Chloroform	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Chloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
cis-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
cis-1,3-Dichloropropene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Dibromochloromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Dibromomethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Dichlorodifluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Ethylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Hexachlorobutadiene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Isopropylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
m,p-Xylene	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Methylene chloride	ND	1.0	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
n-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
n-Propylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Naphthalene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
o-Xylene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
sec-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Styrene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
tert-Butylbenzene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Tetrachloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Toluene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
trans-1,2-Dichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Trichloroethene	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Trichlorofluoromethane	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	
Vinyl chloride	ND	0.50	NA	1	B3H0257	08/14/2013	08/14/13 13:18	

Surrogate: 1,2-Dichloroethane-d4

90.4 %

70 - 130

B3H0257

08/14/2013

08/14/13 13:18

Surrogate: 4-Bromofluorobenzene

93.9 %

70 - 130

B3H0257

08/14/2013

08/14/13 13:18

Surrogate: Dibromofluoromethane

95.3 %

70 - 130

B3H0257

08/14/2013

08/14/13 13:18

Surrogate: Toluene-d8

90.4 %

70 - 130

B3H0257

08/14/2013

08/14/13 13:18



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

QUALITY CONTROL SECTION

Bromide by Ion Chromatography EPA 300 - Quality Control

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

Batch B3H0261 - No_Prep_IC_1

Blank (B3H0261-BLK1)

Prepared: 8/13/2013 Analyzed: 8/13/2013

Bromide ND 0.05 NR

LCS (B3H0261-BS1)

Prepared: 8/13/2013 Analyzed: 8/13/2013

Bromide 0.919800 0.05 1.00000 92.0 90 - 110

Duplicate (B3H0261-DUP1)

Source: 1302394-01

Prepared: 8/13/2013 Analyzed: 8/13/2013

Bromide ND 1.0 1.41500 NR 20

Matrix Spike (B3H0261-MS1)

Source: 1302394-01

Prepared: 8/13/2013 Analyzed: 8/13/2013

Bromide 3.15000 1.0 2.50000 1.41500 69.4 80 - 120 M1

Matrix Spike Dup (B3H0261-MSD1)

Source: 1302394-01

Prepared: 8/13/2013 Analyzed: 8/13/2013

Bromide 2.97800 1.0 2.50000 1.41500 62.5 80 - 120 5.61 20 M1



Certificate of Analysis

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Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

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

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

Batch B3H0280 - No_Prep_WC_1

Blank (B3H0280-BLK1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

Residue, Dissolved

ND

10

NR

LCS (B3H0280-BS1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

Residue, Dissolved

983.000

10

970.000

101

80 - 120

Duplicate (B3H0280-DUP1)

Source: 1302397-01

Prepared: 8/13/2013 Analyzed: 8/14/2013

Residue, Dissolved

940.000

10

943.000

NR

0.319

10



Certificate of Analysis

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Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

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

Batch B3H0272 - No_Prep_WC_1

Blank (B3H0272-BLK1)

Prepared: 8/13/2013 Analyzed: 8/13/2013

Residue, Suspended

ND

10

NR

LCS (B3H0272-BS1)

Prepared: 8/13/2013 Analyzed: 8/13/2013

Residue, Suspended

99.0000

10

96.6000

102

80 - 120

Duplicate (B3H0272-DUP1)

Source: 1302386-01

Prepared: 8/13/2013 Analyzed: 8/13/2013

Residue, Suspended

118.000

10

111.000

NR

6.11

10



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260 - Quality Control

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

Batch B3H0257 - MSVOAW_LL

Blank (B3H0257-BLK1)

Prepared: 8/14/2013 Analyzed: 8/14/2013

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

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

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

Batch B3H0257 - MSVOAW_LL (continued)

Blank (B3H0257-BLK1) - Continued

Prepared: 8/14/2013 Analyzed: 8/14/2013

Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	22.87		25.0000		91.5	70 - 130			
Surrogate: 4-Bromofluorobenzene	24.65		25.0000		98.6	70 - 130			
Surrogate: Dibromofluoromethane	24.45		25.0000		97.8	70 - 130			
Surrogate: Toluene-d8	24.34		25.0000		97.4	70 - 130			

LCS (B3H0257-BS1)

Prepared: 8/14/2013 Analyzed: 8/14/2013

1,1-Dichloroethene	15.7500		20.0000		78.8	70 - 130			
Benzene	34.7200		40.0000		86.8	70 - 130			
Chlorobenzene	17.4800		20.0000		87.4	70 - 130			
MTBE	18.4400		20.0000		92.2	70 - 130			
Toluene	33.4200		40.0000		83.6	70 - 130			
Trichloroethene	16.9500		20.0000		84.8	70 - 130			

Surrogate: 1,2-Dichloroethane-d4	22.24		25.0000		89.0	70 - 130			
Surrogate: 4-Bromofluorobenzene	25.11		25.0000		100	70 - 130			
Surrogate: Dibromofluoromethane	23.55		25.0000		94.2	70 - 130			
Surrogate: Toluene-d8	24.11		25.0000		96.4	70 - 130			

LCS Dup (B3H0257-BSD1)

Prepared: 8/14/2013 Analyzed: 8/14/2013

1,1-Dichloroethene	16.9600		20.0000		84.8	70 - 130	7.40	20	
Benzene	36.3000		40.0000		90.8	70 - 130	4.45	20	
Chlorobenzene	17.7600		20.0000		88.8	70 - 130	1.59	20	
MTBE	18.7500		20.0000		93.8	70 - 130	1.67	20	
Toluene	34.8600		40.0000		87.2	70 - 130	4.22	20	
Trichloroethene	17.3300		20.0000		86.6	70 - 130	2.22	20	

Surrogate: 1,2-Dichloroethane-d4	22.02		25.0000		88.1	70 - 130			



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

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

Batch B3H0257 - MSVOAW_LL (continued)

LCS Dup (B3H0257-BSD1) - Continued

Prepared: 8/14/2013 Analyzed: 8/14/2013

Surrogate: 4-Bromofluorobenzene	25.09		25.0000		100	70 - 130			
Surrogate: Dibromofluoromethane	23.48		25.0000		93.9	70 - 130			
Surrogate: Toluene-d8	24.32		25.0000		97.3	70 - 130			

Duplicate (B3H0257-DUP1)

Source: 1302420-01

Prepared: 8/14/2013 Analyzed: 8/14/2013

1,1-Dichloroethene	ND	0.50		ND	NR			20	
Benzene	ND	0.50		ND	NR			20	
Chlorobenzene	ND	0.50		ND	NR			20	
MTBE	ND	0.50		ND	NR			20	
Toluene	ND	0.50		ND	NR			20	
Trichloroethene	ND	0.50		ND	NR			20	
Surrogate: 1,2-Dichloroethane-d4	23.22		25.0000		92.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	26.30		25.0000		105	70 - 130			
Surrogate: Dibromofluoromethane	25.09		25.0000		100	70 - 130			
Surrogate: Toluene-d8	22.48		25.0000		89.9	70 - 130			



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Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

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

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

Batch B3H0241 - MSSEMI_ISOTOPEDILN

Blank (B3H0241-BLK1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	75.35		100.000		75.4	37 - 93			
Surrogate: 2-Fluorobiphenyl	85.22		100.000		85.2	51 - 100			
Surrogate: 4-Terphenyl-d14	103.0		100.000		103	58 - 113			
Surrogate: Nitrobenzene-d5	74.80		100.000		74.8	39 - 95			

LCS (B3H0241-BS1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

1,4-Dioxane	82.5500	2.0	100.000		82.6	70 - 130			
Surrogate: 1,2-Dichlorobenzene-d4	79.58		100.000		79.6	37 - 93			
Surrogate: 2-Fluorobiphenyl	90.00		100.000		90.0	51 - 100			
Surrogate: 4-Terphenyl-d14	100.5		100.000		101	58 - 113			
Surrogate: Nitrobenzene-d5	88.87		100.000		88.9	39 - 95			

LCS Dup (B3H0241-BSD1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

1,4-Dioxane	83.4600	2.0	100.000		83.5	70 - 130	1.10	20	
Surrogate: 1,2-Dichlorobenzene-d4	82.72		100.000		82.7	37 - 93			
Surrogate: 2-Fluorobiphenyl	95.88		100.000		95.9	51 - 100			
Surrogate: 4-Terphenyl-d14	106.9		100.000		107	58 - 113			
Surrogate: Nitrobenzene-d5	91.46		100.000		91.5	39 - 95			



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Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

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

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

Batch B3H0237 - MSSEMI

Blank (B3H0237-BLK1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7303		1.00000		73.0	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7995		1.00000		80.0	48 - 121			
Surrogate: 4-Terphenyl-d14	1.070		1.00000		107	58 - 142			
Surrogate: Nitrobenzene-d5	0.4283		1.00000		42.8	27 - 151			

LCS (B3H0237-BS1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

1,4-Dioxane	0.979220	0.20	1.00000		97.9	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.6500		1.00000		65.0	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7382		1.00000		73.8	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9099		1.00000		91.0	58 - 142			
Surrogate: Nitrobenzene-d5	0.4338		1.00000		43.4	27 - 151			

LCS Dup (B3H0237-BSD1)

Prepared: 8/13/2013 Analyzed: 8/14/2013

1,4-Dioxane	1.01222	0.20	1.00000		101	58 - 151	3.31	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6694		1.00000		66.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7276		1.00000		72.8	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9545		1.00000		95.5	58 - 142			
Surrogate: Nitrobenzene-d5	0.4786		1.00000		47.9	27 - 151			



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San Diego , CA 92122

Project Number : Raytheon Main: Fullerton Monthly, 532.1.

Report To : Steve Netto

Reported : 08/26/2013

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte not detected at or above reporting limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA1	CA-NELAP (CDPH)
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

- 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.

Client: Advanced Technology Laboratories
Job No.: 150546

Bromate by EPA 317.0
Ion Chromatography/Post-Column Reaction-Visible Absorption Spectroscopy

Column: Dionex AS9-HC 4 x 250 mm, AG9-HC Guard 4 x 50 mm
Eluent: 10 mM Na₂CO₃
Flow: 1.20 mL/min
Injection: 250 µL
Detection: Visible, 450 nm

Sample preparation: The undiluted samples were treated with a 2.5 mL Dionex OnGuard II H cartridge to remove excess basic cations. One sample required dilution with water by 1:4 for analysis. The detection limit is adjusted for the dilution.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>	<u>Detection Limit</u>
ATL Lab#: 1302385-02 / EW-02	0.3	0.3
ATL Lab#: 1302385-04 / POX	6	1
ATL Lab#: 1302385-06 / CEFF	4.9	0.3
ATL Lab#: 1302385-06 / CEFF Duplicate	5.1	0.3
Method Blank	ND	0.3

Date Analyzed: 08-19-13

Quality Control Summary

Sample ID: ATL Lab#: 1302385-06 / CEFF

<u>Analyte</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Sample RPD</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>
Bromate	4.9	5.1	4	19.8	23.3	92
QC Guidelines			NMT 10			75-125

Exova Inc – Santa Fe Springs – 562-948-2225
The above data is considered preliminary and may not reflect final reported values.
A final signed report will be mailed to you.

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1302385

SENDING LABORATORY:

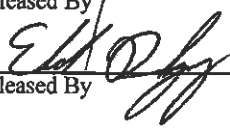
Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)

RECEIVING LABORATORY:

Exova Inc.
9240 Santa Fe Springs Road
Santa Fe Springs, CA 90670
Phone : (562) 948-2225
Fax: (562) 948-5850
PO#: SC08130 - STANDARD TAT (RA)

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

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1302385-02 / EW-02 317.0 [Bromate]	08/26/13 17:00	08/11/13 11:05	Groundwater 08/10/13 11:05	
1-Poly Unpres - 125mL				
ATL Lab#: 1302385-04 / POX 317.0 [Bromate]	08/26/13 17:00	08/11/13 10:25	Groundwater 08/10/13 10:25	
1-Poly Unpres - 125mL				
ATL Lab#: 1302385-06 / CEFF 317.0 [Bromate]	08/26/13 17:00	08/11/13 10:40	Groundwater 08/10/13 10:40	
1-Poly Unpres - 125mL				

Released By 	Date 08/12/13 13:40	Received By 	Date 8-12-13 13:40
Released By 	Date 8-12-13 15:15	Received By Marco Aguilar	Date 08-12-13 P 3:14



DATE 8/10/13 PAGE 1 OF 1

PROJECT NAME						PROJECT No./TASK No.								SAMPLE CONTAINERS				ANALYSIS REQUESTED				ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S				SPECIAL HANDLING	LABORATORY INFORMATION					
Raytheon Main: Fullerton Monthly						532.15																					Advanced Technology Laboratories 3275 Walnut Ave Signal Hill CA 90755 Attn: Rachelle Arada					
PROJECT MANAGER Chris Ross						Phone No. 858-455-6500																										
QA MANAGER Steve Netto						Fax No. 858-455-6533																										
SAMPLER (SIGNATURE)						SAMPLER (PRINTED)																										
						MARCO RODRIGUEZ																										
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION					40 ml VOA	125 ml Poly	250 ml Poly	1 L Amber	VOCs by EPA 8260B	1,4-Dioxane by EPA 8270SLM	1,4-Dioxane by EPA 8270MD	Bromate by EPA 317	Bromide by EPA 300	TDS by EPA SM 2540C	TSS by EPA SM2540D	ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S				SPECIAL HANDLING	REMARKS				
		Date	Time	Soil	Ground water	Surface water	Lab H ₂ O	HCl	HNO ₃	NaOH	H ₂ SO ₄												Ice	0-10	10-100	100-1,000			>1,000			
	TB-081013	8/10/13	10:00		X	X					X	2			X									X			Please include					
	EW-02		11:05	X								3	2	1	X	X	X	X	X					X			mrodriguez@hargis.com					
	Pf		10:20	X							X									X						in lab report						
	POX		10:25	X		X					X	3	2	1	X	X	X	X	X				X			distribution list.						
	CBT		10:35	X		X					X	3			X								X									
	CEFF	V	10:40	X		X					X	3	2	1	X	X	X	X					X			Set 1,4-Dioxane MDL to 1.0 ppm						
Total number of Containers per analysis:											14652											Total No. of Containers: 27										
Relinquished by: H+A Company		Date 8/10/13 Time 12:27	Received by: FPOWIA f AP Company		Date 8/10/13 Time 12:27	INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis 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. Sample Receipt: ☐ No. of containers correct ☒ received good condition/cold ☐ custody seals secure ☐ conforms to COC document Temp. @ receipt 4.8 °C																				Shipment Method: DELIVER Send Results to: Steve Netto ☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300 Send invoice to San Diego, CA Attn: Accounts Payable						
Relinquished by:		Date	Received by:		Date																											
Company		Time	Company		Time																											

ORIGINAL: LABORATORY YELLOW: QA MANAGER PINK: FIELD/TASK MANAGER