# **ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS**

This attachment contains the groundwater monitoring well results from the laboratory analytical reports prepared by Alpha Analytical Inc. of Sparks, Nevada and Columbia Analytical Services (CAS) of Simi Valley, California.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 16-Feb-10

David Conner

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

(818) 393-2808

Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

BMI10020301

**Cooler Temp:** 

4°C

	•	ooter remp.	
Alpha's Sample ID	Client's Sample ID	Matrix	
10020301-01A	MW-21-5	Aqueous	
10020301-02A	MW-21-4	Aqueous	
10020301-03A	MW-21-3	Aqueous	
10020301-04A	MW-21-2	Aqueous	
10020301-05A	MW-21-1	Aqueous	
10020301-06A	DUPE-1-1Q10	Aqueous	
10020301-07A	EB-1-2/2/10	Aqueous	
10020301-08A	TB-1-2/2/10	Aqueous	

#### **Manually Integrated Analytes**

		-	
Alpha's Sample ID	Test Reference	<u>Analyte</u>	
10020301-01A	EPA Method 314.0	Perchlorate	
10020301-02A	EPA Method 314.0	Perchlorate	
10020301-03A	EPA Method 314.0	Perchlorate	
10020301-04A	EPA Method 314.0	Perchlorate	
10020301-05A	EPA Method 314.0	Perchlorate	
10020301-06A	EPA Method 314.0	Perchlorate	

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Sanlmer

Walter Hirkory



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Date Received: 02/03/10

Job: G005862/JPL Groundwater Monitoring

### Perchlorate by Ion Chromatography EPA Method 314.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-21-5 Lab ID: BMI10020301-01A Date Sampled 02/02/10 08:05	Perchlorate	3.04	1.00 μg/L	02/04/10 11:56	02/04/10 14:46
Client ID: MW-21-4 Lab ID: BMI10020301-02A Date Sampled 02/02/10 08:28	Perchlorate	1.82	1.00 μg/L	02/04/10 11:56	02/04/10 15:05
Client ID: MW-21-3 Lab ID: BMI10020301-03A Date Sampled 02/02/10 08:56	Perchlorate	2.83	1.00 μg/L	02/04/10 11:56	02/04/10 15:23
Client ID: MW-21-2 Lab ID: BMI10020301-04A Date Sampled 02/02/10 09:24	Perchlorate	2.23	1.00 μg/L	02/04/10 11:56	02/04/10 15:41
Client ID: MW-21-1 Lab ID: BMI10020301-05A Date Sampled 02/02/10 09:59	Perchlorate	2.53	1.00 μg/L	02/04/10 11:56	02/04/10 16:00
Client ID: <b>DUPE-1-1Q10</b> Lab ID: BMI10020301-06A Date Sampled 02/02/10 00:00	Perchlorate	2.33	1.00 μg/L	02/04/10 11:56	02/04/10 16:18
Client ID: <b>EB-1-2/2/10</b> Lab ID: BMI10020301-07A Date Sampled 02/02/10 09:42	Perchlorate	ND	1.00 μg/L	02/04/10 11:56	02/04/10 18:16

ND = Not Detected

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Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/16/10 Report Date



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641 Date Received: 02/03/10

Job:

G005862/JPL Groundwater Monitoring

Metals by ICPMS EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-21-5 Lab ID: BMI10020301-01A Date Sampled 02/02/10 08:05	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 11:48
Client ID: MW-21-4 Lab ID: BMI10020301-02A Date Sampled 02/02/10 08:28	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 11:24
Client ID: MW-21-3 Lab ID: BMI10020301-03A Date Sampled 02/02/10 08:56	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 11:54
Client ID: MW-21-2 Lab ID: BMI10020301-04A Date Sampled 02/02/10 09:24	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 11:59
Client ID: MW-21-1 Lab ID: BMI10020301-05A Date Sampled 02/02/10 09:59	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 12:05
Client ID: <b>DUPE-1-1Q10</b> Lab ID: BMI10020301-06A Date Sampled 02/02/10 00:00	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 12:11
Client ID: <b>EB-1-2/2/10</b> Lab ID: BMI10020301-07A Date Sampled 02/02/10 09:42	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 12:16

ND = Not Detected

Roger Scholl Kandy Soulmer

Walter Hirkory

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2/16/10 Report Date

report Date



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# **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

San Diego, CA 92110 Job: G005862/JPL C

G005862/JPL Groundwater Monitoring

# Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated		
	Parameter	Estimated	Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID: MW-21-5 Lab ID: BMI10020301-01A Date Received: 02/03/10 Date Sampled: 02/02/10 08:05	*** None Found ***	ND	2.0 μg/L	02/04/10 14:07	02/04/10 14:07
Client ID : MW-21-4 Lab ID : BMI10020301-02A Date Received : 02/03/10 Date Sampled : 02/02/10 08:28	* * * None Found * * *	ND	2.0 μg/L	02/04/10 14:30	02/04/10 14:30
Client ID: MW-21-3 Lab ID: BMI10020301-03A Date Received: 02/03/10 Date Sampled: 02/02/10 08:56	*** None Found ***	ND	2.0 μg/L	02/04/10 14:52	02/04/10 14:52
Client ID: MW-21-2 Lab ID: BMI10020301-04A Date Received: 02/03/10 Date Sampled: 02/02/10 09:24	*** None Found ***	ND	2.0 µg/L	02/04/10 15:14	02/04/10 15:14
Client ID : MW-21-1 Lab ID : BMI10020301-05A Date Received : 02/03/10 Date Sampled : 02/02/10 09:59	*** None Found ***	ND	2.0 μg/L	02/04/10 15:36	02/04/10 15:36
Client ID : DUPE-1-1Q10 Lab ID : BMI10020301-06A Date Received : 02/03/10 Date Sampled : 02/02/10 00:00	*** None Found ***	ND	2.0 μg/L	02/04/10 15:58	02/04/10 15:58
Client ID : EB-1-2/2/10 Lab ID : BMI10020301-07A Date Received : 02/03/10 Date Sampled : 02/02/10 09:42	Tertiary Butyl Alcohol (TBA)	51 Q	10 μg/L	02/04/10 13:45	02/04/10 13:45
Client ID: TB-1-2/2/10 Lab ID: BMI10020301-08A Date Received: 02/03/10 Date Sampled: 02/02/10 00:00	*** None Found ***	ND	2.0 μg/L	02/04/10 13:23	02/04/10 13:23



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Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

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2/16/10

Report Date

-



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** Phone: (818) 393-2808

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020301-01A Client I.D. Number: MW-21-5

Sampled: 02/02/10 08:05 Received: 02/03/10

Extracted: 02/04/10 14:07

Analyzed: 02/04/10 14:07

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	µg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND .	0.50	μg/L
15	Bromochioromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	3.5	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	108	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	. 107	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	89	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L					
33	Dibromochloromethane	ND	0.50	μg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

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μg/L

1.0

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2/16/10 Report Date



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#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** Phone: (818) 393-2808

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020301-02A Client I.D. Number: MW-21-4

Sampled: 02/02/10 08:28

Received: 02/03/10 Extracted: 02/04/10 14:30

Analyzed: 02/04/10 14:30

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	6.5	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	109	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	105	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	92	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L					
33	Dibromochloromethane	ND	0.50	μg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

J = Estimated: The analyte was positively identified; the quantitation is an estimation.

ND

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μg/L

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2/16/10 **Report Date** 



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave

Fax:

David Conner Phone: (818) 393-2808 (614) 458-6641

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Sampled: 02/02/10 08:56

Received: 02/03/10

Extracted: 02/04/10 14:52 Analyzed: 02/04/10 14:52

Alpha Analytical Number: BMI10020301-03A

# Client I.D. Number: MW-21-3

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	1.0	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	2.2	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	1.4	0.50	μg/L	60	1,2,4-Trichlorobenzene	. ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	109	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	107	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	92	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L				. ,	
33	Dibromochloromethane	ND	0.50	μg/L					
	1000		11.7.2	, -					

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

ND

77

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/16/10 **Report Date** 



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

Client I.D. Number: MW-21-2

**David Conner** Phone: (818) 393-2808

San Diego, CA 92110

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020301-04A

Sampled: 02/02/10 09:24

Received: 02/03/10

Extracted: 02/04/10 15:14 Analyzed: 02/04/10 15:14

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration Rep		eporting Limit	
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L	
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L	
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L	
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L	
5	Bromomethane	ND	1.0	μg/L	40	Bromoform	ND	0.50	μg/L	
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L	
7	1,1-Dichloroethene	ND	0.50	µg/L	42	o-Xylene	ND	0.50	μg/L	
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L	
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L	
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L	
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L	
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L	
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L	
14	cis-1,2-Dichloroethene	0.57	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L	
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L	
16	Chloroform	0.60	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L	
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L	
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L	
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L	
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L	
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L	
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L	
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L	
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L	
25	Trichloroethene	0.61	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L	
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L	
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L	
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L	
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	111	(70-130)	%REC	
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	107	(70-130)	%REC	
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	91	(70-130)	%REC	
32	1,3-Dichloropropane	ND	0.50	μg/L						
33	Dibromochloromethane	ND	0.50	ug/l						

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

ND

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μg/L

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2/16/10

Report Date



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Client I.D. Number: MW-21-1

**David Conner** Attn:

Phone: (818) 393-2808 Fax: (614) 458-6641

Job: G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020301-05A

Sampled: 02/02/10 09:59

Received: 02/03/10

Extracted: 02/04/10 15:36 Analyzed: 02/04/10 15:36

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	1.0	µg/L	40	Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND	0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	2.8	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	111	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	110	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	94	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L			•	•	
33	Dibromochloromethane	ND	0.50	μg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

34

Roger Scholl

ND

ND

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μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

: G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020301-06A

Client I.D. Number: DUPE-1-1Q10

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/02/10 00:00

Received: 02/03/10

Extracted: 02/04/10 15:58 Analyzed: 02/04/10 15:58

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	1.4	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	110	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	107	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	90	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L					
33	Dibromochloromethane	ND	0.50	μg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Saulur

ND

Dalter Hirkon

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1.0

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/16/10 Report Date



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020301-07A

Client I.D. Number: EB-1-2/2/10

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/02/10 09:42

Received: 02/03/10

Extracted: 02/04/10 13:45 Analyzed: 02/04/10 13:45

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	µg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L.	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	111	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	108	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	92	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L				. ,	
33	Dibromochloromethane	ND	0.50	µg/L					
		1							

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

34

1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Sulm Walter 4

ND

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1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/16/10

Report Date



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

Attn:

David Conner

San Diego, CA 92110

Phone: (818) 393-2808

G005862/JPL Groundwater Monitoring

Fax:

(614) 458-6641

Alpha Analytical Number: BMI10020301-08A

Sampled: 02/02/10 00:00

Client I.D. Number: TB-1-2/2/10

Received: 02/03/10

Extracted: 02/04/10 13:23

Analyzed: 02/04/10 13:23

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0,50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	· ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND -	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	109	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	109	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	92	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L					
33	Dibromochloromethane	ND	0.50	μg/L					

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

ND

ND

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/16/10 Report Date



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# **VOC Sample Preservation Report**

Work Order: BMI10020301 Job: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН
10020301-01A	MW-21-5	Aqueous	2
10020301-02A	MW-21-4	Aqueous	2
10020301-03A	MW-21-3	Aqueous	2
10020301-04A	MW-21-2	Aqueous	2
10020301-05A	MW-21-1	Aqueous	2
10020301-06A	DUPE-1-1Q10	Aqueous	2
10020301-07A	EB-1-2/2/10	Aqueous	2
10020301-08A	TB-1-2/2/10	Aqueous	2

2/16/10



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<b>Date:</b> 16-Feb-10		(	QC S	ummaı	y Repor	t				<b>Work Orde</b> 10020301	
Method Blank File ID: 14	K		Type: I		est Code: El		hod 314.0	Analysis D	ate: 0	02/04/2010 12:56	
Sample ID:	MB-23505	Units : µg/L		Run ID: IC	3_100204/	4		Prep Date	: 0	02/04/2010 11:56	
Analyte		Result	PQL	SpkVa	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Perchlorate		ND		1							
Laboratory F	ortified Blank		Туре: <b>І</b>		est Code: El		hod 314.0	Analysis D	)ate: 0	02/04/2010 13:14	
Sample ID:	LFB-23505	Units : µg/L		_	3 100204/			Prep Date		02/04/2010 11:56	
Analyte		Result	PQL				LCL(ME)	•		al %RPD(Limit)	Qual
Perchlorate		23.7	:	2 25	j	95	85	115			
Sample Matri	x Spike	-	Type: L	_FM 7	est Code: El	PA Met	hod 314.0				
File ID: <b>19</b>				E	Batch ID: 235	05		Analysis D	ate: (	02/11/2010 15:36	
Sample ID:	10020402-02ALFM	Units : µg/L		Run ID: IC	C_3_100204 <i>/</i>	4		Prep Date	: (	02/04/2010 11:56	
Analyte		Result	PQL	SpkVa	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPI	)RefVa	al %RPD(Limit)	Qual
Perchlorate		29.2		2 25	3.863	101	80	120			
Sample Matri	x Spike Duplicate		Type: I	FMD 7	est Code: El	PA Met	hod 314.0				
File ID: 20	•			E	Batch ID: 235	05		Analysis D	ate: (	02/11/2010 15:54	
Sample ID:	10020402-02ALFMD	Units : µg/L		Run ID: I	C_3_100204/	4		Prep Date	: (	02/04/2010 11:56	
Analyte		Result	PQL				LCL(ME)	UCL(ME) RP	)RefVa	al %RPD(Limit)	Qual
Perchlorate		29.5	:	2 25	3.863	103	80	120	29.18	1.1(15)	

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 15-Feb-10		QC S	ummar	y Repor	t				Order: 20301
Method Blank File ID: 020410.B\509MB.D\		Type N		est Code: El		thod 200.8	Analysis Da	ate: 02/05/2010 10	0:50
Sample ID: MB-22509	Units : mg/L		Run ID: IC	P/MS_1002	05B		Prep Date:	02/04/2010 13	3:36
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDF	RefVal %RPD(Lim	it) Qual
Chromium (Cr)	ND	0.005	5						
Laboratory Control Spike File ID: 020410.B\590L1.D\		Type L		est Code: El		thod 200.8	Analysis Da	ate: <b>02/05/2010</b> 10	0:55
Sample ID: LCS-22509	Units: mg/L		Run ID: IC	P/MS_1002	05B		Prep Date:	02/04/2010 13	3:36
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDF	RefVal %RPD(Lim	it) Qual
Chromium (Cr)	0.0501	0.005	0.05		100	80	120		
Sample Matrix Spike File ID: 020410.B\509MS.D\		Type N	-	est Code: El		thod 200.8	Analysis Da	ate: <b>02/05/2010</b> 11	1:29
Sample ID: 10020301-02AMS	Units : mg/L		Run ID: IC	P/MS_1002	05B		Prep Date:	02/04/2010 13	3:36
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDF	RefVal %RPD(Lim	it) Qual
Chromium (Cr)	0.0533	0.005	0.05	0	107	80	120		
Sample Matrix Spike Duplicate File ID: 020410.B\509MSD.D\		Type N		est Code: El atch ID: 235		thod 200.8	Analysis Da	ate: <b>02/05/2010</b> 11	1:35
Sample ID: 10020301-02AMSD	Units : mg/L		Run ID: IC	P/MS_1002	05B		Prep Date:	02/04/2010 13	3:36
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDF	RefVal %RPD(Lim	it) Qual
Chromium (Cr)	0.0536	0.005	0.05	0	107	80	120 0.0	05334 0.4(20)	)

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 12-Feb-10	(	QC Sum	mary Report		Work Order: 10020301
Method Blank	· · · · · · · · · · · · · · · · · · ·	Type MBLK	Test Code: EPA Method S	W8260B	
File ID: 10020407.D			Batch ID: MS15W0204M	Analysis Date: 0	2/04/2010 10:25
Sample ID: MBLK MS15W0204M	Units : µg/L		ID: MSD_15_100204B	1	2/04/2010 10:25
Analyte	Result	PQL S	okVal SpkRefVal %REC LCL(i	ME) UCL(ME) RPDRefVa	l %RPD(Limit) Qua
Dichlorodifluoromethane	ND	0.5			
Chloromethane	ND	1			
Vinyl chloride	ND	0.5			•
Chloroethane	ND	0.5			
Bromomethane Trichlorofluoromethane	ND ND	1 0.5			
1,1-Dichloroethene	ND ND	0.5			
Dichloromethane	ND	1			
Freon-113	ND	0.5			
trans-1,2-Dichloroethene	ND	0.5			
Methyl tert-butyl ether (MTBE)	ND	0.5			
1,1-Dichloroethane	ND	0.5			
2-Butanone (MEK) cis-1,2-Dichloroethene	ND ND	10 0.5			
Bromochloromethane	ND	0.5			
Chloroform	ND	0.5			
2,2-Dichloropropane	ND	0.5			
1,2-Dichloroethane	ND	0.5			
1,1,1-Trichloroethane 1,1-Dichloropropene	ND ND	0.5			
Carbon tetrachloride	ND ND	0.5 0.5			
Benzene	ND	0.5			
Dibromomethane	ND	0.5			
1,2-Dichloropropane	ND	0.5			
Trichloroethene	ND	0.5			
Bromodichloromethane	ND	0.5			
4-Methyl-2-pentanone (MIBK) cis-1,3-Dichloropropene	ND ND	2.5 0.5			
trans-1,3-Dichloropropene	ND	0.5			
1,1,2-Trichloroethane	ND	0.5			
Toluene	ND	0.5			
1,3-Dichloropropane	ND	0.5			
Dibromochloromethane 1,2-Dibromoethane (EDB)	ND ND	0.5			
Tetrachloroethene	ND ND	1 0.5			
1,1,1,2-Tetrachloroethane	ND	0.5			
Chlorobenzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	0.5			
Bromoform	ND	0.5			
Styrene o-Xylene	ND ND	0.5 0.5			
1,1,2,2-Tetrachloroethane	ND	0.5			
1,2,3-Trichloropropane	ND	1			
Isopropylbenzene	ND	0.5			
Bromobenzene	ND	0.5			
n-Propylbenzene	ND ND	0.5			
4-Chlorotoluene 2-Chlorotoluene	ND ND	0.5 0.5			
1,3,5-Trimethylbenzene	ND	0.5			
tert-Butylbenzene	ND	0.5			
1,2,4-Trimethylbenzene	ND	0.5			
sec-Butylbenzene	ND	0.5			
1,3-Dichlorobenzene 1,4-Dichlorobenzene	ND ND	0.5 0.5			
4-Isopropyltoluene	ND ND	0.5			
1,2-Dichlorobenzene	ND	0.5			
n-Butylbenzene	ND	0.5			
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5			
1,2,4-Trichlorobenzene	ND	1			
Naphthalene Hexachlorobutadiene	ND ND	1 1			
1,2,3-Trichlorobenzene	ND ND	1			
Surr: 1,2-Dichloroethane-d4	11.1	•	10 111 70		
Surr: Toluene-d8	10.7		10 107 70	130	



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Work Order:

Date: QC Summary Report 12-Feb-10 8.84 Surr: 4-Bromofluorobenzene Test Code: EPA Method SW8260B Type LCS **Laboratory Control Spike** Analysis Date: 02/04/2010 09:27 File ID: 10020405.D Batch ID: MS15W0204M Sample ID: LCS MS15W0204M Units: µg/L Run ID: MSD\_15\_100204B Prep Date: 02/04/2010 09:27 SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Analyte Result **PQL** Dichlorodifluoromethane 10.2 Chloromethane 8.78 Vinyl chloride 12.1 Chloroethane 11.4 Bromomethane 7.61 Trichlorofluoromethane 10.9 1,1-Dichloroethene 10.9 Dichloromethane 10.6 trans-1.2-Dichloroethene Methyl tert-butyl ether (MTBE) 0.5 12.3 1,1-Dichloroethane 10.4 cis-1,2-Dichloroethene 11.8 Bromochloromethane 12.5 Chloroform 10.1 2,2-Dichloropropane 11.5 1,2-Dichloroethane 11.8 1.1.1-Trichloroethane 11.5 1.1-Dichloropropene 11.2 Carbon tetrachloride 11.9 Benzene 0.5 10.5 Dibromomethane 12.5 1,2-Dichloropropane 11.1 Trichloroethene 11.5 Bromodichloromethane 12.4 cis-1.3-Dichloropropene 10.8 trans-1,3-Dichloropropene 11.1 1,1,2-Trichloroethane 11.8 Toluene 10.3 0.5 1,3-Dichloropropane Dibromochloromethane 12.1 1,2-Dibromoethane (EDB) 25.5 Tetrachloroethene 11.6 1.1.1.2-Tetrachloroethane 11.9 Chlorobenzene 10.7 0.5 Ethylbenzene 10.4 m,p-Xylene 0.5 11.1 Bromoform 12.2 Styrene o-Xylene 11.1 0.5 1,1,2,2-Tetrachloroethane 11.5 1,2,3-Trichloropropane 22.9 99.8 Isopropylbenzene 9.98 Bromobenzene n-Propylbenzene 9.83 4-Chlorotoluene 10.4 2-Chlorotoluene 9.88 1,3,5-Trimethylbenzene 9.7 tert-Butylbenzene 9.78 1,2,4-Trimethylbenzene 9.89 sec-Butylbenzene 10.1 1.3-Dichlorobenzene 10.3 1,4-Dichlorobenzene 9.84 4-Isopropyltoluene 9.91 1,2-Dichlorobenzene 9.78 n-Butylbenzene 9.79 1,2-Dibromo-3-chloropropane (DBCP) 2 1,2,4-Trichlorobenzene 11.4 Naphthalene 12.2 Hexachlorobutadiene 19.8 1,2,3-Trichlorobenzene 11.8 Surr: 1,2-Dichloroethane-d4 10.9 Surr: Toluene-d8 10.2 Surr: 4-Bromofluorobenzene 9.42



Date:

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Work Order:

QC Summary Report 12-Feb-10 Sample Matrix Spike Type MS Test Code: EPA Method SW8260B File ID: 10020410.D Analysis Date: 02/04/2010 11:31 Batch ID: MS15W0204M Sample ID: 10020301-02AMS Prep Date: 02/04/2010 11:31 Units: µg/L Run ID: MSD\_15\_100204B SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Analyte Result **PQL** Qual Dichlorodifluoromethane 38.3 2.5 Chloromethane 38.6 Vinyl chloride 54.4 2.5 Chloroethane 47.4 2.5 Bromomethane 22.8 Trichlorofluoromethane 49.9 2.5 99.8 1.1-Dichloroethene 2.5 Dichloromethane 49.8 99.6 trans-1,2-Dichloroethene 2.5 99.9 Methyl tert-butyl ether (MTBE) 57.2 1.3 1,1-Dichloroethane 47.6 2.5 cis-1,2-Dichloroethene 54.1 2.5 Bromochloromethane 2.5 Chloroform 53.1 2.5 6.53 2,2-Dichloropropane 51.8 2.5 1,2-Dichloroethane 2.5 1,1,1-Trichloroethane 2.5 1,1-Dichloropropene 50.8 2.5 Carbon tetrachloride 52.7 2.5 Benzene 47.3 1.3 Dibromomethane 2.5 1,2-Dichloropropane 51.2 2.5 Trichloroethene 51.4 2.5 Bromodichloromethane 56.8 2.5 cis-1,3-Dichloropropene 48.9 2.5 trans-1,3-Dichloropropene 52.6 2.5 1,1,2-Trichloroethane 54.3 2.5 Toluene 46.7 1.3 1.3-Dichloropropane 55.6 2.5 Dibromochloromethane 56.9 2.5 1,2-Dibromoethane (EDB) Tetrachloroethene 54.2 2.5 1.65 1,1,1,2-Tetrachloroethane 2.5 Chlorobenzene 48.9 2.5 Ethylbenzene 47.2 1.3 m,p-Xylene 50.5 1.3 Bromoform 2.5 56.4 Styrene 54.4 2.5 o-Xylene 50.6 1.3 1,1,2,2-Tetrachloroethane 50.4 2.5 1,2,3-Trichloropropane Isopropylbenzene 44.2 2.5 Bromobenzene 46.6 2.5 n-Propylbenzene 43.2 2.5 4-Chlorotoluene 45.4 2.5 2-Chlorotoluene 44.2 2.5 1,3,5-Trimethylbenzene 2.5 tert-Butylbenzene 43.3 2.5 1,2,4-Trimethylbenzene 43.5 2.5 sec-Butylbenzene 44.7 2.5 1,3-Dichlorobenzene 45.5 2.5 1.4-Dichlorobenzene 43.4 2.5 4-Isopropyltoluene 43.4 2.5 1,2-Dichlorobenzene 43.8 2.5 n-Butvlbenzene 2.5 42.3 1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene 48.6 Naphthalene 51.6 Hexachlorobutadiene 86.6 1,2,3-Trichlorobenzene 51.5 Surr: 1,2-Dichloroethane-d4 52.9 Surr: Toluene-d8 51.4 Surr: 4-Bromofluorobenzene 



1,4-Dichlorobenzene

1,2-Dichlorobenzene

1,2,4-Trichlorobenzene

Hexachlorobutadiene

Surr: Toluene-d8

1.2.3-Trichlorobenzene

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

1,2-Dibromo-3-chloropropane (DBCP)

4-Isopropyltoluene

n-Butylbenzene

Naphthalene

# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order: Date: QC Summary Report 10020301 12-Feb-10 Test Code: EPA Method SW8260B Type MSD Sample Matrix Spike Duplicate File ID: 10020411.D Batch ID: MS15W0204M Analysis Date: 02/04/2010 11:54 02/04/2010 11:54 Sample ID: 10020301-02AMSD Units: µg/L Run ID: MSD\_15\_100204B Prep Date: SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Analyte **PQL** Qual Result Dichlorodifluoromethane 79 167 38.32 3.6(20)39.7 2.5 50 13 145 38.61 3.7(20)Chloromethane 37.2 10 50 0 74 28 5.6(20) Vinyl chloride 57.5 2.5 50 0 115 43 134 54.38 Chloroethane 50 n 102 39 154 47.4 6.9(20)50.8 2.5 Bromomethane 50 19 176 22.81 36.0(20) R5 32.8 10 0 66 Trichlorofluoromethane 2.5 50 0 103 34 160 49.88 2.9(20) 51.3 1,1-Dichloroethene 60 130 50 3.4(20)51.7 2.5 50 0 103 49.81 1.5(20) Dichloromethane 68 130 50.6 10 50 0 101 trans-1.2-Dichloroethene 2.5 63 130 49.95 4.8(20)52.4 50 ٥ 105 3.6(20) Methyl tert-butyl ether (MTBE) 56 141 57.19 59.3 1.3 50 119 3.7(20) 1.1-Dichloroethane 61 130 47.57 49.4 2.5 50 0 99 cis-1,2-Dichloroethene 54.09 4.6(20)56.6 2.5 50 0 113 70 130 Bromochloromethane 60.6 2.5 50 0 121 70 130 58.04 4.3(20)Chloroform 130 53.08 3.3(20)97 67 54.9 2.5 50 6.53 2,2-Dichloropropane 152 51.82 2.4(20) 53.1 2.5 50 106 30 3.9(20) 1,2-Dichloroethane 60 135 53.99 56.2 2.5 50 0 112 1.1.1-Trichloroethane 53.2 2.5 50 n 106 59 137 52 2.2(20)1.1-Dichloropropene 53.3 2.5 50 107 63 130 50.77 4.9(20)5.1(20) Carbon tetrachloride 147 52.74 55.5 2.5 50 50 0 111 130 47.32 4.5(20)Benzene 49.5 1.3 50 0 99 67 Dibromomethane 60.4 2.5 50 0 121 69 133 58.02 4.0(20)1,2-Dichloropropane 2.5 50 0 69 130 51.19 4.6(20)53.6 107 Trichloroethene 69 130 51.43 3.7(20)53.4 2.5 50 0 107 Bromodichloromethane 66 134 56.8 3.8(20) 59 2.5 50 0 118 4.6(20)cis-1.3-Dichloropropene 102 63 130 48.94 512 2.5 50 n 2.3(20)trans-1,3-Dichloropropene 2.5 108 66 131 52.6 53.8 50 3.2(20)1,1,2-Trichloroethane 68 130 54 26 56 2.5 50 0 112 4.3(20)Toluene 48.8 1.3 50 0 98 66 130 46.73 1,3-Dichloropropane 58.4 2.5 50 0 117 70 130 55.61 4.9(20)Dibromochloromethane 70 130 56.94 5.1(20) 59.9 2.5 120 50 n 1,2-Dibromoethane (EDB) 125 5 100 0 125 70 130 118.3 5.6(20) Tetrachloroethene 2.5 1.65 61 134 54 22 4.4(20)56.7 50 110 1.1.1.2-Tetrachloroethane 57.6 50 115 70 130 54.03 6.3(20)2.5 0 48.94 4.4(20)Chlorobenzene 2.5 50 102 70 130 51.1 Ethylbenzene 68 130 47.2 4.0(20)50 98 49.1 1.3 n m,p-Xylene 53 1.3 50 0 106 64 130 50.51 4.7(20)7.9(20)64 138 56.41 Bromoform 61 2.5 50 0 122 6.0(20)2.5 69 130 54.41 Styrene 57.8 50 0 116 o-Xylene 50 106 70 130 50.55 4.8(20)53 1.3 1,1,2,2-Tetrachloroethane 53.6 2.5 50 0 107 65 131 50.42 6.2(20)5.4(20) 1.2.3-Trichloropropane 10 100 108 70 130 102.1 108 0 Isopropylbenzene 46.8 2.5 94 64 138 44.21 5.7(20) 50 0 Bromobenzene 46.59 4.0(20)97 70 130 48.5 2.5 50 0 n-Propylbenzene 66 132 43.23 5.5(20)45.7 2.5 50 0 91 45.38 5.0(20) 4-Chlorotoluene 70 130 47.7 2.5 50 0 95 2-Chlorotoluene 93 70 130 44.18 5.2(20) 46.5 2.5 50 0 4.5(20)1,3,5-Trimethylbenzene 2.5 50 90 66 136 43 45 0 137 43.31 6.0(20)tert-Butylbenzene 92 65 46 2.5 50 0 1,2,4-Trimethylbenzene 65 137 43.47 4.6(20)45.5 2.5 50 0 91 44.67 5.6(20) sec-Butylbenzene 66 134 47.2 2.5 50 0 94 5.2(20)1,3-Dichlorobenzene 48 2.5 50 0 96 70 130 45.54

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10.6(20)



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:** 12-Feb-10

# QC Summary Report

Work Order: 10020301

#### **Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag. R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

# Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

TEL: (775) 355-1044 FAX: (775) 355-0406

Attention Phone Number EMail Address

Report AttentionPhone NumberEMail AddressDavid Conner(818) 393-2808 xconnerd@battelle.orgShane Walton(614) 424-4117 xwaltons@battelle.orgBetsy Cutie(614) 424-4899 xcutiee@batelle.org

EDD Required: Yes

Report Due By: 5:00 PM On: 17-Feb-2010

WorkOrder: BMIS10020301

Page: 1 of 1

Sampled by : Client

Cooler Temp Sample

 emp
 Samples Received
 Date Printed

 C
 03-Feb-2010
 03-Feb-2010

G005862/JPL Groundwater Monitoring 03-Feb-2010

Client's COC #: 24131

. qo

PO: 218013

San Diego, CA 92110

3990 Old Town Ave Suite C-205 Battelle Memorial Institute

QC Level: DS4

= DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates

Sample ID BMI10020301-08A TB-1-2/2/10 BMI10020301-07A BMI10020301-06A DUPE-1-1Q10 BMI10020301-05A MW-21-1 BMI10020301-04A MW-21-2 BMI10020301-03A MW-21-3 BMI10020301-02A MW-21-4 BMI10020301-01A MW-21-5 EB-1-2/2/10 Sample ID AQ 02/02/10 08:05 à ğ å Matrix Date Š Š g ð 02/02/10 09:24 02/02/10 00:00 02/02/10 09:42 02/02/10 08:56 02/02/10 08:28 02/02/10 09:59 Collection No. of Bottles 02/02/10 00:00 Alpha Sub G S G S S G 0 0 0 0 0 0 0 0 TAT 6 6 6 6 6 6 5 6 Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate 314\_W METALS\_D VOC\_TIC\_ ζ Ç Ç Ç Ç Ç Ç VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 VOC by 524 VOC by 524
Criteria Criteria VOC\_W Requested Tests Reno Trip Blank 8/25/09 Sample Remarks Level IV QC

Comments: Security seals intact. Frozen ice. Temp Blank #8404 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (LE: MS/MSD).

Logged in by:	
Chabath (Idcox	Signature
Elizabeth Hodox	Print Name
Alpha Analytical, Inc.	Company
2.3.10 1045	Date/Time

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

# Address 505 City, State, Zip \_ Billing Information: Name <u>GをMAい ToMpidws</u> Cocumbos, 10126 AVE

Phone Number \_

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DAVIS

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× 43201		Sparks, Nevada 89431-5778 Phone (775) 355-1044 Fax (775) 355-0406	1044 1044 16			An	Analyses Re	Required	
(-25.7)	P.O. # 2 18013 EMail Address	Job #	0 0	6005862	$\downarrow \downarrow$	(2) (20,8) (4,0)	40)		Required QC Level?
$\perp$	(619) 721-7311	Fax#			<u> </u>	G (2		<u></u>	EDD / EDF? YES NO
	Report Attention			Total and type of		Tel.	_	_	Global ID #
( Use Only )	Sample Description	TAT	T Field Filtered	** See below	Yo	Io.		_	REMARKS
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# ADDITIONAL INSTRUCTIONS:

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of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis \*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\*: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 17-Feb-10
David Conner

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110 (818) 393-2808

ve Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

BMI10020402

Cooler Temp:

4°C

Alpha's Sample ID	Client's Sample ID	Matrix
10020402-01A	MW-14-5	Aqueous
10020402-02A	MW-14-4	Aqueous
10020402-03A	MW-14-3	Aqueous
10020402-04A	MW-14-2	Aqueous
10020402-05A	MW-14-1	Aqueous
10020402-06A	EB-2-2/3/10	Aqueous
10020402-07A	TB-2-2/3/10	Aqueous

#### **Manually Integrated Analytes**

Alpha's Sample ID	Test Reference	<u>Analyte</u>	_
10020402-02A	EPA Method 314.0	Perchlorate	
10020402-03A	EPA Method 314.0	Perchlorate	
10020402-04A	EPA Method 314.0	Perchlorate	
10020402-05A	EPA Method 314.0	Perchlorate	

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Saulner

Walter Hinkmor



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

# **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn:

**David Conner** 

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/04/10

Job:

G005862/JPL Groundwater Monitoring

# Perchlorate by Ion Chromatography

EPA Method 314.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-14-5 Lab ID: BMI10020402-01A Date Sampled 02/03/10 08:00	Perchlorate	ND	1.00 µg/L	02/04/10 11:56	02/11/10 14:59
Client ID: MW-14-4 Lab ID: BMI10020402-02A Date Sampled 02/03/10 08:31	Perchlorate	3.86	1.00 µg/L	02/04/10 11:56	02/11/10 15:18
Client ID: MW-14-3 Lab ID: BMI10020402-03A Date Sampled 02/03/10 08:59	Perchlorate	6.58	1.00 μg/L	02/04/10 11:56	02/11/10 16:13
Client ID: MW-14-2 Lab ID: BMI10020402-04A Date Sampled 02/03/10 09:27	Perchlorate	3.88	1.00 µg/L	02/04/10 11:56	02/11/10 16:31
Client ID: MW-14-1 Lab ID: BMI10020402-05A Date Sampled 02/03/10 09:59	Perchlorate	2.97	1.00 µg/L	02/04/10 11:56	02/11/10 16:50
Client ID: <b>EB-2-2/3/10</b> Lab ID: BMI10020402-06A Date Sampled 02/03/10 09:46	Perchlorate	ND	1.00 µg/L	02/04/10 11:56	02/11/10 17:08

ND = Not Detected

Roger Scholl

Kandy Saulner

Walter Hinkows

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/17/10

Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

# **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: Da

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/04/10

Job:

G005862/JPL Groundwater Monitoring

Metals by ICPMS

EPA Method 200.8

	Parameter	Concentration	Reporting	Date	Date
			Limit	Extracted	Analyzed
Client ID: MW-14-3 Lab ID: BMI10020402-03A Date Sampled 02/03/10 08:59	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 12:22
Client ID: MW-14-2 Lab ID: BMI10020402-04A Date Sampled 02/03/10 09:27	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 12:28
Client ID: MW-14-1 Lab ID: BMI10020402-05A Date Sampled 02/03/10 09:59	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 12:33
Client ID: <b>EB-2-2/3/10</b> Lab ID: BMI10020402-06A Date Sampled 02/03/10 09:46	Chromium (Cr)	ND	0.0050 mg/L	02/04/10 13:36	02/05/10 12:39

ND = Not Detected

Roger Scholl

Kandy Saulner

Walter Hirihun

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

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Report Date



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# **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

San Diego, CA 92110 Job: G005862/JPL G

G005862/JPL Groundwater Monitoring

# Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated	
	Parameter	Estimated	Reporting	Date Date
		Concentration	Limit	Extracted Analyzed
Client ID: MW-14-5 Lab ID: BMI10020402-01A Date Received: 02/04/10 Date Sampled: 02/03/10 08:00	Sulfur dioxide	2.1	2.0 μg/L	02/05/10 13:14 02/05/10 13:14
Client ID: MW-14-4 Lab ID: BMI10020402-02A Date Received: 02/04/10 Date Sampled: 02/03/10 08:31	*** None Found ***	ND	2.0 μg/L	02/05/10 13:36 02/05/10 13:36
Client ID: MW-14-3 Lab ID: BMI10020402-03A Date Received: 02/04/10 Date Sampled: 02/03/10 08:59	*** None Found ***	ND	2.0 μg/L	02/08/10 18:29 02/08/10 18:29
Client ID: MW-14-2 Lab ID: BMI10020402-04A Date Received: 02/04/10 Date Sampled: 02/03/10 09:27	*** None Found ***	ND	2.0 μg/L	02/08/10 18:52 02/08/10 18:52
Client ID: MW-14-1 Lab ID: BMI10020402-05A Date Received: 02/04/10 Date Sampled: 02/03/10 09:59	*** None Found ***	ND	2.0 μg/L	02/05/10 14:43 02/05/10 14:43
Client ID: EB-2-2/3/10 Lab ID: BMI10020402-06A Date Received: 02/04/10 Date Sampled: 02/03/10 09:46	Tertiary Butyl Alcohol (TBA) 2-Methyl-1-propene	55 2.1	10 μg/L 2.0 μg/L	02/05/10 12:52 02/05/10 12:52 02/05/10 12:52 02/05/10 12:52
Client ID: TB-2-2/3/10 Lab ID: BM110020402-07A Date Received: 02/04/10 Date Sampled: 02/03/10 00:00	* * * None Found * * *	ND	2.0 μg/L	02/05/10 12:30 02/05/10 12:30



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Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger Scholl Kandy Salm Walter

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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2/17/10

Report Date



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#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave

Client I.D. Number: MW-14-5

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020402-01A

Attn:

David Conner Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/03/10 08:00

Received: 02/04/10

Extracted: 02/05/10 13:14 Analyzed: 02/05/10 13:14

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butvlbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	ug/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	. ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	NÐ		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1.2.4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	117	(70-120)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	103	(85-120)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	89	(75-120)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			,	()	
33	Dibromochloromethane	ND		0.50	μg/L					
0.4	4.0.00	_			- <del></del>					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

Tetrachloroethene

ND = Not Detected

Roger Scholl Kandg Saulner

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date



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#### ANALYTICAL REPORT

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020402-02A

Client I.D. Number: MW-14-4

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/03/10 08:31

Received: 02/04/10

Extracted: 02/05/10 13:36 Analyzed: 02/05/10 13:36

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	ļ	Reporting I	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L.	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND ·	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	. ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	J	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	116	(70-120)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	106	(85-120)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	88	(75-120)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			•		

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

J=Estimated: The analyte was positively identified; the quanitation is an estimation.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

oger Scholl Kandy Soulur

Dalter Hirihun

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical. Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/17/10 Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave

Attn:

David Conner Phone: (818) 393-2808

San Diego, CA 92110

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020402-03A

Sampled: 02/03/10 08:59

Received: 02/04/10

Extracted: 02/08/10 18:29 Analyzed: 02/08/10 18:29

Client I.D. Number: MW-14-3

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting L	Reporting Limit	
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L	
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L	
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L	
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	NĐ	0.50	μg/L	
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	NĐ	0.50	μg/L	
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L	
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L	
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L	
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L	
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L	
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L	
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propvlbenzene	ND	0.50	μg/L	
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L	
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L	
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L	
16	Chloroform	0.51		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L	
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L	
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L	
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L	
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L	
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L	
22	Benzene	ND		0.50	µg/L	57	1.2-Dichlorobenzene	ND	0.50	μg/L	
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L	
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L	
25	Trichloroethene	1.9		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L	
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L	
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L	
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1.2.3-Trichlorobenzene	ND	1.0	μg/L	
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	92	(70-120)	%REC	
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(85-120)	%REC	
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	105	(75-120)		
32	1,3-Dichloropropane	ND		0.50	μg/L			1	, , , ,		
33	Dibromochloromethane	ND		0.50	μg/L						
		I									

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

0.74

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples. **Report Date** 



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#### ANALYTICAL REPORT

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110 Job: G005862/JPL

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020402-04A

Client I.D. Number: MW-14-2

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/03/10 09:27

Received: 02/04/10

Extracted: 02/08/10 18:52 Analyzed: 02/08/10 18:52

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1.1.1.2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND	Q	1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xvlene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1.1.2.2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	0.54		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	0.57		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyitoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	11		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	91	(70-120)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(85-120)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	105	(75-120)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			,	• •	

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur

Dalter Hirihum

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 



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#### ANALYTICAL REPORT

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020402-05A

Client I.D. Number: MW-14-1

Attn: **David Conner** Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/03/10 09:59

Received: 02/04/10

Extracted: 02/05/10 14:43 Analyzed: 02/05/10 14:43

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	4.9		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	120	(70-120)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	107	(85-120)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	89	(75-120)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

ND = Not Detected

35 Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110 Attn:

**David Conner** Phone: (818) 393-2808

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020402-06A

Client I.D. Number: EB-2-2/3/10

Sampled: 02/03/10 09:46

Received: 02/04/10

Extracted: 02/05/10 12:52 Analyzed: 02/05/10 12:52

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND	Q	1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m.p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xvlene	ND.	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1.3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1.2.3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	116	(70-120)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	107	(85-120)	
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	89	(75-120)	
32	1,3-Dichloropropane	ND		0.50	µg/L			,	()	
33	Dibromochloromethane	ND		0.50	µg/L					
2.4	1.2 Diberrate there (EDD)	1			1-0					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

35 Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

µg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/17/10

**Report Date** 



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

ob: G005862/JPL Grov

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020402-07A

Client I.D. Number: TB-2-2/3/10

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/03/10 00:00

Received: 02/04/10

Extracted: 02/05/10 12:30 Analyzed: 02/05/10 12:30

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	F	teporting	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m.p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	117	(70-120)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	106	(85-120)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	88	(75-120)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			,	• •	

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulan

Walter Hinkow

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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2/17/10 Report Date



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### **VOC Sample Preservation Report**

Work Order: BMI10020402

Job:

G005862/JPL Groundwater Monitoring

			· · · · · · · · · · · · · · · · · · ·		
Alpha'	's Sample ID	Client's Sample ID	Matrix	рН	
1002	20402-01A	MW-14-5	Aqueous	2	
1002	20402-02A	MW-14-4	Aqueous	2	
1002	20402-03A	MW-14-3	Aqueous	2	
1002	20402-04A	MW-14-2	Aqueous	2	
1002	20402-05A	MW-14-1	Aqueous	2	
1002	20402-06A	EB-2-2/3/10	Aqueous	2	
1002	20402-07A	TB-2-2/3/10	Aqueous	2	
			•		

2/17/10



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<b>Date:</b> 17-Feb-10		(	QC S	umma	ry Repoi	t				Work O 10020	
Method Bla File ID: 14 Sample ID: Analyte	nk MB-23505	Units : µg/L	Type: N	Run ID: I	Test Code: E Batch ID: 235 C_3_100204	05 A		Prep D	ate:	02/04/2010 12: 02/04/2010 11:	56
Perchlorate		Result ND	PQL	Spkva 1	а Брккетуа	%REC	LCL(ME)	JCL(ME) F	KPDRei	Val %RPD(Limit	Qual
Laboratory File ID: 15	Fortified Blank		Type: <b>L</b>		Test Code: E Batch ID: 235		thod 314.0	Analys	is Date:	02/04/2010 13:	14
Sample ID: Analyte	LFB-23505	Units : <b>µg/L</b> Result	PQL		<b>C_3_100204</b> al SpkRefVal		C LCL(ME) (	Prep D JCL(ME) F		<b>02/04/2010 11:</b> Val %RPD(Limit	
Perchlorate		23.7	:	2 2	5	95	85	115			
Sample Mat File ID: 19 Sample ID: Analyte	rix Spike 10020402-02ALFM	Units : <b>µg/L</b> Result	Type: I	Run ID: I	Test Code: E Batch ID: 235 C_3_100204	05 A		Prep D	ate:	02/11/2010 15: 02/04/2010 11:	56
Perchlorate		29.2		2 2	·		80	120	NE DINEIN	Val %RPD(Limit)	Quai
	rix Spike Duplicate		Type: I	-FMD	Test Code: E Batch ID: 235 C 3 100204	PA Met				02/11/2010 15: 02/04/2010 11:	
Analyte		Result	PQL				LCL(ME)	•		/al %RPD(Limit)	-
Perchlorate		29.5		2 2	5 3.863	103	80	120	29.18	3 1.1(15)	

### Comments

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 15-Feb-10	(	QC S	ummar	y Repor	t			<b>Work Ordo</b> 10020402	
Method Blank File ID: 020410.B\509MB.D\		Туре і		est Code: EF atch ID: 2350		thod 200.8	Analysis Date	e: 02/05/2010 10:50	
Sample ID: MB-22509	Units : mg/L		Run ID: IC	P/MS_10020	)5B		Prep Date:	02/04/2010 13:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Chromium (Cr)	ND	0.00	5						
Laboratory Control Spike File ID: 020410.B\590L1.D\		Type I		est Code: EF		thod 200.8	Analysis Date	e: 02/05/2010 10:55	
Sample ID: LCS-22509	Units : mg/L		Run ID: IC	P/MS_10020	)5B		Prep Date:	02/04/2010 13:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Chromium (Cr)	0.0501	0.00	5 0.05		100	80	120		
Sample Matrix Spike		Type I	VIS T	est Code: El	A Met	thod 200.8	, ,		
File ID: <b>020410.B\509MS.D\</b>			В	atch ID: 2350	9K		Analysis Date	e: 02/05/2010 11:29	
Sample ID: 10020301-02AMS	Units : mg/L		Run ID: IC	P/MS_1002	05B		Prep Date:	02/04/2010 13:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Chromium (Cr)	0.0533	0.00	5 0.05	0	107	80	120		
Sample Matrix Spike Duplicate		Type I	MSD T	est Code: El	A Met	thod 200.8			
File ID: 020410.B\509MSD.D\			В	atch ID: <b>235</b> 0	)9K		Analysis Date	e: 02/05/2010 11:35	
Sample ID: 10020301-02AMSD	Units : mg/L		Run ID: IC	P/MS_1002	)5B		Prep Date:	02/04/2010 13:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Chromium (Cr)	0.0536	0.00	5 0.05	0	107	80	120 0.05	334 0.4(20)	<del></del>

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 15-Feb-10	(	QC Sum	mary Report			<b>Work Ordo</b> 10020402	
Method Blank		Type: MBLK	Test Code: EPA Meth	od SW8260E	3		
File ID: 10020507.D			Batch ID: MS15W020	5M	Analysis Date:	02/05/2010 10:38	
Sample ID: MBLK MS15W0205	M Units : μg/L	Run	ID: MSD_15_100205B		Prep Date:	02/05/2010 10:38	
Analyte	Result		okVal SpkRefVal %REC	LCL(ME) UC	L(ME) RPDRef	Val %RPD(Limit)	Qu
Dichlorodifluoromethane	ND	0.5				·	_
Chloromethane	ND	1					
Vinyl chloride	ND	0.5					
Chloroethane	ND	0.5					
Bromomethane	ND	1					
Trichlorofluoromethane	ND	0.5					
1,1-Dichloroethene	ND	0.5					
Dichloromethane Freon-113	ND ND	1					
trans-1,2-Dichloroethene	ND ND	0.5					
Methyl tert-butyl ether (MTBE)	ND ND	0.5 0.5					
1,1-Dichloroethane	ND ND	0.5					
2-Butanone (MEK)	ND	10					
cis-1,2-Dichloroethene	ND	0.5					
Bromochloromethane	ND	0.5					
Chloroform	ND	0.5					
2,2-Dichloropropane	ND	0.5					
1,2-Dichloroethane	ND	0.5					
1,1,1-Trichloroethane	ND	0.5					
1,1-Dichloropropene	ND	0.5					
Carbon tetrachloride	ND	0.5					
Benzene	ND	0.5					
Dibromomethane 1,2-Dichloropropane	ND ND	0.5					
Trichloroethene	ND ND	0.5 0.5					
Bromodichloromethane	ND ND	0.5					
4-Methyl-2-pentanone (MIBK)	ND	2.5					
cis-1,3-Dichloropropene	ND	0.5					
trans-1,3-Dichloropropene	ND	0.5					
1,1,2-Trichloroethane	ND	0.5					
Toluene	ND	0.5					
1,3-Dichloropropane	ND	0.5					
Dibromochloromethane	ND	0.5					
1,2-Dibromoethane (EDB)	ND	. 1					
Tetrachloroethene	ND	0.5					
1,1,1,2-Tetrachloroethane	ND	0.5					
Chlorobenzene Ethylbenzene	ND	0.5					
m,p-Xylene	ND ND	0.5					
Bromoform	ND ND	0.5 0 <i>.</i> 5					
Styrene	ND	0.5					
o-Xylene	ND	0.5					
1,1,2,2-Tetrachloroethane	ND	0.5					
1,2,3-Trichloropropane	ND	1					
Isopropylbenzene	ND	0.5					
Bromobenzene	ND	0.5					
n-Propylbenzene	ND	0.5					
4-Chlorotoluene	ND	0.5					
2-Chlorotoluene	ND	0.5					
1,3,5-Trimethylbenzene	ND	0.5					
tert-Butylbenzene	ND	0.5					
1,2,4-Trimethylbenzene	ND	0.5					
sec-Butylbenzene	ND	0.5					
1,3-Dichlorobenzene 1,4-Dichlorobenzene	ND	0.5					
4-Isopropyltoluene	ND ND	0.5					
1,2-Dichlorobenzene	ND ND	0.5 0.5					
n-Butylbenzene	ND ND	0.5 0.5					
1,2-Dibromo-3-chloropropane (DBC		0.5 2.5					
1,2,4-Trichlorobenzene	ND ND	2.5 1					
Naphthalene	ND	1					
Hexachlorobutadiene	ND	1					
1,2,3-Trichlorobenzene	ND	1					
Surr: 1,2-Dichloroethane-d4	11.3	•	10 113	70	130		
Surr: Toluene-d8	10.8		10 108		130		



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<b>Date:</b> 15-Feb-10	(	QC Sı	ımmary	Report			<b>Work Orde</b> 10020402	
Surr: 4-Bromofluorobenzene	9.04		10	90	70	130		
Laboratory Control Spike		Type: Lo	CS Te	st Code: EPA Met	nod SW8	260B		
File ID: 10020505.D		•		tch ID: MS15W020	5M	Analysis Date	e: 02/05/2010 09:40	
Sample ID: LCS MS15W0205M	Units : µg/L		Run ID: MS	D_15_100205B		Prep Date:	02/05/2010 09:40	
Analyte	Result	PQL	SpkVal	SpkRefVal %REC	LCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qual
Dichlorodifluoromethane	10	1	10	100	70	130		
Chloromethane Vinyl chloride	8.41	2		84	70	130		
Chloroethane	11.3 10.9	1 1	10 10	113 109	70 70	130 130		
Bromomethane	7.78	2		78	70	130		
Trichlorofluoromethane	10.7	1	10	107	70	130		
1,1-Dichloroethene Dichloromethane	10.6	1	10	106	70 70	130		
trans-1,2-Dichloroethene	10.3 10.9	2 1		103 109	70 70	130 130		
Methyl tert-butyl ether (MTBE)	12.1	0.5		121	70	130		
1,1-Dichloroethane	10.1	1		101	70	130		
cis-1,2-Dichloroethene	11.1	1	10	111	70	130		
Bromochloromethane Chloroform	12.5 10.1	1 1	10 10	125 101	70 70	130 130		
2,2-Dichloropropane	11.4	1	10	114	70	130		
1,2-Dichloroethane	11.7	1	10	117	70	130		
1,1,1-Trichloroethane	11.5	1	10	115	70	130		
1,1-Dichloropropene Carbon tetrachloride	10.9 12	1	10	109	70 70	130		
Benzene	10.1	1 0.5	10 10	120 101	70 70	130 130		
Dibromomethane	12.4	1		124	70	130		
1,2-Dichloropropane	10.8	1	10	108	70	130		
Trichloroethene Bromodichloromethane	11.3	1		113	70 70	130		
cis-1,3-Dichloropropene	12.1 10.8	1		121 108	70 70	130 130		
trans-1,3-Dichloropropene	11.2	1		112	70	130		
1,1,2-Trichloroethane	11.6	1	10	116	70	130		
Toluene	10.1	0.5		101	70	130		
1,3-Dichloropropane Dibromochloromethane	12.1 12.3	1		121 123	70 70	130 130		
1,2-Dibromoethane (EDB)	25.9	2		130	70 70	130		
Tetrachloroethene	11.4	1	10	114	70	130		
1,1,1,2-Tetrachloroethane	12.1	1	10	121	70	130		
Chlorobenzene Ethylbenzene	10.7	1		107	70 70	130		
m,p-Xylene	10.3 11	0.5 0.5		103 110	70 70	130 130		
Bromoform	12.6	1	10	126	70	130		
Styrene	11.9	1	10	119	70	130		
o-Xylene 1,1,2,2-Tetrachloroethane	11.1	0.5		111	70	130		
1,2,3-Trichloropropane	11.4 23.7	1 2	10 20	114 119	70 70	130 130		
Isopropylbenzene	9.7	1	10	97	70 70	130		
Bromobenzene	10.2	1	10	102	70	130		
n-Propylbenzene 4-Chlorotoluene	9.54	1	10	95	70	130		
2-Chlorotoluene	10.1 9.56	1 1	10 10	101 96	70 70	130 130		
1,3,5-Trimethylbenzene	9.41	1	10	94	70 70	130		•
tert-Butylbenzene	9.52	1	10	95	70	130		
1,2,4-Trimethylbenzene	9.53	1	10	95	70	130		
sec-Butylbenzene 1,3-Dichlorobenzene	9.83 10	1	10	98 100	70 70	130 130		
1,4-Dichlorobenzene	9.64	1	10 10	96	70 70	130		
4-Isopropyltoluene	9.51	1	10	95	70	130		
1,2-Dichlorobenzene	9.53	1	10	95	70	130		
n-Butylbenzene 1,2-Dibromo-3-chloropropane (DBCP)	9.36	1	10	94	70 70	130		
1,2,4-Trichlorobenzene	55.2 10.9	3 2	50 10	110 109	70 70	130 130		
Naphthalene	11.7	2		117	70 70	130		
Hexachlorobutadiene	19	2	20	95	70	130		
1,2,3-Trichlorobenzene Surr: 1,2-Dichloroethane-d4	11.5	2		115	70 70	130		
Surr: Toluene-d8	10.9 10.2		10 10	109 102	70 70	130 130		
Surr: 4-Bromofluorobenzene	9.32		10	93	70	130		
					-			



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Date: Work Order: **OC Summary Report** 15-Feb-10 Type: MS Sample Matrix Spike Test Code: EPA Method SW8260B File ID: 10020508.D Batch ID: MS15W0205M Analysis Date: 02/05/2010 11:01 Sample ID: 10020402-02AMS Units: µg/L Run ID: MSD\_15\_100205B Prep Date: 02/05/2010 11:01 Analyte Result **PQL** SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Dichlorodifluoromethane 33.9 2.5 Chloromethane 34.4 Vinvl chloride 46.2 2.5 Chloroethane 43.4 2.5 Bromomethane 29.1 Trichlorofluoromethane 2.5 44.9 1,1-Dichloroethene 45.3 2.5 Dichloromethane 46.8 trans-1,2-Dichloroethene 46.6 2.5 Methyl tert-butyl ether (MTBE) 56.1 1.3 1.1-Dichloroethane 44.3 2.5 cis-1,2-Dichloroethene 50.9 2.5 Bromochloromethane 2.5 Chloroform 44.9 2.5 2,2-Dichloropropane 48.7 2.5 1.2-Dichloroethane 54.9 2.5 1,1,1-Trichloroethane 2.5 48.9 n 1,1-Dichloropropene 47.3 2.5 Carbon tetrachloride 50.2 2.5 Benzene 1.3 Dibromomethane 57.3 2.5 1,2-Dichloropropane 47.6 2.5 Trichloroethene 47.9 2.5 Bromodichloromethane 54.5 2.5 cis-1,3-Dichloropropene 47.4 2.5 trans-1,3-Dichloropropene 51.7 2.5 1.1.2-Trichloroethane 53.3 2.5 Toluene 43.4 1.3 1.3-Dichloropropane 55.1 2.5 Dibromochloromethane 56.9 2.5 1,2-Dibromoethane (EDB) Tetrachloroethene 2.5 49.3 1,1,1,2-Tetrachloroethane 52.9 2.5 Chlorobenzene 46.5 2.5 Ethylbenzene 44.1 1.3 m,p-Xylene 47.1 1.3 Bromoform 56.9 2.5 Styrene 51.7 2.5 o-Xylene 47.6 1.3 1,1,2,2-Tetrachloroethane 51.7 2.5 1,2,3-Trichloropropane Isopropylbenzene 41.3 2.5 Bromobenzene 45.8 2.5 n-Propylbenzene 40.6 2.5 4-Chlorotoluene 43.6 2.5 2-Chlorotoluene 41.7 2.5 1,3,5-Trimethylbenzene 40.6 2.5 tert-Butvlbenzene 40.7 2.5 1,2,4-Trimethylbenzene 41.5 2.5 sec-Butylbenzene 41.7 2.5 1,3-Dichlorobenzene 43.8 2.5 1,4-Dichlorobenzene 42.2 2.5 4-Isopropyltoluene 2.5 1,2-Dichlorobenzene 42.7 2.5 n-Butylbenzene 40.2 2.5 1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene 48 6 Naphthalene 51.5 Hexachlorobutadiene 1,2,3-Trichlorobenzene 50.3 O Surr: 1.2-Dichloroethane-d4 56.6 Surr: Toluene-d8 50.3 Surr: 4-Bromofluorobenzene 46.1 



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<b>Date:</b> 15-Feb-10	(	QC Su	mmar	y Repor	t				<b>Work Ord</b> 1002040	
Sample Matrix Spike Duplicate		Type: MS	SD Te	est Code: EP	A Met	hod SW82	260B			
File ID: 10020509.D			Ва	atch ID: MS1	5W020	)5M	Analys	sis Date: 0	2/05/2010 11:23	
Sample ID: 10020402-02AMSD	Units : µg/L	F	Run ID: MS	SD_15_1002	05B		Prep [	Date: 0	2/05/2010 11:23	
Analyte	Result	PQL				LCI (ME)	-1		I %RPD(Limit)	Qua
Dichlorodifluoromethane										
Chloromethane	39.8 37.3	2.5 10	50 50	0	80 75	13	167 145	33.85 34.39	16.1(20)	
Vinyl chloride	54.7	2.5	50 50	0	109	28 43	134	34.3 <del>9</del> 46.24	8.2(20) 16.7(20)	
Chloroethane	51.9	2.5	50	0	109	39	154	43.41	17.8(20)	
Bromomethane	38.2	10	50	0	76	19	176	29.11	27.0(20)	R5
Trichlorofluoromethane	54.1	2.5	50	0	108	34	160	44.93	18.5(20)	
1,1-Dichloroethene	52	2.5	50	0	104	60	130	45.29	13.9(20)	
Dichloromethane	50.6	10	50	0	101	68	130	46.77	7.9(20)	
trans-1,2-Dichloroethene	52.7	2.5	50	0	105	63	130	46.62	12.1(20)	
Methyl tert-butyl ether (MTBE)	57.9	1.3	50	0	116	56	141	56.08	3.2(20)	
1,1-Dichloroethane	49.4	2.5	50	0	99	61	130	44.26	11.1(20)	
cis-1,2-Dichloroethene	55.8	2.5	50	0	112	70	130	50.86	9.3(20)	
Bromochloromethane Chloroform	59.8	2.5	50	0	120	70	130	58	3.0(20)	
2,2-Dichloropropane	48.8 55.7	2.5	50	0	98	67	130 152	44.85	8.4(20)	
1,2-Dichloroptopane	55.7 57	2.5 2.5	50 50	0	111 114	30 60	135	48.71 54.89	13.3(20) 3.7(20)	
1,1,1-Trichloroethane	55.3	2.5 2.5	50 50	0	111	59	135	48.86	12.3(20)	
1,1-Dichloropropene	53.7	2.5	50	0	107	63	130	47.27	12.8(20)	
Carbon tetrachloride	58.4	2.5	50	ő	117	50	147	50.22	15.1(20)	
Benzene	49.4	1.3	50	0	99	67	130	44.04	11.6(20)	
Dibromomethane	58.5	2.5	50	0	117	69	133	57.29	2.1(20)	
1,2-Dichloropropane	51.8	2.5	50	0	104	69	130	47.59	8.5(20)	
Trichloroethene	54.5	2.5	50	0	109	69	130	47.85	13.0(20)	
Bromodichloromethane	60.2	2.5	50	0	120	66	134	54.53	9.8(20)	
cis-1,3-Dichloropropene trans-1,3-Dichloropropene	50.9	2.5	50	0	102	63	130	47.41	7.2(20)	
1,1,2-Trichloroethane	54.2	2.5	50	0	108	66 68	131	51.7	4.8(20)	
Toluene	55.3 49.5	2.5 1.3	50 50	0	111 99	68 66	130 130	53.33 43.44	3.6(20) 13.0(20)	
1,3-Dichloropropane	58.2	2.5	50	0	116	70	130	55.08	5.6(20)	
Dibromochloromethane	59.9	2.5	50	0	120	70	130	56.91	5.2(20)	
1,2-Dibromoethane (EDB)	123	5	100	Ō	123	70	130	117.4	5.0(20)	
Tetrachloroethene	56.6	2.5	50	0	113	61	134	49.26	13.9(20)	
1,1,1,2-Tetrachloroethane	58.7	2.5	50	0	117	70	130	52.87	10.5(20)	
Chlorobenzene	51.5	2.5	50	0	103	70	130	46.5	10.2(20)	
Ethylbenzene	49.9	1.3	50	0	99.8	68	130	44.06	12.5(20)	
m,p-Xylene	53.5	1.3	50	0	107	64	130	47.11	12.8(20)	
Bromoform Styrene	61.9	2.5	50	0	124	64	138	56.94	8.3(20)	
o-Xylene	58 53.3	2.5 1.3	50 50	0	116 107	69 70	130 130	51.65 47.62	11.5(20) 11.3(20)	
1,1,2,2-Tetrachloroethane	53.3 54	2.5	50 50	0	107	70 65	131	51.65	4.5(20)	
1,2,3-Trichloropropane	107	10	100	0	107	70	130	103.9	3.3(20)	
Isopropylbenzene	48.5	2.5	50	ő	97	64	138	41.32	15.9(20)	
Bromobenzene	50	2.5	50	0	100	70	130	45.75	8.9(20)	
n-Propylbenzene	47.8	2.5	50	0	96	66	132	40.56	16.3(20)	
4-Chlorotoluene	49.8	2.5	50	0	99.6	70	130	43.59	13.3(20)	
2-Chlorotoluene	47.2	2.5	50	0	94	70	130	41.68	12.3(20)	
1,3,5-Trimethylbenzene	46.7	2.5	50	0	93	66	136	40.6	13.9(20)	
tert-Butylbenzene 1,2,4-Trimethylbenzene	47	2.5	50	0	94	65	137	40.69	14.4(20)	
sec-Butylbenzene	47.1 48.7	2.5 2.5	50 50	0	94 97	65 66	137 134	41.49 41.66	12.6(20) 15.5(20)	
1,3-Dichlorobenzene	49.2	2.5 2.5	50 50	0	97 98	70	134	43.76	11.8(20)	
1,4-Dichlorobenzene	47.3	2.5	50	0	95	70	130	42.22	11.3(20)	
4-Isopropyltoluene	47.6	2.5	50	0	95	66	137	40.97	14.9(20)	
1,2-Dichlorobenzene	47.4	2.5	50	ŏ	95	70	130	42.74	10.4(20)	
n-Butylbenzene	46.8	2.5	50	Ŏ	94	60	142	40.17	15.3(20)	
1,2-Dibromo-3-chloropropane (DBCP)	263	15	250	Ō	105	67	130	253.9	3.4(20)	
1,2,4-Trichlorobenzene	54.7	10	50	0	109	61	137	48.56	11.8(20)	
Naphthalene	57.2	10	50	0	114	40	167	51.52	10.4(20)	
Hexachlorobutadiene	96	10	100	0	96	61	130	79.97	18.3(20)	
1,2,3-Trichlorobenzene	56.1	10	50	0	112	51	144	50.32	10.9(20)	
Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8	55 54.2		50		110	70 70	130			
. 31.11 - 17.1111-1111-117.	51.2		50		102	70	130			



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**Date:** 15-Feb-10

### QC Summary Report

Work Order: 10020402

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.  $R5 = MS/MSD \ RPD \ exceeded \ the \ laboratory \ control \ limit. \ Recovery \ met \ acceptance \ criteria.$ 

### Billing Information:

# CHAIN-OF-CUSTODY RECORD

## Alpha Analytical, Inc

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention Shane Walton (818) 393-2808 x Phone Number (614) 424-4117 x waltons@battelle.org connerd@battelle.org EMail Address

S

Page: 1 of 1

Report Due By: 5:00 PM On: 18-Feb-2010 WorkOrder: BMIS10020402

EDD Required: Yes

Sampled by: Client

Cooler Temp Samples Received

04-Feb-2010 04-Feb-2010 **Date Printed** 

QC Level: DS4 = DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates

Job: G005862/JPL Groundwater Monitoring

Betsy Cutie

(614) 424-4899

cutiee@batelle.org

Client's COC #: 28878

San Diego, CA 92110

Suite C-205 3990 Old Town Ave Battelle Memorial Institute

Sample ID BMI10020402-03A MW-14-3 BMI10020402-02A MW-14-4 BMI10020402-01A BMI10020402-07A TB-2-2/3/10 BMI10020402-06A BMI10020402-05A MW-14-1 BMI10020402-04A MW-14-2 MW-14-5 EB-2-2/3/10 Sample ID Client å å Š å å Š Matrix Date å 02/03/10 02/03/10 08:31 02/03/10 09:46 02/03/10 09:59 02/03/10 09:27 02/03/10 08:59 02/03/10 08:00 Collection No. of Bottles S S S S ω Sub 0 0 0 0 0 0 TAT 5 6 6 5 5 5 5 Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate 314\_W METALS\_D VOC\_TIC\_ Ç VOC by 524 VOC by 524 Criteria Criteria VOC\_W Requested Tests Reno Trip Blank 8/25/09 Sample Remarks MS/MSD

limpabith (Ideax

Comments:

Logged in by:

Llizabeth HdCox

Security seals intact. Frozen ice. Temp Blank #7546 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).:

Alpha Analytical, Inc.

24-10 1135

Date/Time

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other)

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information:		Alpha Analytical, Inc.	Samples Collected From Which State?  AZ CA NV WA	hich State? 28878
ss 505 tate, Zip 604	C.	Sparks, Nevada 89431-5778  Sparks, Nevada 89431-5778  Phone (775) 355-1044  Fax (775) 355-0406	OR OTHER	Page # of
Frione Number Fax			L	
Client Name  SATICILE / DAVID CAMER	Po.# 2 (\$013	Job # 6005862		/ Required QC Level?
DLQ TOWN AVE	EMail Address	1	4.2 200.	/ 1    (III) IV
2	Phone # (619)726- 7311	Fax #	(52.0 (c. () - ()	EDD / EDF? YESNO
Date Matrix* Sample	Report Attention	Total and type of containers	ر کر	Global ID #
Sampled Sampled Below Lab ID Number (Use Only)	Sample Description	TAT Filtered ** See below		REMARKS
800 213/1- AR BMI1002046201	MW-14-5	Nonn V/P 4	X X	
831	MW-14-4	×	*	M3/MSD
.03	MW-14-3	2410	XXX	
<b>559</b> - 05	MW-14-1		XX	
746	EB-2-213/10		У У Х	EQUIP. BLANK
.07	TB-2-2/3/10	1 //	X	TRIP ISLANIC
ADDITIONAL INSTRUCTIONS:				
Signature	Print Name		Company	Date Time
Relinquished by	MARCO MENDOUR	INS/GAT	EEC	2/3/10 1216
Received by Relinguished by	Sorthery Stalk	Aph	Ansprine	1/3/10 12/6
Relinquished by	Elizabath Hou	OX	lipha	24-10 1130
Received by				
*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other  NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis	oT - Other AR - Air reported unless other arrangements are	**: L-Liter V-Voa S-Soil Jar made. Hazardous samples will be r	O-Orbo T-Tedlar B-Brass eturned to client or disposed of at client or	ss P-Plastic OT-Other t expense. The report for the analysi
	- (	!		-

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.



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Date: 18-Feb-10

David Conner

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

(818) 393-2808

Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

BMI10020506

**Cooler Temp:** 

4°C

Alpha's Sample ID	Client's Sample ID	Matrix
10020506-01A	MW-18-5	Aqueous
10020506-02A	MW-18-4	Aqueous
10020506-03A	MW-18-3	Aqueous
10020506-04A	MW-18-2	Aqueous
10020506-05A	DUPE-2-1Q10	Aqueous
10020506-06A	EB-3-2/4/10	Aqueous
10020506-07A	TB-3-2/4/10	Aqueous
10020506-03A 10020506-04A 10020506-05A 10020506-06A	MW-18-3 MW-18-2 DUPE-2-1Q10 EB-3-2/4/10	Ac Ac Ac

### **Manually Integrated Analytes**

Alpha's Sample ID

Test Reference

**Analyte** 

NONE

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Saulner

Dalter Hirihan



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner Phone: (818) 393-2808

fax: (614) 458-6641

Date Received: 02/05/10

Job: G005862/JPL Groundwater Monitoring

### Perchlorate by Ion Chromatography EPA Method 314.0

					****
	Parameter	Concentration	Reporting	Date	Date
			Limit	Extracted	Analyzed
Client ID: MW-18-5					
Lab ID: BMI10020506-01A	Perchlorate	ND	$1.00~\mu g/L$	02/11/10 13:07	02/11/10 19:17
Date Sampled 02/04/10 08:23					
Client ID: MW-18-4					
Lab ID: BMI10020506-02A	Perchlorate	58.8	$1.00~\mu g/L$	02/11/10 13:07	02/11/10 19:35
Date Sampled 02/04/10 09:05					
Client ID: MW-18-3					
Lab ID: BMI10020506-03A	Perchlorate	45.1	$1.00~\mu g/L$	02/11/10 13:07	02/11/10 19:54
Date Sampled 02/04/10 09:35					
Client ID: MW-18-2					
Lab ID: BMI10020506-04A	Perchlorate	21.4	$1.00~\mu g/L$	02/11/10 13:07	02/11/10 20:12
Date Sampled 02/04/10 10:02					
Client ID: DUPE-2-1Q10					
Lab ID: BMI10020506-05A	Perchlorate	60.1	$1.00~\mu g/L$	02/11/10 13:07	02/11/10 20:31
Date Sampled 02/04/10 00:00					
Client ID: EB-3-2/4/10					
Lab ID: BMI10020506-06A	Perchlorate	ND	$1.00~\mu g/L$	02/11/10 13:07	02/11/10 20:49
Date Sampled 02/04/10 09:50					

ND = Not Detected

Roger Scholl Kandy Sadner Walter Hinkn

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

**David Conner** Attn:

Phone: (818) 393-2808 Fax: (614) 458-6641

Date Received: 02/05/10

G005862/JPL Groundwater Monitoring Job:

### Metals by ICPMS EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-18-4 Lab ID: BMI10020506-02A Date Sampled 02/04/10 09:05	Chromium (Cr)	ND .	0.0050 mg/L	02/10/10 16:36	02/12/10 04:35
Client ID: <b>MW-18-3</b> Lab ID: BMI10020506-03A Date Sampled 02/04/10 09:35	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 04:52
Client ID: <b>MW-18-2</b> Lab ID: BMI10020506-04A Date Sampled 02/04/10 10:02	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 04:57
Client ID: <b>DUPE-2-1Q10</b> Lab ID: BMI10020506-05A Date Sampled 02/04/10 00:00	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:03
Client ID: EB-3-2/4/10 Lab ID: BMI10020506-06A Date Sampled 02/04/10 09:50	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:09

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples

**Report Date** 



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

### Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated		·
	Parameter	Estimated	Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID: MW-18-5 Lab ID: BMI10020506-01A Date Received: 02/05/10 Date Sampled: 02/04/10 08:23	Sulfur dioxide	5.1	2.0 μg/L	02/09/10 14:19	02/09/10 14:19
Client ID: MW-18-4 Lab ID: BMI10020506-02A Date Received: 02/05/10 Date Sampled: 02/04/10 09:05	Sulfur dioxide	2.5	2.0 μg/L	02/09/10 14:41	02/09/10 14:41
Client ID: MW-18-3 Lab ID: BMI10020506-03A  Date Received: 02/05/10  Date Sampled: 02/04/10 09:35	* * * None Found * * *	ND	2.0 μg/L	02/09/10 15:03	02/09/10 15:03
Client ID : MW-18-2 Lab ID : BMI10020506-04A  Date Received : 02/05/10  Date Sampled : 02/04/10 10:02	*** None Found ***	ND	2.0 μg/L	02/09/10 15:25	02/09/10 15:25
Client ID : DUPE-2-1Q10 Lab ID : BMI10020506-05A Date Received : 02/05/10 Date Sampled : 02/04/10 00:00	*** None Found ***	ND	2.0 μg/L	02/09/10 15:48	02/09/10 15:48
Client ID: EB-3-2/4/10 Lab ID: BMI10020506-06A Date Received: 02/05/10 Date Sampled: 02/04/10 09:50	* * * None Found * * *	ND	2.0 μg/L	02/09/10 13:13	02/09/10 13:13
Client ID: TB-3-2/4/10 Lab ID: BMI10020506-07A Date Received: 02/05/10 Date Sampled: 02/04/10 00:00	* * * None Found * * *	ND	2.0 μg/L	02/09/10 12:50	02/09/10 12:50



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Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

oger Scholl Kandy Soulier

Walter Hindrey

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento. CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical. Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/18/10

Report Date

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### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020506-01A

Client I.D. Number: MW-18-5

Attn: **David Conner** Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/04/10 08:23

Received: 02/05/10

Extracted: 02/09/10 14:19 Analyzed: 02/09/10 14:19

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCF	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND ·	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	91	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	105	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			•	, ,	

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl

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1.0

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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Report Date

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### ANALYTICAL REPORT

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020506-02A

Client I.D. Number: MW-18-4

Attn: **David Conner** 

Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/04/10 09:05

Received: 02/05/10

Extracted: 02/09/10 14:41 Analyzed: 02/09/10 14:41

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	Reporting L	_imit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	2.1		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	10		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	1.2		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	90	(70-130)	%RE
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%RE
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	106	(70-130)	%RE
32	1,3-Dichloropropane	ND		0.50	ug/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020506-03A

Client I.D. Number: MW-18-3

**David Conner** Attn: Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/04/10 09:35

Received: 02/05/10

Extracted: 02/09/10 15:03 Analyzed: 02/09/10 15:03

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	1.8		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	17		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCF	P) ND	2.5	μg/L
25	Trichloroethene	1.2		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	91	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	108	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			•		

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl

 $Sacramento, CA \bullet (916) \ 366 - 9089 \ / \ Las \ Vegas, \ NV \bullet (702) \ 736 - 7522 \ / \ Carson, CA \bullet (310) \ 803 - 7761 \ / \ info@alpha-analytical.com$ 

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 

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### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110 Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020506-04A

Client I.D. Number: MW-18-2

Attn: **David Conner** Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/04/10 10:02

Received: 02/05/10

Extracted: 02/09/10 15:25 Analyzed: 02/09/10 15:25

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	F	eporting I	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND	·=···	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND ·		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	91	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	105	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/18/10 Report Date

Page 1 of 1



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### ANALYTICAL REPORT

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020506-05A

Client I.D. Number: DUPE-2-1Q10

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/04/10 00:00

Received: 02/05/10

Extracted: 02/09/10 15:48 Analyzed: 02/09/10 15:48

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting i	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND ·		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	2.0		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	8.9		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	1.1		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	92	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	107	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	ug/L			*		

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Soulin

Walter Strikm

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento. CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/18/10

Report Date



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### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020506-06A

Client I.D. Number: EB-3-2/4/10

**David Conner** Attn: Phone: (818) 393-2808

(614) 458-6641 Fax:

Sampled: 02/04/10 09:50

Received: 02/05/10 Extracted: 02/09/10 13:13 Analyzed: 02/09/10 13:13

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	92	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	107	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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Report Date

Page 1 of 1



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### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

Job: G005862/

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020506-07A

Client I.D. Number: TB-3-2/4/10

Attn: David Conner

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/04/10 00:00

Received: 02/05/10

Extracted: 02/09/10 12:50 Analyzed: 02/09/10 12:50

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	Q	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	93	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	101	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	106	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Soulin

Walter Hirihm

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

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2/18/10

**Report Date** 

Page 1 of 1



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### **VOC Sample Preservation Report**

Work Order: BMI10020506

Job: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН	
10020506-01A	MW-18-5	Aqueous	2	
10020506-02A	MW-18-4	Aqueous	2	
10020506-03A	MW-18-3	Aqueous	2	
10020506-04A	MW-18-2	Aqueous	2	
10020506-05A	DUPE-2-1Q10	Aqueous	2	
10020506-06A	EB-3-2/4/10	Aqueous	2	
10020506-07A	TB-3-2/4/10	Aqueous	2	

2/18/10

Report Date



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<b>Date:</b> 17-Feb-10		(	QC S	lumm	ary R	Lepor	t				,	Work Ord 1002050	
Method Bla File ID: 14	nk		Type: I	MBLK		ode: <b>EF</b> ID: <b>235</b> 7		thod 314.0	Analysi	s Date:	02/11/20	010 14:04	
Sample ID:	MB-23577	Units : µg/L		Run ID	:IC_3_	100211 <i>A</i>	١		Prep Da	ate:	02/11/20	010 13:07	
Analyte		Result	PQL	Spk	Val Spk	RefVal	%REC	LCL(ME)	UCL(ME) F	RPDRef\	Val %RP	D(Limit)	Qual
Perchlorate		ND		1									
	Fortified Blank		Type: I	LFB				thod 314.0					
File ID: 15	. <b></b>					ID: 2357	-		•			010 14:22	
Sample ID:	LFB-23577	Units : µg/L			: IC_3_1				Prep Da			010 13:07	
Analyte		Result	PQL	Spk'	Val Spk	RefVal	%REC	LCL(ME)	UCL(ME) F	RPDRef\	√al %RP	D(Limit)	Qual
Perchlorate		25		2	25		100	85	115				
Sample Mat	trix Spike		Type: I	LFM	Test C	ode: EF	A Met	thod 314.0					
File ID: <b>40</b>					Batch	ID: <b>235</b> 7	77		Analysi	s Date:	02/11/20	010 22:03	
Sample ID:	10020971-03ALFM	Units : µg/L		Run ID	:IC_3_1	00211A	١		Prep Da	ate:	02/11/20	010 13:07	
Analyte		Result	PQL	Spk'	Val Spk	RefVal	%REC	LCL(ME)	UCL(ME) R	RPDRef\	/al %RP	D(Limit)	Qual
Perchlorate		30.4		2	25	0	122	80	120				M1
Sample Mat	rix Spike Duplicate		Type: I	LFMD	Test C	ode: EF	A Met	thod 314.0					
File ID: 41	•				Batch	ID: <b>235</b> 7	77		Analysi	s Date:	02/11/20	010 22:21	
Sample ID:	10020971-03ALFMD	Units : µg/L		Run ID	:IC 3 1	00211A	١		Prep Da	ate:	02/11/20	010 13:07	
Analyte		Result	PQL					LCL(ME)	UCL(ME) R	RPDRef\	/al %RP	D(Limit)	Qual
Perchlorate		27.7		2	25	. 0		80	120	30.43		.3(15)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

M1 = Matrix spike recovery was high, the method control sample recovery was acceptable.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

<b>Date:</b> 17-Feb-10	(	QC S	ummar	y Repor	t			<b>Work Ordo</b> 10020506	
Method Blank File ID: 021110.B\160SMPL.D\ Sample ID: MB-23572	Units : mg/L	Type: N	В	est Code: El atch ID: 235 :P/MS 1002	72K	hod 200.8	Analysis Dat	e: 02/12/2010 04:12 02/10/2010 16:36	
Analyte	Result	PQL		_		LCL(ME)	•	efVal %RPD(Limit)	Qual
Chromium (Cr)	ND	0.005	5						
Laboratory Control Spike File ID: 021110.B\161_LCS.D\ Sample ID: LCS-23572 Analyte	Units : <b>mg/L</b> Result	Type: L	B Run ID: IC	est Code: EF atch ID: 235 P/MS_1002 SpkRefVal	72K 12C		Prep Date:	e: <b>02/12/2010 04:18</b> <b>02/10/2010 16:36</b> efVal %RPD(Limit)	Qual
Chromium (Cr)	0.0489	0.005	0.05		98	80	120		
Sample Matrix Spike File ID: 021110.B\165SMPL.D\ Sample ID: 10020506-02AMS Analyte	Units : <b>mg/L</b> Result	Type: N	B Run ID: IC	est Code: EF atch ID: 2357 P/MS_1002 SpkRefVal	72K 12C		Prep Date:	e: <b>02/12/2010 04:40</b> <b>02/10/2010 16:36</b> efVal %RPD(Limit)	Qual
Chromium (Cr)	0.0464	0.005		0		80	120		
Sample Matrix Spike Duplicate File ID: 021110.B\166SMPL.D\ Sample ID: 10020506-02AMSD	Units : mg/L	Type: N	В	est Code: EF atch ID: 2357 P/MS_1002	72K	hod 200.8	Analysis Date:	e: 02/12/2010 04:46 02/10/2010 16:36	
Analyte	Result	PQL				LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual
Chromium (Cr)	0.0437	0.005	0.05	0	87	80	120 0.04	1635 5.9(20)	_

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 17-Feb-10	(	2C Sumn	nary Report	Work Or 1002050	
Method Blank		Type: MBLK	Test Code: EPA Method SW8	260B	
File ID: <b>10020907.D</b>			Batch ID: MS15W0209M	Analysis Date: 02/09/2010 10:37	7
Sample ID: MBLK MS15W0209M	Units : µg/L	Run II	D: MSD_15_100209B	Prep Date: 02/09/2010 10:37	7
Analyte	Result	PQL Spl	Val SpkRefVal %REC LCL(ME	) UCL(ME) RPDRefVal %RPD(Limit)	Qua
Dichlorodifluoromethane	ND	0.5			
Chloromethane	ND	1			
Vinyl chloride	ND	0.5			
Chloroethane	ND	0.5			
Bromomethane	ND	_ 1			
Trichlorofluoromethane	ND ND	0.5			
1,1-Dichloroethene Dichloromethane	ND ND	0.5 1			
Freon-113	ND	0.5			
rans-1,2-Dichloroethene	ND	0.5			
Methyl tert-butyl ether (MTBE)	ND	0.5			
1,1-Dichloroethane	ND	0.5			
2-Butanone (MEK)	ND	10			
cis-1,2-Dichloroethene	ND	0.5			
Bromochloromethane	ND	0.5			
Chloroform	ND	0.5			
2,2-Dichloropropane	ND	0.5			
1,2-Dichloroethane 1,1,1-Trichloroethane	ND ND	0.5 0.5			
1,1-Dichloropropene	ND ND	0.5			
Carbon tetrachloride	ND	0.5			
Benzene	ND	0.5			
Dibromomethane	ND	0.5			
1,2-Dichloropropane	ND	0.5			
Trichloroethene	ND	0.5			
Bromodichloromethane	ND	0.5			
1-Methyl-2-pentanone (MIBK)	ND	2.5			
cis-1,3-Dichloropropene	ND	0.5			
rans-1,3-Dichloropropene	ND	0.5			
1,1,2-Trichloroethane Foluene	ND ND	0.5 0.5			
1,3-Dichloropropane	ND	0.5			
Dibromochloromethane	ND	0.5			
1,2-Dibromoethane (EDB)	ND	1			
Tetrachloroethene	ND	0.5			
1,1,1,2-Tetrachloroethane	ND	0.5			
Chlorobenzene	ND	0.5			
Ethylbenzene	ND	0.5			
n,p-Xylene	ND	0.5			
Bromoform Styrene	ND ND	0.5 0.5			
o-Xylene	ND	0.5 0.5			
1,1,2,2-Tetrachloroethane	ND	0.5			
1,2,3-Trichloropropane	ND	1			
sopropylbenzene	ND	0.5			
Bromobenzene	ND	0.5			
n-Propylbenzene	ND	0.5			
1-Chlorotoluene	ND	0.5			
2-Chlorotoluene	ND	0.5			
1,3,5-Trimethylbenzene	ND	0.5			
ert-Butylbenzene 1,2,4-Trimethylbenzene	ND ND	0.5			
sec-Butylbenzene	ND ND	0.5 0.5			
,3-Dichlorobenzene	ND ND	0.5			
,4-Dichlorobenzene	ND	0.5			
l-Isopropyltoluene	ND	0.5			
,2-Dichlorobenzene	ND	0.5			
-Butylbenzene	ND	0.5			
,2-Dibromo-3-chloropropane (DBCP)	ND	2.5			
,2,4-Trichlorobenzene	ND	1			
Naphthalene	ND	1			
lexachlorobutadiene	ND	1			
1,2,3-Trichlorobenzene Surr: 1,2-Dichloroethane-d4	ND 0.25	1	10 02 70	130	
Surr: Toluene-d8	9.25 10.1		10 93 70 10 101 70	130	



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

<b>Date:</b> 17-Feb-10	(	QC Sur	nmary ]	Report			<b>Work Ord</b> 1002050	
Surr: 4-Bromofluorobenzene	10.4		10	104	70	130	10020300	
<b>Laboratory Control Spike</b>		Type: LCS	Test	Code: EPA Meth	nod SW82	:60B		
File ID: 10020905.D			Batc	n ID: MS15W020	9M	Analysis Date	e: 02/09/2010 09:37	
Sample ID: LCS MS15W0209M	Units : µg/L			_15_100209B		Prep Date:	02/09/2010 09:37	
Analyte	Result	PQL	SpkVal Sp	kRefVal %REC	LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Dichlorodifluoromethane	8.99	1	10	90	70	130		
Chloromethane	7.02	2	10	70	70	130		
Vinyl chloride Chloroethane	10.2	1 1	10	102 92	70 70	130 130		
Bromomethane	9.21 5.79	2	10 10	58	70(70)	130		L50
Trichlorofluoromethane	9.99	1	10	99.9	70	130		
1,1-Dichloroethene	10.7	1	10	107	70	130		
Dichloromethane	10.5	2	10	105	70	130		
trans-1,2-Dichloroethene	10.8	1	10	108	70	130		
Methyl tert-butyl ether (MTBE)	12	0.5	10	120	70 70	130 130		
1,1-Dichloroethane cis-1,2-Dichloroethene	10.3 11.7	1	10 10	103 117	70 70	130		
Bromochloromethane	12	1	10	120	70	130		
Chloroform	9.8	1	10	98	70	130		
2,2-Dichloropropane	10.9	1	10	109	70	130		
1,2-Dichloroethane	11.1	1	10	111	70 70	130		
1,1,1-Trichloroethane 1,1-Dichloropropene	10.6 10.9	1 1	10 10	106 109	70 70	130 130		
Carbon tetrachloride	10.9	1	10	109	70	130		
Benzene	10.5	0.5	10	105	70	130		
Dibromomethane	12.1	1	10	121	70	130		
1,2-Dichloropropane	11.6	1	10	116	70	130		
Trichloroethene	11	1	10	110	70 70	130		
Bromodichloromethane cis-1,3-Dichloropropene	12.1 11.3	1 1	10 10	121 113	70 70	130 130		
trans-1,3-Dichloropropene	11.4	1	10	114	70	130		
1,1,2-Trichloroethane	12.1	1	10	121	70	130		
Toluene	10.4	0.5	10	104	70	130		
1,3-Dichloropropane	12.6	1	10	126	70 70	130		
Dibromochloromethane 1,2-Dibromoethane (EDB)	12.1 26	1 2	10 20	121 130	70 70	130 130		
Tetrachloroethene	11	1	10	110	70 70	130		
1,1,1,2-Tetrachloroethane	11.4	1	10	114	70	130		
Chlorobenzene	10.6	1	10	106	70	130		
Ethylbenzene	10.2	0.5	10	102	70 70	130		
m,p-Xylene Bromoform	11 11.9	0.5 1	10 10	110 119	70 70	130 130		
Styrene	12	1	10	120	70 70	130		
o-Xylene	11.1	0.5	10	111	70	130		
1,1,2,2-Tetrachloroethane	11.3	1	10	113	70	130		
1,2,3-Trichloropropane	21.8	2	20	109	70	130		
Isopropylbenzene Bromobenzene	10.3	1	10	103	70 70	130		
n-Propylbenzene	10.5 10.1	1 1	10 10	105 101	70 70	130 130		
4-Chlorotoluene	10.6	1	10	106	70	130		
2-Chlorotoluene	10.2	1	10	102	70	130		
1,3,5-Trimethylbenzene	9.63	1	10	96	70	130		
tert-Butylbenzene 1,2,4-Trimethylbenzene	9.71	1	10	97	70 70	130		
sec-Butylbenzene	9.85 10	1	10 10	99 100	70 70	130 130		
1,3-Dichlorobenzene	10.2	1	10	102	70	130		
1,4-Dichlorobenzene	9.66	1	10	97	70	130		
4-Isopropyltoluene	9.72	1	10	97	70	130		
1,2-Dichlorobenzene	9.67	1	10	97	70 70	130		
n-Butylbenzene 1,2-Dibromo-3-chloropropane (DBCP)	9.79 55.3	1 3	10 50	98 111	70 70	130 130		
1,2,4-Trichlorobenzene	10.6	2	50 10	106	70 70	130		
Naphthalene	12.1	2	10	121	70	130		
Hexachlorobutadiene	17.1	2	20	85	70	130		
1,2,3-Trichlorobenzene	10.9	2	10	109	70	130		
Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8	8.91		10 10	89 05	70 70	130		
Surr: 4-Bromofluorobenzene	9.48 10.7		10 10	95 107	70 70	130 130		
	10.7		10	107	, 0	100		



Chloroethane

Bromomethane

Trichlorofluoromethane

trans-1,2-Dichloroethene

Methyl tert-butyl ether (MTBE)

1.1-Dichloroethene

1,1-Dichloroethane

Chloroform

Benzene

Toluene

cis-1,2-Dichloroethene

Bromochloromethane

2.2-Dichloropropane

1,2-Dichloroethane

1,1,1-Trichloroethane

1.1-Dichloropropene

Carbon tetrachloride

1,2-Dichloropropane

Bromodichloromethane

cis-1,3-Dichloropropene

1,1,2-Trichloroethane

1,3-Dichloropropane

Tetrachloroethene

Chlorobenzene

Ethylbenzene

m.p-Xvlene

**Bromoform** 

Styrene

o-Xylene

Dibromochloromethane

1,2-Dibromoethane (EDB)

1.1.1.2-Tetrachloroethane

1,1,2,2-Tetrachloroethane

1,2,3-Trichloropropane

1,3,5-Trimethylbenzene

1.2.4-Trimethylbenzene

Isopropylbenzene

Bromobenzene

n-Propylbenzene

4-Chlorotoluene

2-Chlorotoluene

tert-Butylbenzene

sec-Butylbenzene

1.3-Dichlorobenzene

1,4-Dichlorobenzene

1,2-Dichlorobenzene

1,2,4-Trichlorobenzene

Hexachlorobutadiene

Surr: Toluene-d8

1,2,3-Trichlorobenzene

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

1,2-Dibromo-3-chloropropane (DBCP)

4-Isopropyltoluene

n-Butylbenzene

Naphthalene

trans-1,3-Dichloropropene

Dibromomethane

Trichloroethene

Dichloromethane

### Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order: Date: **QC Summary Report** 10020506 17-Feb-10 Type: MS Test Code: EPA Method SW8260B Sample Matrix Spike Analysis Date: 02/09/2010 11:00 File ID: 10020908.D Batch ID: MS15W0209M Sample ID: 10020801-01AMS Units: µg/L Prep Date: 02/09/2010 11:00 Run ID: MSD 15 100209B SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Analyte Result **PQL** Qual 167 Dichlorodifluoromethane 39.1 2.5 0 78 13 66 28 Chloromethane 50 0 145 33.2 10 Vinyl chloride 49.8 2.5 50 0 99.6 43 134

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Work Order: Date: QC Summary Report 10020506 17-Feb-10 Type: MSD Test Code: EPA Method SW8260B Sample Matrix Spike Duplicate File ID: 10020909.D Analysis Date: 02/09/2010 11:22 Batch ID: MS15W0209M 02/09/2010 11:22 Sample ID: 10020801-01AMSD Units: µg/L Run ID: MSD 15 100209B Prep Date: Analyte **PQL** SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Result \_\_\_\_\_ Dichlorodifluoromethane 167 41.2 39.09 5.3(20) 2.5 50 0 82 13 Chloromethane 36.2 50 0 72 28 145 33.17 8.8(20) 10 Vinyl chloride 54.2 2.5 50 0 108 43 134 49.79 8.6(20)Chloroethane 154 41.02 6.6(20)43.8 2.5 50 0 88 39 Bromomethane 29.2 10 50 0 58 19 176 22.24 27.1(20) **R58** 12.0(20) Trichlorofluoromethane 48 2.5 50 0 96 34 160 42.57 1.1-Dichloroethene 103 60 130 48.06 7.3(20)51.7 2.5 50 0 68 1.3(20)Dichloromethane 50.3 10 50 0 101 130 49.6 trans-1,2-Dichloroethene 52.6 2.5 50 0 105 63 130 51.37 2.3(20)Methyl tert-butyl ether (MTBE) 50 0 114 56 141 56.36 1.4(20)57.2 1.3 1.1-Dichloroethane 49.7 2.5 0 gq 61 130 48.57 2.4(20)50 cis-1,2-Dichloroethene 54.63 0.9(20)55.1 2.5 50 0 110 70 130 130 Bromochloromethane 57.1 2.5 50 0 114 70 56.77 0.6(20)2.6(20) Chloroform 46.9 2.5 50 0.5 93 67 130 45.7 2,2-Dichloropropane 51.1 2.5 50 0 102 30 152 50.13 2.0(20)51.77 0.7(20)1.2-Dichloroethane 60 135 51.4 2.5 50 0 103 1,1,1-Trichloroethane 50.9 2.5 50 0 102 59 137 49.33 3.1(20)63 51.79 3.0(20)1.1-Dichloropropene 53.4 2.5 50 0 107 130 Carbon tetrachloride 50 49.83 2.6(20)51.1 2.5 50 n 102 147 Benzene 67 130 48.42 3.5(20)1.3 50 0 100 56.28 0.0(20)Dibromomethane 56.3 2.5 69 133 50 O 113 1.7(20) 1,2-Dichloropropane 54.6 2.5 50 0 109 69 130 53.66 3.0(20)Trichloroethene 51.8 2.5 50 0 104 69 130 50.23 Bromodichloromethane 2.4(20) 56.3 2.5 50 0 113 66 134 55 cis-1,3-Dichloropropene 63 130 49.56 1.6(20)50.4 2.5 50 0 101 trans-1,3-Dichloropropene 51.4 2.5 50 0 103 66 131 50.92 0.9(20)1.1.2-Trichloroethane 0 112 68 130 54.45 2.6(20)55.9 2.5 50 Toluene 49.9 0 99.8 66 130 47.26 5.5(20) 1.3 50 1,3-Dichloropropane 2.5 50 70 130 57.37 3.8(20)59.6 0 119 Dibromochloromethane 57.7 2.5 50 0 115 70 130 54.11 6.4(20)3.1(20) 1,2-Dibromoethane (EDB) 120 5 100 0 120 70 130 115.9 Tetrachloroethene 52.6 2.5 105 61 134 49.73 5.5(20)50 0 1,1,1,2-Tetrachloroethane 2.5 110 70 130 52.32 5.0(20)50 0 130 Chlorobenzene 50.7 2.5 70 48.47 4.4(20)50 0 101 Ethylbenzene 68 47.04 4.8(20) 49.3 1.3 50 0 99 130 50.53 m,p-Xylene 5.1(20) 53.2 1.3 50 0 106 64 130 Bromoform 64 52.82 5.6(20) 55.8 2.5 50 0 112 138 Styrene 69 130 55.13 4.4(20)57.6 2.5 50 0 115 o-Xvlene 70 130 51.01 6.0(20)54.2 1.3 50 0 108 1,1,2,2-Tetrachloroethane 53 2.5 50 0 106 65 131 51.52 2.8(20)1,2,3-Trichloropropane 105 10 100 0 105 70 130 100.3 4.7(20)4.1(20) Isopropylbenzene 49.4 2.5 47.45 64 138 50 O 99 Bromobenzene 70 47.59 3.8(20) 49.4 2.5 50 0 99 130 n-Propylbenzene 66 46.31 4.1(20)48.3 2.5 50 0 97 132 4-Chlorotoluene 49.9 2.5 50 0 99.8 70 130 47.9 4.1(20)2-Chlorotoluene 48.6 2.5 50 97 70 130 46.62 4.2(20)1.3.5-Trimethylbenzene 66 136 44 4 4.5(20)46.4 2.5 50 0 93 tert-Butylbenzene 44.84 4.4(20) 46.9 2.5 50 0 94 65 137 1,2,4-Trimethylbenzene 46.9 2.5 50 0 94 65 137 44.63 4.9(20)sec-Butylbenzene 48.3 2.5 50 0 97 66 134 46.58 3.7(20)1,3-Dichlorobenzene 48.5 2.5 50 0 97 70 130 46.18 4.9(20)1.4-Dichlorobenzene 2.5 50 94 70 130 44.2 6.6(20)47.2 0 4-Isopropyltoluene 44.78 4.7(20)46.9 2.5 50 0 94 66 137 1,2-Dichlorobenzene 4.8(20)45.6 2.5 50 0 91 70 130 43.5 n-Butylbenzene 60 142 44.52 4.8(20) 46 7 2.5 50 0 93 1,2-Dibromo-3-chloropropane (DBCP) 250 103 67 130 246.2 4.4(20)257 15 1.2.4-Trichlorobenzene 45.02 9.3(20)49.4 10 50 0 99 61 137 Naphthalene 7.9(20)54.6 10 50 0 109 40 167 50.42 Hexachlorobutadiene 84.2 10 100 0 84 61 130 77.2 8.6(20)1.2.3-Trichlorobenzene 50.6 10 n 101 51 144 45.89 9.7(20)50 Surr: 1,2-Dichloroethane-d4 44.5 50 89 70 130 Surr: Toluene-d8 48.5 70 50 97 130 Surr: 4-Bromofluorobenzene 54 50 108 70 130



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**Date:** 17-Feb-10

### QC Summary Report

Work Order: 10020506

### Comments

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

R58 = MS/MSD RPD exceeded the laboratory control limit.

### Billing Information:

# CHAIN-OF-CUSTODY RECORD

## Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention

Phone Number

connerd@battelle.org waltons@battelle.org

EMail Address

Shane Walton David Conner

(614) 424-4117 x (818) 393-2808 x

(614) 424-4899 x

cutiee@batelle.org

Battelle Memorial Institute Suite C-205 3990 Old Town Ave

Р О.: San Diego, CA 92110

Client's COC #: 28896 218013

Page: 1 of 1

Report Due By: 5:00 PM On: 19-Feb-2010 WorkOrder: BMIS10020506

EDD Required: Yes

Sampled by: Client Cooler Temp

Samples Received 05-Feb-2010

05-Feb-2010 Date Printed

QC Level: DS4 = DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates G005862/JPL Groundwater Monitoring

									Requested Tests	Tests	
Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles Alpha Sub	Bottles Sub	TAT	314_W	METALS_D W	METALS_D VOC_TIC_			Sample Remarks
BMI10020506-01A	MW-18-5	AQ 02/04/10 08:23	4	0	10	Perchlorate		VOC by 524 Criteria	VOC by 524 Criteria		
BMI10020506-02A	MW-18-4	AQ 02/04/10 09:05	5	0	10	Perchlorate	Ç.	VOC by 524 Criteria	VOC by 524 Criteria		
BMI10020506-03A	MW-18-3	AQ 02/04/10 09:35	თ	0	10	Perchlorate	Çr	VOC by 524 Criteria	VOC by 524 Criteria		
BMI10020506-04A	MW-18-2	AQ 02/04/10 10:02	5	0	10	Perchlorate	ਨ	VOC by 524 Criteria	VOC by 524 Criteria		
BMI10020506-05A	DUPE-2-1Q10	AQ 02/04/10 00:00	5	0	10	Perchlorate	Ç	VOC by 524 Criteria	VOC by 524 Criteria		
BMI10020506-06A	EB-3-2/4/10	AQ 02/04/10 09:50	თ	0	6	Perchlorate	Ş.	VOC by 524 Criteria	VOC by 524 Criteria		
BMI10020506-07A TB-3-2/4/10	TB-3-2/4/10	AQ 02/04/10 00:00	0	0	10			VOC by 524 Criteria	VOC by 524 Criteria		Reno Trip Blank 8/25/09

Comments:

Security seals intact. Frozen ice. Temp Blank #8631 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by:	
Chabeth	S
Adox	Signature
Elizabeth	Print
Hdlox	Name
Alpha Analytical, Inc.	Company
2.5.10 1467	Date/Time

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other)

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

			)
Billing Information: Name <i>GEMLO TSMPKMS / BATTECLE</i>	Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21	ical, Inc.  Samples Collected From Which State?  AZ CA NV WA	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
City, State, Zip Columbia Guy OH 43201  Phone Number Fax		Analys	ired
CINAC/ DI	P.O. # 2   \$0 3 Job # 6	6005862 2 2 20 1 1	Required QC Level?
City, State, Zip  City, State,	Phone # () 726 - 7311 Fax #	(524 C (3)	is (
Matrix* Sampled by See Key		Total and type of Containers	Global ID #
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950 -00	2 EB-3-2/4/15	X X	EQUIP BLANC
. 67	773-3-2/4/10	W <sub>2</sub> ×	TRIP BLANE
ADDITIONAL INSTRUCTIONS:			
Signature	Print Name	Company	Date
Relinquished by Management of the second of	MARCO RENJOM	INSIGHT EEC. IM	2/4/12/130
Received by	Anthony Stalk	Alph Anytical	2/4/10 1130
ab.t.	Anthon Stack	Apply tolytical	2/4/10 1/3 h
Relinquished by Mapath (A Cox	Klizabeth HdCox	Clipha	25-10 1467
Received by			
*Key: AQ - Aqueous SO - Soil WA - Waste	ste OT - Other AR - Air **: L-Liter	V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass	ass P-Plastic OT-Other

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:** 19-Feb-10

David Conner Battelle Memorial Institute

3990 Old Town Ave San Diego CA 92110

San Diego, CA 92110 (818) 393-2808 Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

BMI10020971

Cooler Temp:

4°C

Matrix	Client's Sample ID	Alpha's Sample ID
Aqueous	MW-20-5	10020971-01A
Aqueous	MW-20-4	10020971-02A
Aqueous	MW-20-3	10020971-03A
Aqueous	MW-20-2	10020971-04A
Aqueous	MW-20-1	10020971-05A
Aqueous	EB-5-2/8/10	10020971-06A
Aqueous	TB-5-2/8/10	10020971-07A
Aqueous	MW-17-4	10020971-08A
Aqueous	MW- 17-3	10020971-09A
Aqueous	MW-17-2	10020971-10A
Aqueous	EB-4-2/5/10	10020971-11A
Aqueous	TB-4-2/5/10	10020971-12A

### **Manually Integrated Analytes**

Alpha's Sample ID	Test Reference	Analyte
10020971-04A	EPA Method 314.0	Perchlorate
10020971-09A	EPA Method 314.0	Perchlorate
10020971-10A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Saulner

Walter Hinkows



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/09/10

Job:

G005862/JPL Groundwater Monitoring

### Perchlorate by Ion Chromatography EPA Method 314.0

				· · ·	
	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-20-5 Lab ID: BMI10020971-01A Date Sampled 02/08/10 07:56	Perchlorate	ND	1.00 μg/L	02/11/10 13:07	02/11/10 21:07
Client ID: MW-20-4 Lab ID: BMI10020971-02A Date Sampled 02/08/10 08:24	Perchlorate	ND	1.00 μg/L	02/11/10 13:07	02/11/10 21:26
Client ID: MW-20-3 Lab ID: BMI10020971-03A Date Sampled 02/08/10 08:57	Perchlorate	ND	1.00 μg/L	02/11/10 13:07	02/11/10 21:44
Client ID: <b>MW-20-2</b> Lab ID: BMI10020971-04A Date Sampled 02/08/10 09:22	Perchlorate	2.99	1.00 µg/L	02/11/10 13:07	02/11/10 22:39
Client ID: MW-20-1 Lab ID: BMI10020971-05A Date Sampled 02/08/10 09:47	Perchlorate	ND	1.00 μg/L	02/11/10 13:07	02/11/10 23:35
Client ID: EB-5-2/8/10 Lab ID: BMI10020971-06A Date Sampled 02/08/10 09:34	Perchlorate	ND	1.00 μg/L	02/11/10 13:07	02/11/10 23:53
Client ID: MW-17-4 Lab ID: BMI10020971-08A Date Sampled 02/05/10 08:10	Perchlorate	ND	1.00 μg/L	02/11/10 13:07	02/12/10 00:11
Client ID: MW- 17-3 Lab ID: BMI10020971-09A Date Sampled 02/05/10 08:45	Perchlorate	10.7	1.00 μg/L	02/11/10 13:07	02/12/10 00:30
Client ID: MW-17-2 Lab ID: BMI10020971-10A Date Sampled 02/05/10 09:15	Perchlorate	4.57	1.00 μg/L	02/11/10 13:07	02/12/10 00:48
Client ID: <b>EB-4-2/5/10</b> Lab ID: BMI10020971-11A Date Sampled 02/05/10 08:59	Perchlorate	ND	1.00 μg/L	02/11/10 13:07	02/12/10 01:07



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ND = Not Detected

Roger Scholl

Kandy Soulmer

Walter Hirihour

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Uff

2/22/10

**Report Date** 



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** 

Phone: (818) 393-2808

Fax: (614) 458-6641

Date Received: 02/09/10

Job:

G005862/JPL Groundwater Monitoring

### Metals by ICPMS EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-20-5</b> Lab ID: BMI10020971-01A Date Sampled 02/08/10 07:56	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:14
Client ID: <b>MW-20-4</b> Lab ID: BMI10020971-02A Date Sampled 02/08/10 08:24	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:20
Client ID: MW-20-3 Lab ID: BMI10020971-03A Date Sampled 02/08/10 08:57	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:26
Client ID: MW-20-2 Lab ID: BMI10020971-04A Date Sampled 02/08/10 09:22	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:32
Client ID: MW-20-1 Lab ID: BMI10020971-05A Date Sampled 02/08/10 09:47	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:37
Client ID: EB-5-2/8/10 Lab ID: BMI10020971-06A Date Sampled 02/08/10 09:34	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 11:41
Client ID: MW-17-4 Lab ID: BMI10020971-08A Date Sampled 02/05/10 08:10	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 11:47
Client ID: MW- 17-3 Lab ID: BMI10020971-09A Date Sampled 02/05/10 08:45	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 11:53
Client ID: MW-17-2 Lab ID: BMI10020971-10A Date Sampled 02/05/10 09:15	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 05:43
Client ID: <b>EB-4-2/5/10</b> Lab ID: BMI10020971-11A Date Sampled 02/05/10 08:59	Chromium (Cr)	ND	0.0050 mg/L	02/10/10 16:36	02/12/10 06:11



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ND = Not Detected

Roger Scholl Kandy Salter Walter

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman. Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

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2/22/10



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## **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Attn: David Conner Phone: (818) 393-2808

(614) 458-6641

# Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated		
	Parameter	Estimated	Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID: MW-20-5 Lab ID: BMI10020971-01A Date Received: 02/09/10 Date Sampled: 02/08/10 07:56	Sulfur dioxide	15	2.0 μg/L	02/11/10 14:57	02/11/10 14:57
Client ID: MW-20-4 Lab ID: BMI10020971-02A Date Received: 02/09/10 Date Sampled: 02/08/10 08:24	Sulfur dioxide	16	2.0 μg/L	02/11/10 15:19	02/11/10 15:19
Client ID: MW-20-3 Lab ID: BMI10020971-03A Date Received: 02/09/10 Date Sampled: 02/08/10 08:57	Sulfur dioxide	9.4	2.0 μg/L	02/11/10 15:41	02/11/10 15:41
Client ID: MW-20-2 Lab ID: BMI10020971-04A  Date Received: 02/09/10  Date Sampled: 02/08/10 09:22	Sulfur dioxide	3.0	2.0 μg/L	02/11/10 16:04	02/11/10 16:04
Client ID : MW-20-1  Lab ID : BMI10020971-05A  Date Received : 02/09/10  Date Sampled : 02/08/10 09:47	Sulfur dioxide	4.6	2.0 μg/L	02/11/10 16:26	02/11/10 16:26
Client ID : <b>EB-5-2/8/10</b> Lab ID : BMI10020971-06A  Date Received : 02/09/10  Date Sampled : 02/08/10 09:34	*** None Found ***	ND	2.0 μg/L	02/11/10 12:21	02/11/10 12:21
Client ID: TB-5-2/8/10 Lab ID: BMI10020971-07A Date Received: 02/09/10 Date Sampled: 02/08/10 00:00	*** None Found ***	ND	2.0 μg/L	02/11/10 11:58	02/11/10 11:58
Client ID: MW-17-4  Lab ID: BMI10020971-08A  Date Received: 02/09/10  Date Sampled: 02/05/10 08:10	*** None Found ***	ND	2.0 μg/L	02/11/10 16:48	02/11/10 16:48
Client ID: MW- 17-3  Lab ID: BMI10020971-09A  Date Received: 02/09/10  Date Sampled: 02/05/10 08:45	*** None Found ***	ND	2.0 μg/L	02/11/10 17:10	02/11/10 17:10



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Client ID: MW-17-2

Lab ID: BMI10020971-10A \* \* \* None Found \* \* \*

ND

 $2.0~\mu g/L$ 

02/11/10 17:32 02/11/10 17:32

Date Received: 02/09/10

Date Sampled: 02/05/10 09:15

Client ID:

EB-4-2/5/10

Lab ID:

BMI10020971-11A

\* \* \* None Found \* \* \*

ND

 $2.0 \mu g/L$ 

02/11/10 13:05 02/11/10 13:05

Date Received: 02/09/10

Date Sampled: 02/05/10 08:59

Client ID:

TB-4-2/5/10

Lab ID:

BMI10020971-12A

\* \* \* None Found \* \* \*

ND

 $2.0~\mu g/L$ 

02/11/10 12:43 02/11/10 12:43

Date Received: 02/09/10

Date Sampled: 02/05/10 00:00

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer  $Sacramento, CA • (916)\ 366-9089\ /\ Las\ Vegas, NV • (702)\ 736-7522\ /\ Carson, CA • (310)\ 803-7761\ /\ info@alpha-analytical.com$ 

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date

Page 1 of 1



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-01A

Client I.D. Number: MW-20-5

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/08/10 07:56

Received: 02/09/10

Extracted: 02/11/10 14:57 Analyzed: 02/11/10 14:57

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)		2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	96	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	μα/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Saulur

Walter Finden

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-02A

Client I.D. Number: MW-20-4

**David Conner** Attn:

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/08/10 08:24

Received: 02/09/10

Extracted: 02/11/10 15:19 Analyzed: 02/11/10 15:19

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	94	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	104	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
34	1,2-Dibromoethane (EDB)	ND		1.0	μg/L					
		1								

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

Tetrachloroethene

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0.50

μg/L

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Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-03A

Client I.D. Number: MW-20-3

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/08/10 08:57

Received: 02/09/10

Extracted: 02/11/10 15:41 Analyzed: 02/11/10 15:41

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	Reporting I	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	96	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	ua/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Salver

Walter Hinkow

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

µg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/22/10 Report Date



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-04A

Client I.D. Number: MW-20-2

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/08/10 09:22

Received: 02/09/10

Extracted: 02/11/10 16:04 Analyzed: 02/11/10 16:04

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND ·	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	, ND	0.50	μg/L
24	1,2-Dichloropropane	· ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	0.99		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	95	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	104	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Soulier

Walter Hindrey

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Office Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-05A

Client I.D. Number: MW-20-1

**David Conner** Attn:

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/08/10 09:47

Received: 02/09/10

Extracted: 02/11/10 16:26 Analyzed: 02/11/10 16:26

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q 1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0		43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	µg/L
25	Trichloroethene	ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	97	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	104	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L					
33	Dibromochloromethane	ND	0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples. **Report Date** 

Page 1 of 1



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Client I.D. Number: EB-5-2/8/10

Attn:

**David Conner** Phone: (818) 393-2808

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-06A

Sampled: 02/08/10 09:34 Received: 02/09/10

Extracted: 02/11/10 12:21 Analyzed: 02/11/10 12:21

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	93	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	105	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
~ 4	4.0 Dit (L. (CDD)	l			. •					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-07A

Client I.D. Number: TB-5-2/8/10

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/08/10 00:00

Received: 02/09/10

Extracted: 02/11/10 11:58 Analyzed: 02/11/10 11:58

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q 1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND.	0.50	μg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propvlbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	µg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	92	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	102	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	105	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L					
33	Dibromochloromethane	ND	0.50	μg/L					
		1							

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Souther

Dalter Hinhun

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-08A

Client I.D. Number: MW-17-4

Attn: David Conner

Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/05/10 08:10

Received: 02/09/10

Extracted: 02/11/10 16:48 Analyzed: 02/11/10 16:48

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	Limit		Compound	Concentration	Reporting L	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlofobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	µg/L
25	Trichloroethene	0.91		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	96	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	104	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/22/10 **Report Date** 

Page 1 of 1



Alpha Analytical Number: BMI10020971-09A

# Alpha Analytical, Inc.

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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Client I.D. Number: MW-17-3

Attn:

**David Conner** Phone: (818) 393-2808 (614) 458-6641

Fax: G005862/JPL Groundwater Monitoring

Sampled: 02/05/10 08:45

Received: 02/09/10

Extracted: 02/11/10 17:10

Analyzed: 02/11/10 17:10

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Rep	orting	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1.4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	0.50		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	95	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	105	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L				, ,	
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

35 Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

µg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-10A

Client I.D. Number: MW-17-2

Attn: **David Conner** Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/05/10 09:15

Received: 02/09/10

Extracted: 02/11/10 17:32 Analyzed: 02/11/10 17:32

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	1.0		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	94	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

0.67

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date

Page 1 of 1



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-11A

Client I.D. Number: EB-4-2/5/10

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/05/10 08:59

Received: 02/09/10

Extracted: 02/11/10 13:05 Analyzed: 02/11/10 13:05

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	eporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND.	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μα/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	. 58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	97	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			'	, ,	
33	Dibromochloromethane	ND		0.50	μg/L					
24	1.0 Dibromosthone (CDD)	A I ID			. • "					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Saulur

Walter Hinkman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/22/10



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10020971-12A

Client I.D. Number: TB-4-2/5/10

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/05/10 00:00

Received: 02/09/10

Extracted: 02/11/10 12:43 Analyzed: 02/11/10 12:43

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBCi	P) ND	2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	95	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	101	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
0.4	4.0 Dile (EDD)									

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachioroethene

Roger Scholl Kandy Soulmer

Walter Hinkon

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (016) 366, 9099 / Lee Vegre, NV • (700) 726, 7532 / George, CA • (10) 903, 7761 / infe@alpha.com/science.

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Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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1.0

μg/L



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# **VOC Sample Preservation Report**

Work Order: BMI10020971 Job: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
10020971-01A	MW-20-5	Aqueous	2
10020971-02A	MW-20-4	Aqueous	2
10020971-03A	MW-20-3	Aqueous	2
10020971-04A	MW-20-2	Aqueous	2
10020971-05A	MW-20-1	Aqueous	2
10020971-06A	EB-5-2/8/10	Aqueous	2
10020971-07A	TB-5-2/8/10	Aqueous	2
10020971-08A	MW-17-4	Aqueous	2
10020971-09A	MW- 17-3	Aqueous	2
10020971-10A	MW-17-2	Aqueous	2
10020971-11A	EB-4-2/5/10	Aqueous	2
10020971-12A	TB-4-2/5/10	Aqueous	2



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<b>Date:</b> 19-Feb-10	(	QC S	ummar	y Repor	t				<b>Work Ord</b> 1002097	
Method Blank		Type: N	MBLK Te	est Code: EF	A Met	thod 200.8				
File ID: 021110.B\160SMPL.D\			Ba	atch ID: 2357	72K		Analys	sis Date:	02/12/2010 04:12	
Sample ID: MB-23572	Units : <b>mg/L</b>		Run ID: IC	P/MS_1002 <sup>-</sup>	12C		Prep [	Date:	02/10/2010 16:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	C LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Chromium (Cr)	ND	0.00	5							
Laboratory Control Spike		Type: L	CS Te	est Code: EF	A Met	thod 200.8				-
File ID: 021110.B\161_LCS.D\			Ba	atch ID: <b>2357</b>	′2K		Analys	sis Date:	02/12/2010 04:18	
Sample ID: LCS-23572	Units : mg/L		Run ID: IC	P/MS_10021	12C		Prep [	Date:	02/10/2010 16:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Chromium (Cr)	0.0489	0.00	5 0.05		98	80	120			
Sample Matrix Spike		Type: N	/IS Te	est Code: EF	A Met	thod 200.8				
File ID: 021110.B\165SMPL.D\			Ba	atch ID: 2357	2K		Analys	sis Date:	02/12/2010 04:40	
Sample ID: 10020506-02AMS	Units : mg/L		Run ID: IC	P/MS_10021	I2C		Prep [	Date:	02/10/2010 16:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	C LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Chromium (Cr)	0.0464	0.00	5 0.05	0	93	80	120			
Sample Matrix Spike Duplicate		Type: N	ASD Te	est Code: EF	A Met	hod 200.8				
File ID: 021110.B\166SMPL.D\			Ba	atch ID: 2357	'2K		Analys	sis Date:	02/12/2010 04:46	
Sample ID: 10020506-02AMSD	Units : mg/L		Run ID: IC	P/MS_10021	12C		Prep [	Date:	02/10/2010 16:36	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Chromium (Cr)	0.0437	0.005	5 0.05	0	87	80	120	0.046	35 5.9(20)	

#### Comments

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 19-Feb-10		(	QC S	umma	ry Repoi	rt			<b>Work Ord</b> 1002097	
Method Bla	nk		Type: I		Test Code: E		thod 314.0	Analysis Date	e: 02/11/2010 14:04	
Sample ID:	MB-23577	Units : µg/L		Run ID: I	C_3_100211	A		Prep Date:	02/11/2010 13:07	
Analyte		Result	PQL				LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Perchlorate		ND		1						
Laboratory	Fortified Blank		Type: L	.FB	Test Code: E	PA Met	thod 314.0			
File ID: <b>15</b>				E	Batch ID: <b>235</b>	77		Analysis Date	e: 02/11/2010 14:22	
Sample ID:	LFB-23577	Units : µg/L		Run ID: I	C_3_100211/	4		Prep Date:	02/11/2010 13:07	
Analyte		Result	PQL	SpkVa	l SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Perchlorate		25		2 25	5	100	85	115		
Sample Mat	rix Spike		Type: L	.FM	Γest Code: <b>Ε</b> Ι	PA Met	hod 314.0			
File ID: <b>40</b>				E	Batch ID: <b>235</b>	77		Analysis Date	e: 02/11/2010 22:03	
Sample ID:	10020971-03ALFM	Units : <b>µg/L</b>		Run ID: I	C_3_100211 <i>i</i>	4		Prep Date:	02/11/2010 13:07	
Analyte		Result	PQL	SpkVa	l SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	efVal %RPD(Limit)	Qual
Perchlorate	-	30.4	2	2 25	5 0	122	80	120		M1
Sample Mat	rix Spike Duplicate		Type: L	.FMD	Fest Code: El	PA Met	hod 314.0			
File ID: 41				E	Batch ID: <b>235</b>	77		Analysis Date	e: 02/11/2010 22:21	
Sample ID:	10020971-03ALFMD	Units : µg/L		Run ID: I	C_3_100211/	4		Prep Date:	02/11/2010 13:07	
Analyte		Result	PQL				LCL(ME)	UCL(ME) RPDRe	rVal %RPD(Limit)	Qual
Perchlorate		27.7	2	2 25	0	111	80	120 30.	43 9.3(15)	

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

M1 = Matrix spike recovery was high, the method control sample recovery was acceptable.



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<b>Date:</b> 19-Feb-10		(	QC S	umm	ary Report				<b>Work Ord</b> 1002097	
Method Bla	nk		Type N	MBLK	Test Code: EPA	Method S	SW8260E	3		
File ID: 10021	1107.D				Batch ID: MS15V	V0211M		Analysis Date:	02/11/2010 10:29	
Sample ID:	MBLK MS15W0211M	Units : µg/L		Run ID	: MSD_15_100211	В		Prep Date:	02/11/2010 10:29	
Analyte		Result	PQL		val SpkRefVal %F		(ME) UC	L(ME) RPDRef	Val %RPD(Limit)	Qua
Dichlorodifluo	romethane	ND	0.5				, ,		· · · · · · · · · · · · · · · · · · ·	
Chloromethan		ND ND	0.0							
Vinyl chloride		ND	0.5							
Chloroethane		ND	0.5							
Bromomethan		ND	•							
Trichlorofluoro		ND	0.5							
1,1-Dichloroet		ND	0.5							
Dichlorometha Freon-113	ane	ND								
trans-1,2-Dich	loroethene	ND ND	0. <del>.</del> 0. <del>.</del>							
•	ityl ether (MTBE)	ND ND	0.5							
1.1-Dichloroet		ND	0.5							
2-Butanone (N		ND	10							
cis-1,2-Dichlo		ND	0.8							
Bromochloron	nethane	ND	0.5							
Chloroform		ND	0.5							
2,2-Dichloropi		ND	0.8							
1,2-Dichloroe		ND ND	0.8 0.8							
1,1-Dichlorop		ND ND	0.8							
Carbon tetrac	•	ND	0.5							
Benzene		ND	0.5							
Dibromometh	ane	ND	0.5							
1,2-Dichlorop		ND	0.5							
Trichloroether		ND	0.5							
Bromodichlor		ND	0.8							
cis-1,3-Dichlo	entanone (MIBK)	ND ND	2.5 0.5							
trans-1,3-Dich		ND ND	0.0							
1,1,2-Trichlor		ND	0.5							
Toluene		ND	0.5							
1,3-Dichlorope	ropane	ND	0.							
Dibromochlor		ND	0.5	5						
1,2-Dibromoe		ND		-						
Tetrachloroetl		ND	0.4							
1,1,1,2-Tetrac		ND ND	0.5							
Ethylbenzene		ND ND	0.9 0.9							
m,p-Xylene	•	ND	0.9							
Bromoform		ND	0.8							
Styrene		ND	0.5							
o-Xylene		ND	0.8							
1,1,2,2-Tetrac		ND	0.8							
1,2,3-Trichlore Isopropylbenz		ND ND	0.1							
Bromobenzer		ND ND	0.t 0.t							
n-Propylbenze		ND	0.0							
4-Chlorotolue		ND	0.9							
2-Chlorotolue		ND	0.9							
1,3,5-Trimeth	•	ND	0.9	5						
tert-Butylbenz		ND	0.9							
1,2,4-Trimeth		ND	0.9							
sec-Butylbenz 1,3-Dichlorob		ND	0.9							
1,3-Dichlorob		ND ND	0.9 0.9							
4-Isopropyitol		ND ND	0.9							
1,2-Dichlorob		ND	0.9							
n-Butylbenzer		ND	0.9							
	3-chloropropane (DBCP)	ND	2.							
1,2,4-Trichlore	obenzene	ND								
Naphthalene		ND								
Hexachlorobu		ND								
1,2,3-Trichlore	obenzene nloroethane-d4	ND 9.41	•	-	10	94 7	70	130		
	noroetnane-04 n-d8	9.41 9.87						130		



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<b>Date:</b> 19-Feb-10	(	QC Su	mmary R	eport			<b>Work Ordo</b> 10020971	
Surr: 4-Bromofluorobenzene	10.2		10	102	70	130		<del></del>
Laboratory Control Spike	· · · · · · · · · · · · · · · · · · ·	Type LC	S Test C	ode: EPA Meth	od SW82	260B		
File ID: <b>10021105.D</b>		•		D: MS15W021			ate: <b>02/11/2010 09:28</b>	
Sample ID: LCS MS15W0211M	Units : µg/L	F	Run ID: MSD_1			Prep Date:	02/11/2010 09:28	
Analyte	Result	PQL	SpkVal Spk	RefVal %REC	LCL(ME)	UCL(ME) RPDI	RefVal %RPD(Limit)	Qual
Dichlorodifluoromethane	8.84	1	10	88	70	130		
Chloromethane Vinyl chloride	7.57 10.3	2 1	10 10	76 103	70 70	130 130		
Chloroethane	8.9	1	10	89	70	130		
Bromomethane	6.59	2	10	66	70(70)	130		L50
Trichlorofluoromethane	10.1	1	10	101	70	130		
1,1-Dichloroethene Dichloromethane	10.6 10.6	1 2	10 10	106 106	70 70	130 130		
trans-1,2-Dichloroethene	10.9	1	10	109	70	130		
Methyl tert-butyl ether (MTBE)	12.4	0.5	10	124	70	130		
1,1-Dichloroethane	10.3	1	10	103	70 70	130		
cis-1,2-Dichloroethene Bromochloromethane	11.7 12.4	1 1	10 10	117 124	70 70	130 130		
Chloroform	9.98	1	10	99.8	70	130		
2,2-Dichloropropane	10.9	1	10	109	70	130		
1,2-Dichloroethane 1,1,1-Trichloroethane	11.6 10.9	1 1	10 10	116 109	70 70	130 130		
1,1-Dichloropropene	10.9	1	10	109	70 70	130		
Carbon tetrachloride	11	1	10	110	70	130		
Benzene	10.4	0.5	10	104	70 70	130		
Dibromomethane 1,2-Dichloropropane	12.7 11.5	1 1	10 10	127 115	70 70	130 130		
Trichloroethene	11	1	10	110	70	130		
Bromodichloromethane	12.2	1	10	122	70	130		
cis-1,3-Dichloropropene trans-1,3-Dichloropropene	11.2 11.7	1 1	10 10	112 117	70 70	130 130		
1,1,2-Trichloroethane	12.4	1	10	124	70 70	130		
Toluene	10.1	0.5	10	101	70	130		
1,3-Dichloropropane	12.6	1	10	126	70 70	130		
Dibromochloromethane 1,2-Dibromoethane (EDB)	12.4 25.8	1 2	10 20	124 129	70 70	130 130		
Tetrachloroethene	10.9	1	10	109	70	130		
1,1,1,2-Tetrachloroethane	11.6	1	10	116	70	130		
Chlorobenzene Ethylbenzene	10.4 10	1 0.5	10 10	104 100	70 70	130 130		
m,p-Xylene	10.8	0.5	10	108	70	130		
Bromoform	11.9	1	10	119	70	130		
Styrene	11.8	1	10	118	70	130		
o-Xylene 1,1,2,2-Tetrachloroethane	10.8 11.4	0.5 1	10 10	108 114	70 70	130 130		
1,2,3-Trichloropropane	22.3	2	20	111	70	130		
Isopropylbenzene	10.1	1	10	101	70	130		
Bromobenzene n-Propylbenzene	10.4 9.9	1 1	10 10	104 99	70 70	130 130		
4-Chlorotoluene	10.4	1	10	104	70	130		
2-Chlorotoluene	10.1	1	10	101	70	130		
1,3,5-Trimethylbenzene	9.68	1	10	97	70	130		
tert-Butylbenzene 1,2,4-Trimethylbenzene	9.59 9.79	1	10 10	96 98	70 70	130 130		
sec-Butylbenzene	10.1	1	10	101	70	130		
1,3-Dichlorobenzene	10.1	1	10	101	70	130		
1,4-Dichlorobenzene	9.74	1	10	97	70 70	130 130		
4-Isopropyltoluene 1,2-Dichlorobenzene	9.63 9.73	1	10 10	96 97	70 70	130		
n-Butylbenzene	9.85	1	10	99	70	130		
1,2-Dibromo-3-chloropropane (DBCP)	56.8	3	50	114	70	130		
1,2,4-Trichlorobenzene Naphthalene	10.6 12.3	2 2	10 10	106 123	70 70	130 130		
Hexachlorobutadiene	17.1	2	20	123 85	70	130		
1,2,3-Trichlorobenzene	11.1	2	10	111	70	130		
Surr: 1,2-Dichloroethane-d4	9.45		10	95 04	70 70	130		
Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	9.35 10.8		10 10	94 108	70 70	130 130		
	. 5.0							



Surr: 4-Bromofluorobenzene

53.9

# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order: Date: **QC** Summary Report 19-Feb-10 Type MS Test Code: EPA Method SW8260B Sample Matrix Spike File ID: 10021108.D Batch ID: MS15W0211M Analysis Date: 02/11/2010 10:51 Prep Date: 02/11/2010 10:51 Sample ID: 10020971-03AMS Units: µq/L Run ID: MSD 15 100211B SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Analyte **PQL** Result Dichlorodifluoromethane 38.7 2.5 Chloromethane 36.7 Vinyl chloride 50.1 2.5 Chloroethane 41.8 2.5 Bromomethane 26.3 Trichlorofluoromethane 48.3 2.5 1.1-Dichloroethene 99.9 2.5 Dichloromethane 49.8 trans-1,2-Dichloroethene 2.5 Methyl tert-butyl ether (MTBE) 55.4 1.3 1.1-Dichloroethane 48.3 2.5 cis-1,2-Dichloroethene 2.5 53.8 Bromochloromethane 58.9 2.5 Chloroform 45.5 2.5 2.2-Dichloropropane 50.2 2.5 1,2-Dichloroethane 53.1 2.5 1,1,1-Trichloroethane 50.8 2.5 1.1-Dichloropropene 51.2 2.5 Carbon tetrachloride 50.8 2.5 48.2 Benzene 1.3 Dibromomethane 56.6 2.5 1,2-Dichloropropane 52.1 2.5 Trichloroethene 2.5 50.2 Bromodichloromethane 55.2 2.5 cis-1,3-Dichloropropene 49.5 2.5 trans-1.3-Dichloropropene 2.5 51.7 1,1,2-Trichloroethane 55.1 2.5 Toluene 48.2 1.3 1.3-Dichloropropane 58.5 2.5 Dibromochloromethane 57.2 2.5 1,2-Dibromoethane (EDB) Tetrachloroethene 51.3 2.5 1,1,1,2-Tetrachloroethane 54.2 2.5 Chlorobenzene 49.4 2.5 Ethylbenzene 47.6 1.3 m,p-Xylene 50.7 1.3 Bromoform 54.5 2.5 Styrene 55.5 2.5 o-Xylene 52.2 1.3 1,1,2,2-Tetrachloroethane 2.5 1,2,3-Trichloropropane Isopropylbenzene 46.8 2.5 Bromobenzene 47.2 2.5 n-Propylbenzene 2.5 45.2 4-Chlorotoluene 2.5 2-Chlorotoluene 46.3 2.5 1,3,5-Trimethylbenzene 2.5 tert-Butylbenzene 44.5 2.5 1,2,4-Trimethylbenzene 44.6 2.5 sec-Butylbenzene 46.9 2.5 1,3-Dichlorobenzene 46.2 2.5 1.4-Dichlorobenzene 2.5 នន 44.2 4-Isopropyltoluene 44.4 2.5 1,2-Dichlorobenzene 43.6 2.5 n-Butylbenzene 43.6 2.5 1,2-Dibromo-3-chloropropane (DBCP) 1.2.4-Trichlorobenzene 44.7 Naphthalene 46.9 Hexachlorobutadiene 78.6 1.2.3-Trichlorobenzene 44.7 Surr: 1,2-Dichloroethane-d4 46.2 Surr: Toluene-d8 47.9 



Surr: 4-Bromofluorobenzene

54.5

# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order: Date: QC Summary Report 19-Feb-10 10020971 Type MSD Test Code: EPA Method SW8260B Sample Matrix Spike Duplicate File ID: 10021109.D Batch ID: MS15W0211M Analysis Date: 02/11/2010 11:14 Prep Date: 02/11/2010 11:14 Sample ID: 10020971-03AMSD Units: µg/L Run ID: MSD 15 100211B SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) **PQL** Qual Analyte Result Dichlorodifluoromethane 13 167 38.73 5.7(20) 2.5 50 82 41 Chloromethane 50 0 78 28 145 36.69 6.4(20)39.1 10 50.11 10.1(20) Vinvl chloride 55.4 2.5 50 0 111 43 134 154 41.75 Chloroethane 2.5 89 39 6.1(20)44.4 50 0 26.32 12.6(20) **Bromomethane** 29.9 10 50 0 60 19 176 Trichlorofluoromethane 50.8 2.5 0 102 34 160 48.29 5.1(20) 50 3.9(20) 1.1-Dichloroethene 60 49.96 130 51.9 2.5 50 n 104 68 49.75 1.0(20)Dichloromethane 50.3 10 50 0 101 130 51.01 2.5(20)trans-1,2-Dichloroethene 52.3 2.5 50 0 105 63 130 Methyl tert-butyl ether (MTBE) 1.0(20) 50 112 56 141 55.4 56 1.3 n 1,1-Dichloroethane 49.8 2.5 50 0 99.7 130 48.33 3.1(20) 70 3.6(20)cis-1,2-Dichloroethene 130 53.8 55.8 2.5 50 112 0.3(20)Bromochloromethane 58.7 2.5 50 0 117 70 130 58.87 2.5(20) Chloroform 46.6 2.5 50 93 67 130 45.49 2.2-Dichloropropane 104 30 152 50.15 3.4(20) 2.5 50 51.9 n 53.14 1,2-Dichloroethane 0.6(20)52.8 2.5 50 0 106 135 59 50.76 3.3(20) 1,1,1-Trichloroethane 52.5 2.5 50 0 105 137 1.1-Dichloropropene 2.5 50 n 106 63 130 51.18 3.6(20)53.1 4.7(20)Carbon tetrachloride 50 147 50.83 53.3 2.5 50 107 48.23 2.6(20) 99 67 130 Benzene 49.5 1.3 50 0 56.63 1.8(20) Dibromomethane 55.6 2.5 0 111 69 133 50 1.2-Dichloropropane 53.8 2.5 50 108 69 130 52.09 3.3(20)50.21 3.4(20) 69 130 Trichloroethene 2.5 50 0 104 51.9 Bromodichloromethane 56 2.5 50 0 112 66 134 55.19 1.5(20)49.52 0.1(20)cis-1,3-Dichloropropene 49.6 2.5 50 99 63 130 51.74 0.9(20)trans-1.3-Dichloropropene 51.3 2.5 50 n 103 66 131 130 55.05 0.9(20)1.1.2-Trichloroethane 54.6 2.5 50 0 109 3.1(20) 66 130 48.16 Toluene 49.7 1.3 50 0 99 1,3-Dichloropropane 116 70 130 58.54 1.1(20) 57.9 2.5 50 O 57.16 Dibromochloromethane 57 2.5 50 114 70 130 0.2(20)119.9 1.5(20) 1.2-Dibromoethane (EDB) 118 100 118 70 130 5 0 61 134 4.8(20)Tetrachloroethene 53.8 2.5 50 0 108 51.29 70 0.3(20) 1,1,1,2-Tetrachloroethane 54.3 2.5 50 0 109 130 54.16 50.5 70 130 49.4 2.2(20)Chlorobenzene 2.5 50 0 101 Ethylbenzene 68 130 47.56 4.1(20)49.5 1.3 50 99 50.66 4.5(20)64 130 m,p-Xylene 53 1.3 50 0 106 Bromoform 64 138 54.46 0.9(20)2.5 50 n 110 55 56.9 Styrene 2.5 50 114 69 130 55.53 2.5(20)3.0(20) 70 52.16 o-Xylene 108 130 53.8 1.3 50 0 52.03 0.1(20)1.1.2.2-Tetrachloroethane 52.1 2.5 50 0 104 65 131 1,2,3-Trichloropropane 10 100 0 101 70 130 103.5 2.4(20) 101 Isopropylbenzene 99.9 64 138 46.82 6.5(20)50 2.5 50 0 70 130 47.2 3.7(20) Bromobenzene 49 2.5 50 0 98 n-Propylbenzene 66 132 45.24 7.5(20) 48.8 2.5 50 0 98 6.8(20)4-Chlorotoluene 514 2.5 50 0 103 70 130 47.99 46.26 6.5(20)2-Chlorotoluene 50 0 99 70 130 49.4 2.5 1,3,5-Trimethylbenzene 43.97 6.3(20)94 66 136 46.8 2.5 50 0 tert-Butylbenzene 137 44.47 6.5(20)47.4 2.5 50 0 95 65 6.3(20) 1,2,4-Trimethylbenzene 47.5 2.5 50 0 95 65 137 44.6 6.2(20)sec-Butylbenzene 0 99.8 66 134 46.87 49.9 2.5 50 1,3-Dichlorobenzene 49.1 2.5 50 0 98 70 130 46.17 6.1(20)70 130 44.17 5.5(20) 1,4-Dichlorobenzene 2.5 93 46.7 50 0 4-Isopropyltoluene 2.5 0 96 66 137 44.42 7.7(20)48 50 5.4(20) 1,2-Dichlorobenzene 46 2.5 50 0 92 70 130 43.6 n-Butylbenzene 47.6 2.5 50 n 95 60 142 43.61 8.8(20) 1,2-Dibromo-3-chloropropane (DBCP) 100 67 130 246.4 1.5(20)250 15 250 0 10.0(20) 44.71 1,2,4-Trichlorobenzene 49.4 10 50 0 99 61 137 46.91 11.1(20) Naphthalene 52.4 105 40 167 10 50 0 9.1(20) Hexachlorobutadiene 100 86 61 130 78.55 86.1 10 0 44.74 1.2.3-Trichlorobenzene 12.1(20) 50.5 10 50 0 101 51 144 130 Surr: 1,2-Dichloroethane-d4 44.8 50 90 70 Surr: Toluene-d8 48 50 96 70 130

109

50

70

130



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:** 19-Feb-10

# QC Summary Report

Work Order: 10020971

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag. L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

# Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 TEL: (775) 355-1044 FAX: (775) 355-0406

Client:

Report Attention

Phone Number

**EMail Address** 

(818) 393-2808 x (614) 424-4899

Suite C-205 3990 Old Town Ave Battelle Memorial Institute

Client's COC #: 24132, 28875 San Diego, CA 92110

Page: 1 of 2

WorkOrder: BMIS10020971

Report Due By: 5:00 PM On: 23-Feb-10

EDD Required: Yes

cutiee@batelle.org connerd@battelle.org

waltons@battelle.org

Sampled by: Client

Cooler Temp

4°C

Samples Received 09-Feb-10

Date Printed 09-Feb-10

Job: G005862/JPL Groundwater Monitoring:

Shane Walton Betsy Cutie

(614) 424-4117 x

QC Level: DS3 = DOD QC Required : Final Rpt, MBLK, LCS, MS/MSD With Surrogates

BMI10020971-10A MW-17-2 BMI10020971-09A MW- 17-3 BMi10020971-08A MW-17-4 BMI10020971-07A TB-5-2/8/10 BMI10020971-06A EB-5-2/8/10 BMI10020971-05A MW-20-1 BMI10020971-03A MW-20-3 BMI10020971-02A MW-20-4 BMI10020971-01A Sample ID BMI10020971-04A MW-20-2 MW-20-5 Client Sample ID Matrix Date ð à å Š å å å Š AQ 02/08/10 07:56 Ś 02/05/10 09:15 02/05/10 08:45 02/05/10 08:10 02/08/10 00:00 02/08/10 09:34 02/08/10 09:47 02/08/10 09:22 02/08/10 08:57 02/08/10 08:24 Collection No. of Bottles Alpha Sub G S Ŋ G Ŋ G Ġ Ç 0 0 0 0 0 0 0 0 0 O ΤAΤ 7 5 5 6 70 6 6 5 5 6 Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate 314\_W METALS\_D VOC\_TIC\_ Ü Ω Ü Ç Ç Ω Ω Ç Ω VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 VOC by 524 VOC by 524 Criteria Criteria VOC\_W Requested Tests Sample Remarks Reno TB 8/25/09 Equip. Blank MS/MSD

Comments:

Security seal intact. Frozen Ice. Temp Blank #7848 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by:	
Renna Vally	Signature
Reyne Valleyo	Print Name
Alpha Analytical, Inc.	Company
2/1/10 2:00	Date/Time

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

# Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

TEL: (775) 355-1044 FAX: (775) 355-0406

Client:

Battelle Memorial Institute

San Diego, CA 92110

Shane Walton

(614) 424-4117 x

waltons@battelle.org

Suite C-205 3990 Old Town Ave

> Report Attention Betsy Cutie David Conner Phone Number (818) 393-2808 x (614) 424-4899 x connerd@battelle.org cutiee@batelle.org EMail Address

Page: 2 of 2

WorkOrder: BMIS10020971

Report Due By: 5:00 PM On: 23-Feb-10

EDD Required: Yes Sampled by: Client

Cooler Temp

Samples Received 09-Feb-10

Date Printed 09-Feb-10

Client's COC #: 24132, 28875 PO: 218013 = DOD QC Required : Final Rpt, MBLK, LCS, MS/MSD With Surrogates Job : G005862/JPL Groundwater Monitoring:

Sample ID BMI10020971-11A EB-4-2/5/10 QC Level: DS3 BMI10020971-12A TB-4-2/5/10 Client Sample ID Matrix Date ð ð 02/05/10 08:59 02/05/10 Collection No. of Bottles Alpha Sub თ 0 0 ΤΑΤ 6 6 Perchlorate 314\_W METALS\_D VOC\_TIC\_ Ω VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC\_W Requested Tests Sample Remarks Reno TB 8/25/09 Equip. Blank

Comments: Security seal intact. Frozen Ice. Temp Blank #7848 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).:

Logged in by:	
Ruge Valley	Signature
Ryn Vides	Print Name
Alpha Analytical, Inc.	Company
3/h/w 20	Date/Time

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

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oer Fax		Fax (775) 355-0406	/ Analyses Required	
BATTECLE /DAVID COMMISS	Po # 2/8 0/3	Job# 4005762	<b>E</b> )	Required QC Level
3990 OLO TILLI AVE. C-DOS	EMail Address		7 60 7.4	/ ' " (") "
5 Q 92	Phone # 726-7311	Fax#		EDD / EDF? YES NO
rix* Sampled by		Total and type of	C I COLL	Global ID #
sampled Sampled Below Lab ID Number ( Office Below )	Sample Description			REMARKS
756 21810 AQ BANIODOUTU-01	MW-20-5	Norm V/ps X	<b>ハ</b> <b>イ</b> <b>ス</b>	
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857	# 10-3	W/P/10 X		MS/MSD
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1	MT8-5- 2/8	8/12   1/4   >	<del></del>	TRIP BLANC
ADDITIONAL INSTRUCTIONS:				
Signature	Print Name		Company	Date Time
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Received by			-	

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

\*Key: AQ - Aqueous

SO - Soil

WA - Waste

OT - Other

AR - Air

\*\*: L-Liter

V-Voa

S-Soil Jar

O-Orbo

T-Tedlar

B-Brass

P-Plastic

OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis

			• • • • • • • • • • • • • • • • • • •
Information:	Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21	Samples Collected From W  C. AZ CA NV  ID OR OTHER	WA Page # 2 of 2
City, State, Zip <u>(タにいれなり)の月 4325</u> / Phone Number Fax		Analyses Required	red
VOT CINVE / 3	P.O. # 218013 Job # 60	G005862 2 2005862 1	Required QC Level:
42110	Phone # (726-721) Fax #	524 Ge G	ESNO
Matrix* Sampled by			Global ID#
Sampled Sampled Below Lab ID Number (Use Only)	Sample Description TAT	Filtered "See below VO (2)	REMARKS
SIO PHILL AG	Mw-17-4 North		
7090	Mw-17-3	* * * *	
9,5	Mw-17-2	XXX	
417-	EB-4-2/5/10	XXX	EQUIP BLANK
- 1 - (0A	7B-4.215/10	X th	mir Beark
ADDITIONAL INSTRUCTIONS:			
Signature	Print Name	Company	Date
Relinquished by The Control of the C	MARIO MENDOZA	INSIGHT ERE	18/
Relinguished by	Authory Stark	ALDIHA ANALYTICAL	100
Received by	Jakes Stelk	ALLIA HALDEN	1/8/10 /173
Relinquished by			
*Key: AQ - Aqueous SO - Soil WA - Waste	te OT - Other AR - Air **: L-Liter	V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass	ss P-Plastic OT-Other

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 19-Feb-10 David Conner

**Battelle Memorial Institute** 

3990 Old Town Ave

San Diego, CA 92110 (818) 393-2808

Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

BMI10021002

**Cooler Temp:** 

4°C

Alpha's Sample ID	Client's Sample ID	Matrix	
10021002-01A	MW-3-4	Aqueous	
10021002-02A	MW-3-3	Aqueous	
10021002-03A	MW-3-2	Aqueous	
10021002-04A	DUPE-3-IQ10	Aqueous	
10021002-05A	MW-4-3	Aqueous	
10021002-06A	MW-4-2	Aqueous	
10021002-07A	MW-4-1	Aqueous	
10021002-08A	EB-6-2/9/10	Aqueous	
10021002-09A	TB-6-2/9/10	Aqueous	

		<del></del>
Alpha's Sample ID	Test Reference	Analyte
,	777 77 77 77 77 77 77 77 77 77 77 77 77	,
10021002-03A	EPA Method 314.0	Perchlorate
10021002-06A	EPA Method 314.0	Perchlorate
10021002-07A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chainof-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner Phone: (818) 393-280

Phone: (818) 393-2808 Fax: (614) 458-6641

Date Received: 02/10/10

Job: G005862/JPL Groundwater Monitoring

# Perchlorate by Ion Chromatography EPA Method 314.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-3-4 Lab ID: BMI10021002-01A Date Sampled 02/09/10 10:35	Perchlorate	ND	1.00 μg/L	02/15/10 11:55	02/15/10 15:48
Client ID: MW-3-3 Lab ID: BMI10021002-02A Date Sampled 02/09/10 11:17	Perchlorate	ND	1.00 µg/L	02/15/10 11:55	02/15/10 16:43
Client ID: MW-3-2 Lab ID: BMI10021002-03A Date Sampled 02/09/10 11:37	Perchlorate	184	10.0 μg/L	02/15/10 11:55	02/16/10 16:27
Client ID: <b>DUPE-3-1Q10</b> Lab ID: BMI10021002-04A Date Sampled 02/09/10 00:00	Perchlorate	ND	1.00 µg/L	02/15/10 11:55	02/15/10 17:20
Client ID: MW-4-3 Lab ID: BMI10021002-05A Date Sampled 02/09/10 08:10	Perchlorate	ND	1.00 μg/L	02/15/10 11:55	02/15/10 17:39
Client ID: <b>MW-4-2</b> Lab ID: BMI10021002-06A Date Sampled 02/09/10 08:32	Perchlorate	2.08	1.00 μg/L	02/15/10 11:55	02/15/10 17:57
Client ID: MW-4-1 Lab ID: BMI10021002-07A Date Sampled 02/09/10 09:02	Perchlorate	4.09	1.00 μg/L	02/15/10 11:55	02/15/10 18:15
Client ID: <b>EB-6-2/9/10</b> Lab ID: BMI10021002-08A Date Sampled 02/09/10 08:50	Perchlorate	ND	1.00 μg/L	02/15/10 11:55	02/15/10 18:34

ND = Not Detected

Roger Scholl Kandy Sulm

Walter Stirikon

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/23/10



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: I

**David Conner** 

Phone: (818) 393-2808

(614) 458-6641

Date Received: 02/10/10

Job:

G005862/JPL Groundwater Monitoring

Metals by ICPMS

EPA Method 200.8

	Er A Wethou 200.8											
	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed							
Client ID: MW-3-4 Lab ID: BMI10021002-01A Date Sampled 02/09/10 10:35	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 03:10	02/18/10 03:10							
Client ID: MW-3-3 Lab ID: BMI10021002-02A Date Sampled 02/09/10 11:17	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 03:16	02/18/10 03:16							
Client ID: <b>MW-3-2</b> Lab ID: BMI10021002-03A Date Sampled 02/09/10 11:37	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 03:21	02/18/10 03:21							
Client ID: <b>DUPE-3-1Q10</b> Lab ID: BMI10021002-04A Date Sampled 02/09/10 00:00	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 03:27	02/18/10 03:27							
Client ID: MW-4-3 Lab ID: BMI10021002-05A Date Sampled 02/09/10 08:10	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 03:32	02/18/10 03:32							
Client ID: <b>MW-4-2</b> Lab ID: BMI10021002-06A Date Sampled 02/09/10 08:32	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 02:47	02/18/10 02:47							
Client ID: MW-4-1 Lab ID: BMI10021002-07A Date Sampled 02/09/10 09:02	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 03:38	02/18/10 03:38							
Client ID: <b>EB-6-2/9/10</b> Lab ID: BMI10021002-08A Date Sampled 02/09/10 08:50	Chromium (Cr)	. ND	0.0050 mg/L	02/18/10 03:44	02/18/10 03:44							

ND = Not Detected

Roger Scholl Kandy San

Walter Finden

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

Job:

ego, CA 92110

Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

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G005862/JPL Groundwater Monitoring

## Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated	Estimated Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID : MW-3-4 Lab ID : BMI10021002-01A Date Received : 02/10/10 Date Sampled : 02/09/10 10:35	Sulfur dioxide	25	2.0 μg/L	02/12/10 13:52	02/12/10 13:52
Client ID: MW-3-3 Lab ID: BMI10021002-02A Date Received: 02/10/10 Date Sampled: 02/09/10 11:17	Sulfur dioxide	4.6	2.0 μg/L	02/12/10 14:15	02/12/10 14:15
Client ID: MW-3-2 Lab ID: BMI10021002-03A Date Received: 02/10/10 Date Sampled: 02/09/10 11:37	*** None Found ***	ND	2.0 μg/L	02/12/10 14:37	02/12/10 14:37
Client ID : DUPE-3-1Q10 Lab ID : BMI10021002-04A  Date Received : 02/10/10 Date Sampled : 02/09/10 00:00	Sulfur dioxide	26	2.0 μg/L	02/12/10 14:59	02/12/10 14:59
Client ID : MW-4-3 Lab ID : BMI10021002-05A Date Received : 02/10/10 Date Sampled : 02/09/10 08:10	Sulfur dioxide	4.8	2.0 μg/L	02/12/10 15:21	02/12/10 15:21
Client ID: MW-4-2 Lab ID: BMI10021002-06A Date Received: 02/10/10 Date Sampled: 02/09/10 08:32	*** None Found ***	ND	2.0 μg/L	02/12/10 15:44	02/12/10 15:44
Client ID : MW-4-1 Lab ID : BMI10021002-07A Date Received : 02/10/10 Date Sampled : 02/09/10 09:02	*** None Found ***	ND	2.0 μg/L	02/12/10 16:06	02/12/10 16:06
Client ID: EB-6-2/9/10 Lab ID: BMI10021002-08A  Date Received: 02/10/10 Date Sampled: 02/09/10 08:50	*** None Found ***	ND	2.0 μg/L	02/12/10 13:30	02/12/10 13:30
Client ID : TB-6-2/9/10 Lab ID : BMI10021002-09A Date Received : 02/10/10 Date Sampled : 02/09/10 00:00	*** None Found ***	ND	2.0 μg/L	02/12/10 13:08	02/12/10 13:08



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Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger Scholl Kandy Saulur

Walter Hirihm

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2/23/10

Report Date

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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-01A

Client I.D. Number: MW-3-4

David Conner Attn:

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/09/10 10:35

Received: 02/10/10

Extracted: 02/12/10 13:52 Analyzed: 02/12/10 13:52

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	µg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chiorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	•	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
34	1,2-Dibromoethane (EDB)	ND		1.0	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

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μg/L

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Report Date Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-02A

Client I.D. Number: MW-3-3

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/09/10 11:17

Received: 02/10/10 Extracted: 02/12/10 14:15 Analyzed: 02/12/10 14:15

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Santour

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μg/L

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2/23/10 Report Date

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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-03A

Client I.D. Number: MW-3-2

David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/09/10 11:37

Received: 02/10/10

Extracted: 02/12/10 14:37 Analyzed: 02/12/10 14:37

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	g Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND	0.50	) µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	) µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	) µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	) µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q 1.0	) µg/L	40	Bromoform	0.60	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	) µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	) µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0		43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	) µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	) µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	) µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	) µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	) µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	) µg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	) µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	1.6	0.50	) µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	) µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	) µg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	) µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	) µg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	) µg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	) µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND	0.50	) µg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.50	) µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	2.2	0.50	) µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	5 μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	) µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND	0.50	) µg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	) µg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND	0.50	) µg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	) µg/L					
33	Dibromochloromethane	1.2	0.50	) µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples. Report Date

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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110 Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Client I.D. Number: DUPE-3-1Q10

Alpha Analytical Number: BMI10021002-04A

G005862/JPL Groundwater Monitoring

Sampled: 02/09/10 00:00

Received: 02/10/10

Extracted: 02/12/10 14:59 Analyzed: 02/12/10 14:59

Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	porting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachioroethene

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/23/10 **Report Date** 



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-05A

Client I.D. Number: MW-4-3

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/09/10 08:10

Received: 02/10/10

Extracted: 02/12/10 15:21 Analyzed: 02/12/10 15:21

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	1.5	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	1.0	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND .	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	93	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
	4.0.00	1		4.0						

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur

Walter Findens

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Attn:

David Conner Phone: (818) 393-2808

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-06A

Sampled: 02/09/10 08:32

Received: 02/10/10

Client I.D. Number: MW-4-2

Extracted: 02/12/10 15:44 Analyzed: 02/12/10 15:44

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/Ļ
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	µg/L
25	Trichloroethene	0.88		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	95	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	104	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

µg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples. Report Date



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-07A

Client I.D. Number: MW-4-1

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/09/10 09:02

Received: 02/10/10

Extracted: 02/12/10 16:06 Analyzed: 02/12/10 16:06

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	eporting I	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	95	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
					. •					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur

Walter Hiriham

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date

Page 1 of 1

2/23/10



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: Phone:

David Conner (818) 393-2808

Fax:

(614) 458-6641

Job: G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-08A

Sampled: 02/09/10 08:50

Received: 02/10/10

Extracted: 02/12/10 13:30 Analyzed: 02/12/10 13:30

Client I.D. Number: EB-6-2/9/10

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Report	ting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND	. С	.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	C	.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	C	.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	C	.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	C	.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	C	.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	C	.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	C	.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	C	.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	ug/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	C	.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	C	.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	C	.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	(	.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	C	.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	(	.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	C	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	C	.50	μg/L	56	4-isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	(	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	C	).50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	C	).50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND	(	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	(	).50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND	C	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	Ċ	).50	μg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	(	).50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND	(	).50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND	(	0.50	μg/L					
33	Dibromochloromethane	ND	(	0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

35 Tetrachloroethene

Roger Scholl Kundg Saulur

Walter Hirihour

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Office Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

µg/L

0.50

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021002-09A

Client I.D. Number: TB-6-2/9/10

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/09/10 00:00

Received: 02/10/10

Extracted: 02/12/10 13:08 Analyzed: 02/12/10 13:08

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L.
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	96	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	101	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Santur

Walter Hinkman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

µg/L µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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**Report Date** 



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### **VOC Sample Preservation Report**

Work Order: BMI10021002 Job: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН	
10021002-01A	MW-3-4	Aqueous	2	
10021002-02A	MW-3-3	Aqueous	2	
10021002-03A	MW-3-2	Aqueous	2	
10021002-04A	DUPE-3-1Q10	Aqueous	2	
10021002-05A	MW-4-3	Aqueous	2	
10021002-06A	MW-4-2	Aqueous	2	
10021002-07A	MW-4-1	Aqueous	2	
10021002-08A	EB-6-2/9/10	Aqueous	2	
10021002-09A	TB-6-2/9/10	Aqueous	2	
		•		

2/23/10



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Type MBLK   Test Code: EPA Method SW9209  Satch ID: MS15W0212M   Analysis Date: 02/13/22/10 10 10 11 10 10 10 10 10 10 10 10 10 1	Work Order: 10021002		
Sample   D.   MBLK MS15W0212M   Post   Pos			
Analyte Result POL Spk/al SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limi Dichrocordinosmenthane (	32		
Dichlorodifucomethane	32		
Chloromethane ND Chloro	) Q		
Chloromethane ND 0,5 Chlorosthane ND 0,5 Chlor			
Chloroethane			
Bromomethane			
Trichlorduromethane ND 0.5 Dichloromethane ND 0.5 Dichloromethane ND 0.5 Trans-1.2-Dichlorotehne ND 0.5 Trans-1.3-Dichlorotehne ND 0.5 Trans-1.3-Dichlorote			
1.1-Dichrorethene			
Dichloromethane   ND			
Trans-12-Dichloropethen			
Itans-1.2-Dichloroethene   ND			
Methyl terh-butyl ether (MTBE)			
1.1-Dictoroethane			
cis-1,2-Dichloroethene         ND         0.5           Bromochloromethane         ND         0.5           Chloroforn         ND         0.5           2,2-Dichloropropane         ND         0.5           1,2-Dichloropropane         ND         0.5           1,1-Dichloropropene         ND         0.5           Carbon tetrachloride         ND         0.5           Benzene         ND         0.5           Benzene         ND         0.5           Benzene         ND         0.5           I-Dichloropropane         ND         0.5           1-Christopropane         ND         0.5           Trichloroethene         ND         0.5           Gromodichloromethane         ND         0.5           HAlethyl-2-pertanone (MIBK)         ND         0.5           Strass-1,3-Dichloropropene         ND         0.5           Toluene         ND         0.5			
Bromochloromethane   ND			
Chloroform			
2.2-Dichloropropane			
1.2-Dichloroethane			
1,1,1-Tichloroethane         ND         0.5           Carbon tetrachloride         ND         0.5           Benzene         ND         0.5           Benzene         ND         0.5           Dibromomethane         ND         0.5           Iz-Dickloropropane         ND         0.5           Trichloroethene         ND         0.5           Bromodiciloromethane         ND         0.5           H-Methyl-2-pentanone (MIBK)         ND         0.5           sta-1,3-Dichloropropene         ND         0.5           sta-1,3-Dichloropropene         ND         0.5           Tulz-Trichloroethane         ND         0.5           Tulz-Dichloropropane         ND         0.5           Tulz-Dichloropropane         ND         0.5           Tulz-Dichloropropane         ND         0.5           Dibromochloromethane         ND         0.5           1,2-Dichloropropane         ND         0.5           1,2-Dichloropropane         ND         0.5           1,1-12-Tetrachloroethane         ND         0.5           Limpberszene         ND         0.5           Bromoform         ND         0.5           Bromofor			
1.1-Dichloropropene			
Carbon tetrachionide			
Benzene			
Dibromomethane         ND         0.5           1.2-Dichloropropane         ND         0.5           Trichloroethene         ND         0.5           Bromodichloromethane         ND         0.5           Bromodichloropropene         ND         0.5           vis-1.3-Dichloropropene         ND         0.5           1.1,2-Trichloroethane         ND         0.5           Toluene         ND         0.5           1.3-Dichloropropane         ND         0.5           Dibromochloromethane         ND         0.5           1.3-Dichloropropane         ND         0.5           Dibromochloromethane (EDB)         ND         1           1-Etrachloroethane (EDB)         ND         1           1-Etrachloroethane (EDB)         ND         0.5           Chlorobenzene         ND         0.5           Chlorobenzene         ND         0.5           Etrybenzene         ND         0.5           Mp-Zylene         ND         0.5           Bromoform         ND         0.5           Styrene         ND         0.5           Aylene         ND         0.5           Bromobenzene         ND			
1.2-Dichloropropane			
Bromodichloromethane   ND			
4-Methyl-2-pentanone (MIBK)         ND         2.5           cis-1.3-Dichloropropene         ND         0.5           trans-1.3-Dichloropropene         ND         0.5           1.1,2-Trichloroethane         ND         0.5           Tollene         ND         0.5           1.3-Dichloropropane         ND         0.5           Dibromochloromethane         ND         0.5           1,2-Dibromoethane (EDB)         ND         1           Tetrachloroethene         ND         0.5           1,1,1,2-Tetrachloroethane         ND         0.5           Chlorobenzene         ND         0.5           Ethylbenzene         ND         0.5           Bromoform         ND         0.5           Syrene         ND         0.5           Syrene         ND         0.5           Syrene         ND         0.5           Syrene         ND         0.5           1,2,3-Trichloropropane         ND         0.5           Sorropylbenzene         ND         0.5           Bromobenzene         ND         0.5           -Propylbenzene         ND         0.5           -Propylbenzene         ND         0.5 <td></td>			
cis-1,3-Dichloropropene         ND         0.5           trans-1,3-Dichloropropene         ND         0.5           folluene         ND         0.5           1,12-Dichloropropane         ND         0.5           Dibromochloromethane         ND         0.5           1,2-Dibromochloromethane         ND         0.5           1,2-Dibromochloromethane         ND         0.5           1,2-Dibromochloromethane         ND         0.5           Chlorobenzene         ND         0.5           Chlorobenzene         ND         0.5           Chlorobenzene         ND         0.5           Ethylbenzene         ND         0.5           Bromoform         ND         0.5           Styrene         ND         0.5           Partichloropropa			
trans-13-Dichloropropene         ND         0.5           1,1-2-Trichloroethane         ND         0.5           Toluene         ND         0.5           1,3-Dichloropropane         ND         0.5           Dibromochloromethane         ND         0.5           1,2-Dibromoethane (EDB)         ND         1           Tetrachloroethane         ND         0.5           1,1,1,2-Tetrachloroethane         ND         0.5           Chlorobenzene         ND         0.5           Ethylbenzene         ND         0.5           Mp-Zylene         ND         0.5           Bromoform         ND         0.5           Styrene         ND         0.5           Hoppidenzene         ND			
1,1,2-Trichloroethane			
Toluene			
1,3-Dichloropropane         ND         0.5           Dibromochloromethane         ND         0.5           1,2-Dibromocthane (EDB)         ND         1           Tetrachloroethene         ND         0.5           1,1,1,2-Tetrachloroethane         ND         0.5           Chlorobenzene         ND         0.5           Ethylbenzene         ND         0.5           Ethylbenzene         ND         0.5           Bromoform         ND         0.5           Styrene         ND         0.5           -Xylene         ND         0.5           1,1,2,2-Tetrachloroethane         ND         0.5           1,1,2,2-Tichloropropane         ND         0.5           Bromobenzene         ND         0.5			
Dibromochloromethane         ND         0.5           1,2-Dibromoethane (EDB)         ND         1           Tetrachloroethene         ND         0.5           1,1,1,2-Tetrachloroethane         ND         0.5           Chlorobenzene         ND         0.5           Ethylbenzene         ND         0.5           Bromoform         ND         0.5           Bromoform         ND         0.5           Styrene         ND         0.5           0-Xylene         ND         0.5           1,2,2-Tetrachloroethane         ND         0.5           1,2,2-Trichloropropane         ND         0.5           1,2,3-Trichloropropane         ND         0.5           Bromobenzene         ND         0.5           N-Propylbenzene         ND         0.5           N-Propylbenzene         ND         0.5           2-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           1,3,5-Trimethylbenzene         ND         0.5           1,2-4-Trimethylbenzene         ND         0.5           1,2-4-Trimethylbenzene         ND         0.5           1,3-Dichlorobenzene         ND			
1,2-Dibromoethane (EDB)       ND       1         Tetrachloroethene       ND       0.5         1,1,1,2-Tetrachloroethane       ND       0.5         Chlorobenzene       ND       0.5         Ethylbenzene       ND       0.5         Inp-Xylene       ND       0.5         Bromoform       ND       0.5         Styrene       ND       0.5         O-Xylene       ND       0.5         O-Xylene       ND       0.5         1,1,2,2-Trichloropropane       ND       0.5         1,1,2,3-Trichloropropane       ND       1         Isopropylbenzene       ND       0.5         Bromobenzene       ND       0.5         Horrichlorotoluene       ND       0.5         4-Chlorotoluene       ND       0.5         4-Chlorotoluene       ND       0.5         4-Chlorotoluene       ND       0.5         4-Trimethylbenzene       ND       0.5         1,2,4-Trimethylbenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         4-Leopropylloluene       ND       0.5			
Tetrachloroethene         ND         0.5           1,1,1,2-Tetrachloroethane         ND         0.5           Chlorobenzene         ND         0.5           Ethylbenzene         ND         0.5           m,p-Xylene         ND         0.5           Bromoform         ND         0.5           Styrene         ND         0.5           0-Xylene         ND         0.5           1,1,2,2-Tetrachloroethane         ND         0.5           1,2,2-Trichloropropane         ND         0.5           1,2,3-Trichloropropane         ND         0.5           Bromobenzene         ND         0.5           n-Propylbenzene         ND         0.5           n-Propylbenzene         ND         0.5           -Chlorotoluene         ND         0.5           -Chlorotoluene         ND         0.5           1,3-5-Trimethylbenzene         ND         0.5           tetr-Butylbenzene         ND         0.5           1,2-4-Trimethylbenzene         ND         0.5           sec-Butylbenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           4-Lesporpylitoluene         ND			
1,1,1,2-Tetrachloroethane       ND       0.5         Chlorobenzene       ND       0.5         Ethylbenzene       ND       0.5         m,p-Xylene       ND       0.5         Bromoform       ND       0.5         Styrene       ND       0.5         o-Xylene       ND       0.5         1,1,2,2-Tetrachloroethane       ND       0.5         1,1,2,2-Trichloropropane       ND       0.5         Isopropylbenzene       ND       0.5         Bromobenzene       ND       0.5         Propylbenzene       ND       0.5         4-Chlorotoluene       ND       0.5         4-Chlorotoluene       ND       0.5         2-Chlorotoluene       ND       0.5         2-Chlorotoluene       ND       0.5         1,3.5-Timethylbenzene       ND       0.5         tert-Butylbenzene       ND       0.5         tert-Butylbenzene       ND       0.5         1,2-4-Timethylbenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,4-Dichlorobenzene       ND       0.5         1,2-Dichlorobenzene       ND       0.5			
Chlorobenzene         ND         0.5           Ethylbenzene         ND         0.5           m.pXylene         ND         0.5           Styrene         ND         0.5           O-Xylene         ND         0.5           1,1,2,2-Tetrachloroethane         ND         0.5           1,2,3-Trichloropropane         ND         1           Isopropylbenzene         ND         0.5           Bromobenzene         ND         0.5           n-Propylbenzene         ND         0.5           4-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           1,3,5-Trimethylbenzene         ND         0.5           1,2,4-Trimethylbenzene         ND         0.5           sec-Butylbenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           4-Isopropyltoluene         ND         0.5           4-Isopropyltoluene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           1,2-Dichlorobenzene         ND			
m.p-Xylene         ND         0.5           Bromoform         ND         0.5           Styrene         ND         0.5           o-Xylene         ND         0.5           1,1,2,2-Tetrachloroethane         ND         0.5           1,2,3-Trichloropropane         ND         0.5           Isopropylbenzene         ND         0.5           Bromobenzene         ND         0.5           H-Propylbenzene         ND         0.5           4-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           1,3-5-Trimethylbenzene         ND         0.5           tert-Butylbenzene         ND         0.5           tert-Butylbenzene         ND         0.5           1,2-4-Trimethylbenzene         ND         0.5           sec-Butylbenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           4-Isopropyltoluene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           1,2-Dibromo-3-chloropropane (DBCP)			
Bromoform         ND         0.5           Styrene         ND         0.5           0-Xylene         ND         0.5           1,1,2,2-Tetrachloroethane         ND         0.5           1,2,3-Trichloropropane         ND         0.5           Isopropylbenzene         ND         0.5           Bromobenzene         ND         0.5           n-Propylbenzene         ND         0.5           4-Chlorotoluene         ND         0.5           4-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           1,3,5-Trimethylbenzene         ND         0.5           tetr-Butylbenzene         ND         0.5           1,2,4-Trimethylbenzene         ND         0.5           1,2-Tichlorobenzene         ND         0.5           1,4-Dichlorobenzene         ND         0.5           1,4-Dichlorobenzene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           1,2-Dibromo-3-chloropropane (DBCP)         ND         0.5           1,2-Libromo-3-chloropropane (DBCP)         ND         1           Naphthal			
Styrene         ND         0.5           0-Xylene         ND         0.5           1,1,2,2-Tetrachloroethane         ND         0.5           1,2,3-Trichloropropane         ND         0.5           Isopropylbenzene         ND         0.5           Bromobenzene         ND         0.5           4-Chlorotoluene         ND         0.5           4-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           1,3,5-Trimethylbenzene         ND         0.5           1,2,4-Trimethylbenzene         ND         0.5           1,2,4-Trimethylbenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           1,4-Dichlorobenzene         ND         0.5           1,4-Dichlorobenzene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           n-Butylbenzene         ND         0.5           1,2-Dibromo-3-chloropropane (DBCP)         ND         2.5           1,2,4-Trichlorobenzene         ND         1           Naphthalene         ND         1           Hexachlorobu			
o-Xylene			
1,1,2,2-Tetrachloropethane       ND       0.5         1,2,3-Trichloropropane       ND       1         Isopropylbenzene       ND       0.5         Bromobenzene       ND       0.5         n-Propylbenzene       ND       0.5         4-Chlorotoluene       ND       0.5         2-Chlorotoluene       ND       0.5         2-Chlorotoluene       ND       0.5         1-Chlorotoluene       ND       0.5         1-1,3,5-Trimethylbenzene       ND       0.5         1-1,2-4-Trimethylbenzene       ND       0.5         1,2-4-Trimethylbenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,4-Dichlorobenzene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5<			
1,2,3-Trichloropropane       ND       1         Isopropylbenzene       ND       0.5         Bromobenzene       ND       0.5         n-Propylbenzene       ND       0.5         4-Chlorotoluene       ND       0.5         2-Chlorotoluene       ND       0.5         1,3,5-Trimethylbenzene       ND       0.5         tert-Butylbenzene       ND       0.5         1,2,4-Trimethylbenzene       ND       0.5         1,2,4-Trimethylbenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,4-Dichlorobenzene       ND       0.5         4-Isopropyltoluene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       2.5         1,2-4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene			
Sopropylbenzene			
Bromobenzene         ND         0.5           n-Propylbenzene         ND         0.5           4-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           2-Chlorotoluene         ND         0.5           1,3,5-Trimethylbenzene         ND         0.5           1,2,4-Trimethylbenzene         ND         0.5           1,2-Pichlorobenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           1,4-Dichlorobenzene         ND         0.5           4-Isopropyltoluene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           1,2-Dibromo-3-chloropropane (DBCP)         ND         0.5           1,2-Dibromo-3-chloropropane (DBCP)         ND         1           Naphthalene         ND         1           Hexachlorobutadiene         ND         1           Hexachlorobenzene         ND         1           1,2,3-Trichlorobenzene         ND         1			
n-Propylbenzene ND 0.5 4-Chlorotoluene ND 0.5 2-Chlorotoluene ND 0.5 1,3,5-Trimethylbenzene ND 0.5 1,3,5-Trimethylbenzene ND 0.5 1,2,4-Trimethylbenzene ND 0.5 sec-Butylbenzene ND 0.5 1,3-Dichlorobenzene ND 0.5 1,3-Dichlorobenzene ND 0.5 1,4-Dichlorobenzene ND 0.5 1,4-Dichlorobenzene ND 0.5 1,2-Dichlorobenzene ND 0.5 1,2-Trichlorobenzene ND 0.5 1,2-A-Trichlorobenzene ND 1 Naphthalene ND 1 Naphthalene ND 1 Naphthalene ND 1 Naphthalene ND 1 1,2,3-Trichlorobenzene ND 1 1,2,3-Trichlorobenzene ND 1			
4-Chlorotoluene       ND       0.5         2-Chlorotoluene       ND       0.5         1,3,5-Trimethylbenzene       ND       0.5         tert-Butylbenzene       ND       0.5         1,2,4-Trimethylbenzene       ND       0.5         sec-Butylbenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,4-Dichlorobenzene       ND       0.5         4-Isopropyltoluene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       0.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
2-Chlorotoluene       ND       0.5         1,3,5-Trimethylbenzene       ND       0.5         tert-Butylbenzene       ND       0.5         1,2,4-Trimethylbenzene       ND       0.5         sec-Butylbenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,4-Dichlorobenzene       ND       0.5         4-Isopropyltoluene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       0.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
1,3,5-Trimethylbenzene       ND       0.5         tert-Butylbenzene       ND       0.5         1,2,4-Trimethylbenzene       ND       0.5         sec-Butylbenzene       ND       0.5         1,3-Dichlorobenzene       ND       0.5         1,4-Dichlorobenzene       ND       0.5         4-Isopropyltoluene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       2.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
tert-Butylbenzene ND 0.5 1,2,4-Trimethylbenzene ND 0.5 sec-Butylbenzene ND 0.5 1,3-Dichlorobenzene ND 0.5 1,4-Dichlorobenzene ND 0.5 4-Isopropyltoluene ND 0.5 1,2-Dichlorobenzene ND 0.5 1,2-Dichlorobenzene ND 0.5 1,2-Dibnomo-3-chloropropane (DBCP) ND 0.5 1,2-Dibromo-3-chloropropane (DBCP) ND 0.5 1,2,4-Trichlorobenzene ND 1 Naphthalene ND 1 Naphthalene ND 1 Naphthalene ND 1			
sec-Butylbenzene         ND         0.5           1,3-Dichlorobenzene         ND         0.5           1,4-Dichlorobenzene         ND         0.5           4-Isopropyltoluene         ND         0.5           1,2-Dichlorobenzene         ND         0.5           n-Butylbenzene         ND         0.5           1,2-Dibromo-3-chloropropane (DBCP)         ND         2.5           1,2,4-Trichlorobenzene         ND         1           Naphthalene         ND         1           Hexachlorobutadiene         ND         1           1,2,3-Trichlorobenzene         ND         1			
1,3-Dichlorobenzene       ND       0.5         1,4-Dichlorobenzene       ND       0.5         4-Isopropyltoluene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       2.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
1,4-Dichlorobenzene       ND       0.5         4-Isopropyltoluene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       2.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
4-Isopropyltoluene       ND       0.5         1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       2.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
1,2-Dichlorobenzene       ND       0.5         n-Butylbenzene       ND       0.5         1,2-Dibromo-3-chloropropane (DBCP)       ND       2.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
n-Butylbenzene ND 0.5  1,2-Dibromo-3-chloropropane (DBCP) ND 2.5  1,2,4-Trichlorobenzene ND 1  Naphthalene ND 1  Hexachlorobutadiene ND 1  1,2,3-Trichlorobenzene ND 1			
1,2-Dibromo-3-chloropropane (DBCP)       ND       2.5         1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
1,2,4-Trichlorobenzene       ND       1         Naphthalene       ND       1         Hexachlorobutadiene       ND       1         1,2,3-Trichlorobenzene       ND       1			
Naphthalene         ND         1           Hexachlorobutadiene         ND         1           1,2,3-Trichlorobenzene         ND         1			
Hexachlorobutadiene ND 1 1,2,3-Trichlorobenzene ND 1			
· ·			
Surr: 1,2-Dichloroethane-d4     9.48     10     95     70     130       Surr: Toluene-d8     10     10     100     70     130			



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<b>Date:</b> 19-Feb-10	(	QC Sum	mary R	Leport	_		Work Ord 10021002	
Surr: 4-Bromofluorobenzene	10.3		10	103	70	130		
Laboratory Control Spike File ID: 10021205.D		Type LCS	Batch	ode: EPA Meth		Analysis [	Date: 02/12/2010 09:31 e: 02/12/2010 09:31	
Sample ID: LCS MS15W0212M	Units : µg/L			15_100212B	LCL/MEX	Prep Date	DRefVal %RPD(Limit)	Qual
Analyte  Dichlorodifluoromethane	Result					130	DICEIVAL /OICE D(LIIIII)	
Chloromethane	8.99 7.61	1 2	10 10	90 76	70 70	130		
Vinyl chloride	10.7	1	10	107	70	130		
Chloroethane	8.67	1	10	87	70	130		
Bromomethane	5.39	2	10	54	70(70)	130		L50
Trichlorofluoromethane	10.4	1	10	104	70 70	130 130		
1,1-Dichloroethene Dichloromethane	10.6 10.5	1 2	10 10	106 105	70 70	130		
trans-1,2-Dichloroethene	10.8	1	10	108	70	130		
Methyl tert-butyl ether (MTBE)	11.8	0.5	10	118	70	130		
1,1-Dichloroethane	10.2	1	10	102	70	130		
cis-1,2-Dichloroethene Bromochloromethane	11.5 12.2	1	10 10	115 122	70 70	130 130		
Chloroform	9.88	1	10	99	70 70	130		
2,2-Dichloropropane	10.8	1	10	108	70	130		
1,2-Dichloroethane	11.4	1	10	114	70	130		
1,1,1-Trichloroethane	10.9	1	10	109	70 70	130		
1,1-Dichloropropene	10.8	1	10	108 112	70 70	130 130		
Carbon tetrachloride Benzene	11.2 10.1	1 0.5	10 10	101	70 70	130		
Dibromomethane	12.3	1	10	123	70	130		
1,2-Dichloropropane	11.1	1	10	111	70	130		
Trichloroethene	11	1	10	110	70	130		
Bromodichloromethane	12	1	10	120	70 70	130 130		
cis-1,3-Dichloropropene trans-1,3-Dichloropropene	11 11.2	1 1	10 10	110 112	70 70	130		
1,1,2-Trichloroethane	12	1	10	120	70	130		
Toluene	10.1	0.5	10	101	70	130		
1,3-Dichloropropane	12.3	1	10	123	70	130		
Dibromochloromethane	12.1	1	10	121 128	70 70	130 130		
1,2-Dibromoethane (EDB) Tetrachloroethene	25.6 10.7	2 1	20 10	128	70 70	130		
1,1,1,2-Tetrachloroethane	11.5	i	10	115	70	130		
Chlorobenzene	10.4	1	10	104	70	130		
Ethylbenzene	10	0.5	10	100	70	130		
m,p-Xylene Bromoform	10.7 11.6	0.5	10 10	107 116	70 70	130 130		
Styrene	11.7	1 1	10 10	117	70 70	130		
o-Xylene	10.8	0.5	10	108	70	130		
1,1,2,2-Tetrachloroethane	11.1	1	10	111	70	130		
1,2,3-Trichloropropane	22.1	2	20	110	70 70	130 130		
Isopropylbenzene Bromobenzene	10.1 10.2	1 1	10 10	101 102	70 70	130	•	
n-Propylbenzene	9.83	i	10	98	70	130		
4-Chlorotoluene	10.4	1	10	104	70	130		
2-Chlorotoluene	9.89	1	10	99	70	130		
1,3,5-Trimethylbenzene tert-Butylbenzene	9.5 9.52	1 1	10 10	95 95	70 70	130 130		
1,2,4-Trimethylbenzene	9.52 9.67	1	10	97	70	130		
sec-Butylbenzene	9.85	i	10	99	70	130		
1,3-Dichlorobenzene	9.92	1	10	99	70	130		
1,4-Dichlorobenzene	9.57	1	10	96 07	70 70	130 130		
4-Isopropyltoluene 1,2-Dichlorobenzene	9.66 9.49	1 1	10 10	97 95	70 70	130		
n-Butylbenzene	9.66	1	10	97	70	130		
1,2-Dibromo-3-chloropropane (DBCP)	55.5	3	50	111	70	130		
1,2,4-Trichlorobenzene	10.5	2	10	105	70	130		
Naphthalene	12 17	2	10	120 85	70 70	130 130		
Hexachlorobutadiene 1,2,3-Trichlorobenzene	17 10.8	2 2	20 10	85 108	70 70	130		
Surr: 1,2-Dichloroethane-d4	9.51	_	10	95	70	130		
Surr: Toluene-d8	9.5		10	95	70	130		
Surr: 4-Bromofluorobenzene	10.7		10	107	70	130		



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Date:<br/>19-Feb-10QC Summary ReportWork Order:<br/>10021002

			<del> </del>						
Sample Matrix Spike		Type MS	S Tes	t Code: EP	A Meti	hod SW8			
File ID: 10021208.D			Bat	ch ID: <b>MS1</b> :	5W021	2M	Analysis Date	02/12/2010 10:54	
Sample ID: 10021002-06AMS	Units : µg/L	F	Run ID: MS	D_15_1002	12B		Prep Date:	02/12/2010 10:54	
Analyte	Result	PQL				LCL(ME)	UCL(ME) RPDRe	Val %RPD(Limit)	Qu
Dichlorodifluoromethane	37.2	2.5	50	0	74	13	167		
Chloromethane	34.9	10	50 50	0	70	28	145		
Vinyl chloride	47.7	2.5	50	Ŏ	95	43	134		
Chloroethane	38.6	2.5	50	0	77	39	154		
Bromomethane	23.9	10	50	0	48	19	176		
Trichlorofluoromethane	46.7	2.5	50	0	93	34	160		
1,1-Dichloroethene	49.3	2.5	50	0	99	60	130		
Dichloromethane	49.7	10	50	0	99	68	130		
trans-1,2-Dichloroethene	50.2	2.5	50	0	100	63	130		
Methyl tert-butyl ether (MTBE)	56.1	1.3	50	0	112	56	141		
1,1-Dichloroethane	48.7	2.5	50	0	97	61	130		
cis-1,2-Dichloroethene	54.9	2.5	50	0	110	70	130 130		
Bromochloromethane	57.3	2.5	50 50	0	115 94	70 67	130		
Chloroform	46.8	2.5	50	0	94 101	30	152		
2,2-Dichloropropane	50.5 53.8	2.5	50 50	0	108	60	135		
1,2-Dichloroethane 1,1,1-Trichloroethane	50.8	2.5 2.5	50 50	0	102	59	137		
1,1-Dichloropropene	51.5	2.5	50 50	0	103	63	130		
Carbon tetrachloride	51.2	2.5	50	0	102	50	147		
Benzene	48	1.3	50	ő	96	67	130		
Dibromomethane	56.4	2.5	50	0	113	69	133		
1,2-Dichloropropane	51.3	2.5	50	Ŏ	103	69	130		
Trichloroethene	51.1	2.5	50	0.88	100	69	130		
Bromodichloromethane	56	2.5	50	0	112	66	134		
cis-1,3-Dichloropropene	48.8	2.5	50	0	98	63	130		
trans-1,3-Dichloropropene	51	2.5	50	0	102	66	131		
1,1,2-Trichloroethane	55	2.5	50	0	110	68	130		
Toluene	47.6	1.3	50	0	95	66	130		
1,3-Dichloropropane	57.5	2.5	50	0	115	70	130		
Dibromochloromethane	56.4	2.5	50	0	113	70	130		
1,2-Dibromoethane (EDB)	119	5	100	0	119	70	130		
Tetrachloroethene	51.5	2.5	50	0.57	102	61	134		
1,1,1,2-Tetrachloroethane	53.7	2.5	50	0	107	70	130		
Chlorobenzene	48.4	2.5	50	0	97	70	130		
Ethylbenzene	46.9	1.3	50	0	94	68 64	130 130		
m,p-Xylene	50.3	1.3	50 50	0	101 109	64 64	138		
Bromoform	54.5 54.5	2.5 2.5	50 50	0	109	69	130		
Styrene o-Xylene	54.5 50.6	1.3	50 50	0	103	70	130		
1,1,2,2-Tetrachloroethane	52.1	2.5	50	0	104	65	131		
1,2,3-Trichloropropane	103	10	100	ő	103	70	130		
Isopropylbenzene	47.2	2.5	50	Ŏ	94	64	138		
Bromobenzene	47.9	2.5	50	Ō	96	70	130		
n-Propylbenzene	45.7	2.5	50	0	91	66	132		
4-Chlorotoluene	48.5	2.5	50	0	97	70	130		
2-Chlorotoluene	46.5	2.5	50	0	93	70	130		
1,3,5-Trimethylbenzene	44.6	2.5	50	0	89	66	136		
tert-Butylbenzene	44.6	2.5	50	0	89	65	137		
1,2,4-Trimethylbenzene	45.4	2.5	50	0	91	65	137		
sec-Butylbenzene	45.9	2.5	50	0	92	66	134		
1,3-Dichlorobenzene	46.4	2.5	50	0	93	70	130		
1,4-Dichlorobenzene	44.6	2.5	50	0	89	70	130		
4-Isopropyltoluene	45.2	2.5	50	0	90	66 70	137		
1,2-Dichlorobenzene	44.1	2.5	50 50	0	88	70 60	130		
n-Butylbenzene	45.4	2.5	50 250	0	91 101	60 67	142 130		
1,2-Dibromo-3-chloropropane (DBCP)	253	15	250	0	101	67 61	137		
1,2,4-Trichlorobenzene	47 53.3	10	50 50	0	94 106	61 40	167		
Naphthalene Hexachlorobutadiene	53.2 77.2	10 10	100	0	77	61	130		
1.2.3-Trichlorobenzene	77.2 47.4	10	50	0	95	51	144		
Surr: 1,2-Dichloroethane-d4	47.4 45.6	10	50 50	J	93 91	70	130		
	47.6		50 50		95	70 70	130		
Surr: Toluene-d8									



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Work Order: Date: **QC Summary Report** 19-Feb-10 10021002 Type MSD Test Code: EPA Method SW8260B Sample Matrix Spike Duplicate File ID: 10021209.D Analysis Date: 02/12/2010 11:16 Batch ID: MS15W0212M Prep Date: 02/12/2010 11:16 Sample ID: 10021002-06AMSD Units: µg/L Run ID: MSD 15 100212B SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Analyte Result **PQL** 4.8(20) 78 13 167 37.18 Dichlorodifluoromethane 39 2.5 34.87 3.6(20)Chloromethane 33.7 50 0 67 28 145 10 43 134 47.69 9.1(20)Vinvl chloride 52.2 2.5 50 0 104 39 154 38.63 7.1(20) Chloroethane 41.5 2.5 50 0 83 18.7(20) **Bromomethane** 58 19 176 23.92 28.9 50 n 10 98 34 160 46.66 5.1(20) Trichlorofluoromethane 49.1 2.5 50 0 4.0(20) 49.3 60 1,1-Dichloroethene 51.3 2.5 50 0 103 130 49.65 5.5(20) Dichloromethane 10 50 0 105 68 130 52.5 50.15 6.4(20)trans-1,2-Dichloroethene 53.4 2.5 50 0 107 63 130 Methyl tert-butyl ether (MTBE) 56 141 56.09 8.1(20) 122 60.9 1.3 50 0 1.1-Dichloroethane 51.2 2.5 50 0 102 61 130 48.74 4.9(20)54.93 4.5(20)cis-1,2-Dichloroethene 57.4 2.5 50 0 115 70 130 Bromochloromethane 2.5 50 0 70 130 57.27 5.8(20) 60.7 121 67 130 46.8 4.6(20)Chloroform 49 2.5 50 0 98 6.4(20)50.51 2,2-Dichloropropane 53.9 2.5 50 0 108 30 152 1,2-Dichloroethane 56.8 5.6(20) 60 135 53.77 2.5 50 0 114 5.0(20) 1,1,1-Trichloroethane 59 137 50.84 53.4 2.5 50 0 107 4.5(20) 63 51.48 1,1-Dichloropropene 53.9 2.5 50 0 108 130 7.0(20)Carbon tetrachloride 2.5 50 0 110 50 147 51.21 54 9 5.3(20) Benzene 50.6 1.3 50 0 101 67 130 48.02 6.0(20)133 56.41 Dibromomethane 59.9 2.5 50 0 120 69 1,2-Dichloropropane 55.3 2.5 50 0 111 69 130 51.32 7.5(20)4.7(20) 69 0.88 130 51.07 Trichloroethene 53.5 2.5 50 105 66 134 55.98 5.1(20) Bromodichloromethane 58.9 2.5 50 0 118 cis-1,3-Dichloropropene 63 130 48.75 6.3(20)51.9 2.5 50 0 104 6.3(20)109 66 131 51.02 trans-1,3-Dichloropropene 54.4 2.5 50 0 5.4(20) 1,1,2-Trichloroethane 58 2.5 50 0 116 68 130 54.97 47.64 3.2(20)Toluene 49.2 0 98 66 130 1.3 50 70 57.52 3.8(20) 1,3-Dichloropropane 0 119 130 59.7 2.5 50 Dibromochloromethane 2.5 0 118 70 130 56.42 4.6(20)59 1 50 4.8(20) 118.6 1.2-Dibromoethane (EDB) 100 0 124 70 130 124 5 2.9(20)134 51.53 2.5 0.57 105 61 Tetrachloroethene 53.1 50 70 130 53.73 3.7(20)1,1,1,2-Tetrachloroethane 55.8 2.5 50 0 112 3.2(20) 70 48.39 Chlorobenzene 50 2.5 50 0 99.9 130 46.92 3.2(20) 0 97 68 130 Ethylbenzene 48.4 1.3 50 50.33 2.5(20)m,p-Xylene 51.6 1.3 50 0 103 64 130 138 54.47 6.2(20)64 Bromoform 2.5 50 0 116 58 Styrene 56.2 2.5 50 0 112 69 130 54.52 3.0(20)50.62 4.1(20)70 130 o-Xylene 52.8 1.3 50 0 106 1,1,2,2-Tetrachloroethane 4.8(20) 50 0 109 65 131 52.1 54.7 2.5 1,2,3-Trichloropropane 0 107 70 130 103.3 3.7(20)107 10 100 2.5 138 47.18 4.2(20)Isopropylbenzene 49.2 50 0 98 64 70 47.91 4.3(20)Bromobenzene 2.5 50 0 100 130 50 4.4(20)n-Propylbenzene 2.5 0 66 132 45.66 47.7 50 95 70 130 48.52 4.6(20)4-Chlorotoluene 50.8 2.5 50 0 102 70 46.49 2.0(20)2-Chlorotoluene 47.4 2.5 50 0 95 130 3.6(20)1,3,5-Trimethylbenzene 46.2 2.5 50 0 92 66 136 44.58 4.2(20) 65 137 44.58 tert-Butylbenzene 2.5 50 0 93 46.5 1,2,4-Trimethylbenzene 47.2 2.5 50 0 94 65 137 45.43 3.9(20)66 45.87 6.1(20)0 98 134 sec-Butylbenzene 2.5 50 48.8 1,3-Dichlorobenzene 48.6 2.5 50 0 97 70 130 46.44 4.5(20)44.61 3.7(20)70 130 1,4-Dichlorobenzene 46.3 2.5 50 0 93 0 94 66 137 45.19 3.5(20)4-Isopropyltoluene 46.8 2.5 50 4.9(20)1,2-Dichlorobenzene 0 93 70 130 44.11 46.3 2.5 50 n-Butylbenzene 0 95 60 142 45.44 4.2(20) 47.4 2.5 50 1,2-Dibromo-3-chloropropane (DBCP) 130 253.2 7.5(20)15 250 0 109 67 273 10.8(20) 47.04 1.2.4-Trichlorobenzene 52.4 10 50 0 105 61 137 11.0(20) 40 167 53.16 Naphthalene 59.3 10 0 119 50 61 130 77.23 7.9(20) Hexachlorobutadiene 83.6 10 100 0 84 1,2,3-Trichlorobenzene 53.5 10 50 0 107 51 144 47.4 12.0(20) Surr: 1.2-Dichloroethane-d4 47.5 95 70 130 50 Surr: Toluene-d8 94 70 130 46.8 50 70 130 Surr: 4-Bromofluorobenzene 110

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54.8



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Work Order:

10021002

Date: 19-Feb-10 QC Summary Report

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.



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<b>Date:</b> 19-Feb-10		Work Order: 10021002								
Method Bla File ID: 17 Sample ID: Analyte	nk MB-23602	Units : µg/L Result	Type: I	Run ID: I	Test Code: <b>E</b> Batch ID: <b>236</b> <b>C_3_100215</b> II SpkRefVal	02 A		Prep Date:	te: 02/15/2010 13:58 02/15/2010 11:55 tefVal %RPD(Limit)	Qual
Perchlorate		ND		1						
Laboratory File ID: 19 Sample ID: Analyte	Fortified Blank LFB-23602	Units : <b>µg/L</b> Result	Type: I	Run ID: I	Test Code: <b>E</b> i Batch ID: <b>236</b> C_3_100215 <i>i</i> Il SpkRefVal	02 A		Prep Date:	te: 02/15/2010 14:35 02/15/2010 11:55 efVal %RPD(Limit)	Qual
Perchlorate		26.9		2 25	 5	107	85	115		
Sample Mat File ID: 24 Sample ID:	rix Spike 10021002-01ALFM	Units : µg/L	Туре: І		Test Code: <b>E</b> l Batch ID: <b>236</b> C_3_100215	02	thod 314.0	Analysis Dat	e: 02/15/2010 16:07 02/15/2010 11:55	
Analyte		Result	PQL				LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual
Perchlorate		22.3	-	2 25	5 0	89	80	120		
Sample Mat	rix Spike Duplicate		Type: I		Test Code: El		thod 314.0	Analysis Dat	e: <b>02/15/2010 16:25</b>	
Sample ID:	10021002-01ALFMD	Units : µg/L			C_3_100215/			Prep Date:	02/15/2010 11:55	
Analyte		Result	PQL	SpkVa	l SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual
Perchlorate		22.6		2 25	5 0	90	80	120 22	1.5(15)	

### **Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 19-Feb-10	QC Summary Report									<b>Work Order:</b> 10021002	
Method Blank File ID: 021710.B\142SMPL.D\		Type: N		est Code: <b>Ef</b> atch ID: <b>236</b> ′		hod 200.8	Analysis	Date:	02/18/2010 02:25		
Sample ID: MB-23613	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date	e:	02/16/2010 14:22		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RP	DRefV	/al %RPD(Limit)	Qual	
Chromium (Cr)	ND	0.005	5								
Laboratory Control Spike File ID: 021710.B\143_LCS.D\		Type: L		est Code: EF atch ID: 2361		hod 200.8	Analysis	Date:	02/18/2010 02:31		
Sample ID: LCS-23613	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date	e:	02/16/2010 14:22		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RP	DRefV	'al %RPD(Limit)	Qual	
Chromium (Cr)	0.0513	0.005	0.05	,	103	80	120				
Sample Matrix Spike File ID: 021710.B\147SMPL.D\		Type: N	-	est Code: EF		hod 200.8	Analysis	Date:	02/18/2010 02:53		
Sample ID: 10021002-06AMS	Units : mg/L		_	P/MS_1002			Prep Date		02/16/2010 14:22		
Analyte	Result	PQL				LCL(ME)			al %RPD(Limit)	Qual	
Chromium (Cr)	0.0527	0.005	0.05	0	105	80	120				
Sample Matrix Spike Duplicate		Type: N	ISD T	est Code: EF	A Met	hod 200.8					
File ID: 021710.B\148SMPL.D\			В	atch ID: <b>236</b> 1	13K		Analysis I	Date:	02/18/2010 02:59		
Sample ID: 10021002-06AMSD	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date	e:	02/16/2010 14:22		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RP	DRefV	al %RPD(Limit)	Qual	
Chromium (Cr)	0.0535	0.005	0.05	0	107	80	120 (	0.0526	8 1.5(20)		

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

### Billing Information:

# CHAIN-OF-CUSTODY RECORD

## Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention Shane Walton Phone Number (614) 424-4117 (818) 393-2808 x connerd@battelle.org waltons@battelle.org EMail Address

Battelle Memorial Institute

EDD Required: Yes

Report Due By: 5:00 PM On: 24-Feb-2010

WorkOrder: BMIS10021002

Page: 1 of 1

Sampled by: Client

Cooler Temp 4 0

Samples Received 10-Feb-2010

10-Feb-2010 Date Printed

Job: G005862/JPL Groundwater Monitoring

= DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates

QC Level: DS4

Client's COC #: 28882, 2888

PO: 218013

San Diego, CA 92110

Betsy Cutie

(614) 424-4899

cutiee@batelle.org

Suite C-205 3990 Old Town Ave

BMI10021002-09A TB-6-2/9/10 BMI10021002-08A BMI10021002-07A MW-4-1 Sample ID BMI10021002-06A BMI10021002-05A MW-4-3 BMI10021002-04A DUPE-3-1Q10 BMI10021002-03A MW-3-2 BMI10021002-02A MW-3-3 BMI10021002-01A MW-3-4 EB-6-2/9/10 MW-4-2 Client Sample ID å å g Ğ å å Š Š Matrix Date 02/09/10 10:35 02/09/10 00:00 02/09/10 08:50 02/09/10 08:32 02/09/10 08:10 02/09/10 09:02 02/09/10 Collection No. of Bottles 02/09/10 11:37 02/09/10 00:00 11:17 Alpha G G S S G S S G Sub 0 0 0 0 0 0 0 0 TAT 5 6 6 6 7 6 6 6 6 Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate METALS\_D VOC\_TIC\_ Ç Ç Ç Ç Ü Ç Ç VOC by 524 VOC by 524 Criteria Criteria VOC\_W Requested Tests Reno Trip Blank 8/25/09 Sample Remarks Level IV QC

Comments: Security seals intact. Frozen ice. Temp Blank #8541 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by:	
Chapterth (Ideax	Signature
dcox	Print Name
Alpha Analytical, Inc.	Company
2.10.10 1042	Date/Time

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information: Name <i>しゃい</i> ない ブラムアにから / みカアティルビ	Alpha Analytical, Inc.	Samples Collected	m Which State? 28882
ss <u> </u>		ID OP	ER of
Phone Number Fax		nialyses nequiled	edalled
SATTELLE / DAVID CONNER	P.O.# 218013 Job#	7	Required QC Level:
is To	388	4.2	/
CA 921	Phone # (6,4) 726 - 7311   Fax #	(2) (x) (x)	
Matrix* Sampled by	Report Attention	ا ا	Global ID #
Sampled Sampled Below Lab ID Number (Use Only)	Sample Description TAT	Field ** See below	REMARKS
1035 21ah AR BMI10021002-01	Mw-3-4 Nonm	V/0 5	
-02	Mw - 3-3	×××	
-00	NW . 3 - 2	\rangle \cdot \cdo	
,04	PUPE-3-1010	XXX	DUPLICATE
	,		
		77	
ADDITIONAL INSTRUCTIONS:			
Signature	Print Name	Company	Date Time
Relinquished by	Maria Menos	INSIGHT EEC	2/9/10 1234
Received by	Ant sea	7	VK/10 1275
Relinquished by	0		
Received by Charlette (ACBX) Relinquished by	Elizabeth Hdrox	Lepha	2.10.10 1042
Received by			
*Key: AQ - Aqueous SO - Soil WA - Waste	te OT - Other AR - Air **: L-Liter	V-Voa S-Soil Jar O-Orbo T-Tedlar B	B-Brass P-Plastic OT-Other

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis

Billing Information: Name <u> </u>	Alpha Analytical, Inc. 255 Glendale Avenue. Suite 21		lected	late? 28881
tate 7in 1 2 mm 1 01	CO.	89431-5778 <b>ID</b>	OR OTHER	Page # of _/
Phone Number Fax		406	Analyses Required	
Source / Davo Coaver	P.O. # 2/18 of 3 Job # C	აა≶ გ⁄ <sub>0</sub> 2	_	<u>io</u>
3990 OLD TOWN AVE. C-205	Dr. Audigss	4. 2		/ " (m) iv
à à	<u> </u>	52		EDD / EDF? YES NO
Matrix* Sampled by See Kev	Report Attention	Total and type of	Set	Global ID#
Sampled Sampled Below Lab ID Number (Use Only)	Sample Description		407	REMARKS
810 741 VO	5 Mw-4-3	NORM UP 5 XX		
832	06 Mw - 4-2	× ×	X	ENET IT OC
do , , , , .	MW - 4-1	X X		
		-	<del>                                     </del>	
88	08 EB-6-2/9/10		X	EWIP BLANK
	NO TR- / - 2 /9 //	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
ADDITIONAL INSTRUCTIONS:				
Signature	Print Name	Company		Date Time
Relinquished by Manager 1997	MARG MENDON	1NS1645 EE	2/5	1/0 1233
Received by	Ash A	Alph, Are	africa ( Us	110 1220
Received by	Flirahith Dois		2./	0-10 1743
Relinquished by			*	
Received by				
*Key: AQ - Aqueous SO - Soil WA - Waste	aste OT - Other AR - Air **: L-Liter	V-Voa S-Soil Jar O-Orbo	T-Tedlar B-Brass	P-Plastic OT-Other

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 22-Feb-10

David Conner

**Battelle Memorial Institute** 

3990 Old Town Ave

San Diego, CA 92110

(818) 393-2808

Suite C-205

**CASE NARRATIVE** 

Job:	G005862/JPL Gro	undwater Monitoring		
Work Order:	BMI10021110	C	ooler Temp: 4°C	
Alpha's	s Sample ID	Client's Sample ID	Matrix	
1002	1110-01A	MW-23-4	Aqueous	
1002	1110-02A	MW-23-3	Aqueous	
1002	1110-03A	MW-23-2	Aqueous	
10021	1110-04A	MW-23-1	Aqueous	
10021	1110-05A	EB-7-2/10/10	Aqueous	
1002	1110-06A	TB-7-2/10/10	Aqueous	
		Manually Integrated Ana	lytes	
Alpha's Sa	mple ID	Test Reference	Analyte	
100211	10-03A	EPA Method 314.0	Perchlorate	
100211	10-04A	FPA Method 314 0	Perchlorate	

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Saulner

Walter Hinkow



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Attn:

David Conner

Phone: (818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/11/10

Job:

G005862/JPL Groundwater Monitoring

### Perchlorate by Ion Chromatography

### EPA Method 314.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-23-3 Lab ID: BMI10021110-02A Date Sampled 02/10/10 08:38	Perchlorate	ND	1.00 µg/L	02/15/10 11:55	02/15/10 19:29
Client ID: MW-23-2 Lab ID: BMI10021110-03A Date Sampled 02/10/10 08:58	Perchlorate	3.74	1.00 μg/L	02/15/10 11:55	02/15/10 19:47
Client ID: MW-23-1 Lab ID: BMI10021110-04A Date Sampled 02/10/10 09:33	Perchlorate	2.79	1.00 μg/L	02/15/10 11:55	02/15/10 20:06
Client ID: EB-7-2/10/10 Lab ID: BMI10021110-05A Date Sampled 02/10/10 09:15	Perchlorate	ND	1.00 µg/L	02/15/10 11:55	02/15/10 20:24

ND = Not Detected

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/24/10

**Report Date** 



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/11/10

Job:

G005862/JPL Groundwater Monitoring

Metals by ICPMS EPA Method 200.8

				·	<del> </del>
	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-23-4 Lab ID: BMI10021110-01A Date Sampled 02/10/10 08:12	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 03:50
Client ID: MW-23-3 Lab ID: BMI10021110-02A Date Sampled 02/10/10 08:38	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 03:55
Client ID: MW-23-2 Lab ID: BMI10021110-03A Date Sampled 02/10/10 08:58	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 04:24
Client ID: MW-23-1 Lab ID: BM110021110-04A Date Sampled 02/10/10 09:33	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 04:29
Client ID: EB-7-2/10/10 Lab ID: BMI10021110-05A Date Sampled 02/10/10 09:15	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 04:35

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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Report Date



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

San Diego, CA 92110 Job: G005862/JPL 0

G005862/JPL Groundwater Monitoring

### Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated		
	Parameter	Estimated	Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID: MW-23-3 Lab ID: BMI10021110-02A Date Received: 02/11/10 Date Sampled: 02/10/10 08:38	*** None Found ***	ND	2.0 μg/L	02/16/10 13:29	02/16/10 13:29
Client ID: MW-23-2 Lab ID: BMI10021110-03A  Date Received: 02/11/10 Date Sampled: 02/10/10 08:58	*** None Found ***	ND	2.0 μg/L	02/16/10 13:52	02/16/10 13:52
Client ID: MW-23-1 Lab ID: BMI10021110-04A Date Received: 02/11/10 Date Sampled: 02/10/10 09:33	*** None Found ***	ND	2.0 μg/L	02/16/10 14:14	02/16/10 14:14
Client ID : EB-7-2/10/10 Lab ID : BMI10021110-05A Date Received : 02/11/10 Date Sampled : 02/10/10 09:15	*** None Found ***	ND	2.0 μg/L	02/16/10 12:22	02/16/10 12:22
Client ID: TB-7-2/10/10 Lab ID: BMI10021110-06A Date Received: 02/11/10 Date Sampled: 02/10/10 00:00	*** None Found ***	ND	2.0 μg/L	02/16/10 12:00	02/16/10 12:00

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger L. Scholl. Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date



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### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

O005862/IDI

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021110-02A

Client I.D. Number: MW-23-3

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/10/10 08:38

Received: 02/11/10

Extracted: 02/16/10 13:29 Analyzed: 02/16/10 13:29

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND .	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
0.4	4.0 Dilement of the control (CDD)									

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

Tetrachloroethene

ND = Not Detected

Roger Scholl Kando Soulur

Walter Herilmon

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/24/10 Report Date



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021110-03A

Client I.D. Number: MW-23-2

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/10/10 08:58

Received: 02/11/10

Extracted: 02/16/10 13:52 Analyzed: 02/16/10 13:52

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND	0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q 1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND	0.50	µg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	1.2	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND	0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachioroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur

Walter Hirihow

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/24/10
Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

Client I.D. Number: MW-23-1

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021110-04A

Attn:

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/10/10 09:33

Received: 02/11/10

Extracted: 02/16/10 14:14 Analyzed: 02/16/10 14:14

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	Reporting I	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1.1.1.2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
· 14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	3.2		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

0.55

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

35 Tetrachloroethene

Roger Scholl Kandy Saulner

Walter Hiridan

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

µg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/24/10

**Report Date** 



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

Client I.D. Number: EB-7-2/10/10

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021110-05A

Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/10/10 09:15

Received: 02/11/10

Extracted: 02/16/10 12:22 Analyzed: 02/16/10 12:22

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0		37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50		38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50		39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q 1.0		40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	. •	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	. •	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0		43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50		44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50		45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	. •	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	. •	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	. •	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.50		51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50		52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50		53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND	0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50		56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50		57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	. •	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.50		60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50		61	Naphthalene	ND	1.0	μg/L
27	4-Methył-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50		63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50		64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50		65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND	0.50		66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50					, , , , , , ,	
33	Dibromochloromethane	. ND	0.50	, ,					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

Tetrachloroethene

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples. Report Date



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021110-06A

Client I.D. Number: TB-7-2/10/10

David Conner Attn:

Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/10/10 00:00

Received: 02/11/10

Extracted: 02/16/10 12:00 Analyzed: 02/16/10 12:00

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	porting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	. ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	<b>N</b> D	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	- 57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	µg/L					
0.4	4.0 D/L									

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

Tetrachloroethene

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples. **Report Date** 



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### **VOC Sample Preservation Report**

Alpha's Sample ID	Client's Sample ID	Matrix	рН
10021110-02A	MW-23-3	Aqueous	2
10021110-03A	MW-23-2	Aqueous	2
10021110-04A	MW-23-1	Aqueous	2
10021110-05A	EB-7-2/10/10	Aqueous	2
10021110-06A	TB-7-2/10/10	Aqueous	2

2/24/10



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<b>Date:</b> 22-Feb-10		(	QC S	umma	ry Repoi	t			<b>Work Ordo</b> 10021110	
Method Blan	nk	5. 2.	Type: I		Test Code: <b>E</b> Batch ID: <b>236</b>		thod 314.0	Analysis Date	e: <b>02/15/2010 13:58</b>	····
Sample ID:	MB-23602	Units : µg/L		Run ID:	C_3_100215	A		Prep Date:	02/15/2010 11:55	
Analyte		Result	PQL	SpkVa	al SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual
Perchlorate		ND		1						
Laboratory	Fortified Blank		Type: I	LFB	Test Code: E	PA Met	thod 314.0			
File ID: <b>19</b>					Batch ID: 236	02		Analysis Date	e: <b>02/15/2010 14:35</b>	
Sample ID:	LFB-23602	Units : µg/L		Run ID: I	C_3_100215	A		Prep Date:	02/15/2010 11:55	
Analyte		Result	PQL	SpkVa	al SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual
Perchlorate		26.9		2 2	5	107	85	115		
Sample Mat	rix Spike		Type: I	LFM	Test Code: E	PA Met	thod 314.0			
File ID: <b>24</b>					Batch ID: 236	02		Analysis Date	e: <b>02/15/2010 16:07</b>	
Sample ID:	10021002-01ALFM	Units : <b>µg/L</b>		Run ID:	C_3_100215	A		Prep Date:	02/15/2010 11:55	
Analyte		Result	PQL	SpkVa	al SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual
Perchlorate		22.3		2 2	5 0	89	80	120		
Sample Mat	rix Spike Duplicate		Type: I	LFMD	Test Code: E	PA Met	thod 314.0			
File ID: <b>25</b>	•				Batch ID: 236	02		Analysis Date	e: <b>02/15/2010 16:25</b>	
Sample ID:	10021002-01ALFMD	Units : µg/L		Run ID:	C_3_100215	A		Prep Date:	02/15/2010 11:55	
Analyte		Result	PQL	SpkVa	al SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPDR	efVal %RPD(Limit)	Qual
Perchlorate		22.6		2 2	5 0	90	80	120 22	.27 1.5(15)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 22-Feb-10	(	QC S	ummar	y Repor	t			<b>Work Orde</b> 10021110	
Method Blank		Type; N	IBLK Te	est Code: El	A Met	thod 200.8			
File ID: 021710.B\142SMPL.D\			Ва	atch ID: 236	13K		Analysis Date	02/18/2010 02:25	
Sample ID: MB-23613	Units : <b>mg/L</b>		Run ID: IC	P/MS_1002	17G		Prep Date:	02/16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qual
Chromium (Cr)	ND	0.00	5						
Laboratory Control Spike		Type: L	.CS Te	est Code: Ef	A Met	thod 200.8			
File ID: 021710.B\143_LCS.D\			Ва	atch ID: <b>236</b> °	13K		Analysis Date	: 02/18/2010 02:31	
Sample ID: LCS-23613	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date:	02/16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qual
Chromium (Cr)	0.0513	0.00	0.05		103	80	120		
Sample Matrix Spike		Type: N	1S Te	est Code: EF	A Met	thod 200.8			
File ID: 021710.B\147SMPL.D\			Ba	atch ID: 236	13K		Analysis Date	: 02/18/2010 02:53	
Sample ID: 10021002-06AMS	Units : <b>mg/L</b>		Run ID: IC	P/MS_1002 <sup>-</sup>	17G		Prep Date:	02/16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qual
Chromium (Cr)	0.0527	0.005	0.05	0	105	80	120		
Sample Matrix Spike Duplicate		Type: N	ISD Te	est Code: EF	A Met	hod 200.8			
File ID: 021710.B\148SMPL.D\			Ba	atch ID: 2361	13K		Analysis Date	: 02/18/2010 02:59	
Sample ID: 10021002-06AMSD	Units : mg/L		Run ID: IC	P/MS_1002 <sup>-</sup>	17G		Prep Date:	02/16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPDRe	fVal %RPD(Limit)	Qual
Chromium (Cr)	0.0535	0.005	0.05	0	107	80	120 0.052	268 1.5(20)	

### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 22-Feb-2010	(	QC Sumn	ary Report			<b>Work Orde</b> 10021110	
Method Blank		Type <b>MBLK</b>	Test Code: EPA Metho				
File ID: 10021607.D			Batch ID: MS15W0216	<b>M</b> Ana	alysis Date:	02/16/2010 10:31	
Sample ID: MBLK MS15W0216M	Units : µg/L		D: MSD_15_100216B		•	02/16/2010 10:31	
Analyte	Result	PQL Spk	Val SpkRefVal %REC L	CL(ME) UCL(MI	E) RPDRefV	al %RPD(Limit)	Qua
Dichlorodifluoromethane	ND	0.5					
Chloromethane	ND	1					
Vinyl chloride	ND	0.5					
Chloroethane	ND	0.5					
Bromomethane Trichlorofluoromethane	ND ND	1					
1,1-Dichloroethene	ND ND	0.5 0.5					
Dichloromethane	ND	1					
Freon-113	ND	0.5					
trans-1,2-Dichloroethene	ND	0.5					
Methyl tert-butyl ether (MTBE)	ND	0.5					
1,1-Dichloroethane 2-Butanone (MEK)	ND ND	0.5					
cis-1,2-Dichloroethene	ND ND	10 0.5					
Bromochloromethane	ND	0.5					
Chloroform	ND	0.5					
2,2-Dichloropropane	ND	0.5					
1,2-Dichloroethane	ND	0.5					
1,1,1-Trichloroethane 1,1-Dichloropropene	ND ND	0.5 0.5					
Carbon tetrachloride	ND ND	0.5 0.5					
Benzene	ND	0.5					
Dibromomethane	ND	0.5					
1,2-Dichloropropane	ND	0.5					
Trichloroethene	ND	0.5					
Bromodichloromethane 4-Methyl-2-pentanone (MIBK)	ND ND	0.5 2.5					
cis-1,3-Dichloropropene	ND ND	2.5 0.5					
trans-1,3-Dichloropropene	ND	0.5					
1,1,2-Trichloroethane	ND	0.5					
Toluene	ND	0.5					
1,3-Dichloropropane Dibromochloromethane	ND	0.5					
1,2-Dibromoethane (EDB)	ND ND	0.5 1					
Tetrachloroethene	ND	0.5					
1,1,1,2-Tetrachloroethane	ND	0.5					
Chlorobenzene	ND	0.5					
Ethylbenzene	ND	0.5					
m,p-Xylene Bromoform	ND ND	0.5 0.5					
Styrene	ND	0.5					
o-Xylene	ND	0.5					
1,1,2,2-Tetrachloroethane	ND	0.5					
1,2,3-Trichloropropane	ND	1					
Isopropylbenzene Bromobenzene	ND	0.5					
n-Propylbenzene	ND ND	0.5 0.5					
4-Chlorotoluene	ND ND	0.5 0.5					
2-Chlorotoluene	ND	0.5					
1,3,5-Trimethylbenzene	ND	0.5					
tert-Butylbenzene	ND	0.5					
1,2,4-Trimethylbenzene	ND ND	0.5					
sec-Butylbenzene 1,3-Dichlorobenzene	ND ND	0.5 0.5					
1,4-Dichlorobenzene	ND ND	0.5 0.5					
4-Isopropyltoluene	ND	0.5					
1,2-Dichlorobenzene	ND	0.5					
n-Butylbenzene	ND	0.5					
1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene	ND	2.5					
Naphthalene	ND . ND	1 1					
Hexachlorobutadiene	ND	1					
1,2,3-Trichlorobenzene	ND	1					
Surr: 1,2-Dichloroethane-d4	9.54	•	10 95	70 130			
Surr: Toluene-d8	10.1		10 101	70 130			



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<b>Date:</b> 22-Feb-2010	(	QC Su	mmar	y Report			<b>Work Ord</b> 10021110	
Surr: 4-Bromofluorobenzene	10.3		10	103	70	130		
<b>Laboratory Control Spike</b>		Type LC	S T	est Code: EPA Met	hod SW8			
File ID: <b>10021605.D</b>			В	atch ID: <b>MS15W02</b> 1	I6M	Analysis l	Date: 02/16/2010 09:31	
Sample ID: LCS MS15W0216M	Units : µg/L	į		SD_15_100216B		Prep Date		
Analyte	Result	PQL	SpkVal	SpkRefVal %REC	LCL(ME)	UCL(ME) RP	DRefVal %RPD(Limit)	Qua
Dichlorodifluoromethane	8.69	1	10	87	70	130		
Chloromethane	6.86	2	10	69	70(70)	130		L50
Vinyl chloride	10.4	1	10	104	70	130		
Chloroethane Bromomethane	8.41 5.95	1 2	10 10	84 60	70 70(70)	130 130		L50
Trichlorofluoromethane	10.4	1	10	104	70(70) 70	130		L30
1,1-Dichloroethene	10.5	1	10	105	70	130		
Dichloromethane	10.3	2	10	103	70	130		
trans-1,2-Dichloroethene	10.9	1	10	109	70	130		
Methyl tert-butyl ether (MTBE)	12.2	0.5	10	122	70	130		
1,1-Dichloroethane cis-1,2-Dichloroethene	10.2	1	10	102	70 70	130		
Bromochloromethane	11.6 12.2	1	10 10	116 122	70 70	130 130		
Chloroform	10.1	1	10	101	70	130		
2,2-Dichloropropane	11.1	1	10	111	70	130		
1,2-Dichloroethane	11.8	1	10	118	70	130		
1,1,1-Trichloroethane	11.1	1	10	111	70	130		
1,1-Dichloropropene Carbon tetrachloride	10.8 11.4	1	10 10	108 114	70 70	130 130		
Benzene	10.2	0.5	10	102	70	130		
Dibromomethane	12.6	1	10	126	70	130		
1,2-Dichloropropane	11.2	1	10	112	70	130		
Trichloroethene	11.3	1	10	113	70	130		
Bromodichloromethane cis-1,3-Dichloropropene	12.4	1	10	124	70 70	130		
trans-1,3-Dichloropropene	11.1 11.6	1	10 10	111 116	70 70	130 130		
1,1,2-Trichloroethane	12.1	1	10	121	70	130		
Toluene	10.2	0.5	10	102	70	130		
1,3-Dichloropropane	12.6	1	10	126	70	130		
Dibromochloromethane 1,2-Dibromoethane (EDB)	12.4	1	10	124	70	130		L51
Tetrachloroethene	26.3	2	20	131	70 70	130(130)		LOI
1.1.1.2-Tetrachloroethane	11 11.8	1	10 10	110 118	70 70	130 130		
Chlorobenzene	10.4	i	10	104	70	130		
Ethylbenzene	10.1	0.5	10	101	70	130		
m,p-Xylene	10.8	0.5	10	108	70	130		
Bromoform Styrene	12	1	10	120	70 70	130		
o-Xylene	11.7 11	1 0.5	10 10	117 110	70 70	130 130		
1,1,2,2-Tetrachloroethane	11.4	1	10	114	70	130		
1,2,3-Trichloropropane	22.8	2	20	114	70	130		
Isopropylbenzene	10.3	1	10	103	70	130		
Bromobenzene n-Propylbenzene	10.4	1	10	104	70	130		
4-Chlorotoluene	9.94 10.5	1	10 10	99 105	70 70	130 130		
2-Chlorotoluene	10.1	1	10	103	70 70	130		
1,3,5-Trimethylbenzene	9.67	1	10	97	70	130		
tert-Butylbenzene	9.72	1	10	97	70	130		
1,2,4-Trimethylbenzene	9.76	1	10	98	70	130		
sec-Butylbenzene 1,3-Dichlorobenzene	10.1 10.1	1 1	10 10	101 101	70 70	130 130		
1,4-Dichlorobenzene	9.7	1	10	97	70	130		
4-Isopropyltoluene	9.75	1	10	98	70	130		
1,2-Dichlorobenzene	9.72	1	10	97	70	130		
n-Butylbenzene	9.8	1	10	98	70	130		
1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene	57.3 10.8	3	50	115	70 70	130		
Naphthalene	12.2	2 2	10 10	108 122	70 70	130 130		
Hexachlorobutadiene	17.3	2	20	87	70 70	130		
1,2,3-Trichlorobenzene	11.1	2	10	111	70	130		
Surr: Tolunna de	9.72		10	97	70	130		
Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	9.48 10.9		10	95 100	70 70	130		
	10.9		10	109	70	130		



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Date: Work Order: QC Summary Report 22-Feb-2010 10021110 Test Code: EPA Method SW8260B Sample Matrix Spike Type MS File ID: 10021608.D Analysis Date: 02/16/2010 10:53 Batch ID: MS15W0216M Sample ID: 10021203-03AMS Prep Date: 02/16/2010 10:53 Units: µg/L Run ID: MSD\_15\_100216B Analyte Result **PQL** SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Dichlorodifluoromethane 42.9 13 167 2.5 Chloromethane 145 37.5 10 50 0 75 28 Vinyl chloride 50.5 2.5 50 n 101 43 134 Chloroethane 80 39 154 40.2 2.5 50 Bromomethane 176 21.1 10 50 n 42 19 Trichlorofluoromethane 42 2.5 50 0 84 34 160 1.1-Dichloroethene 46.4 2.5 50 0 93 60 130 Dichloromethane 101 68 130 50.3 O 10 50 trans-1,2-Dichloroethene 50.6 2.5 50 0 101 63 130 Methyl tert-butyl ether (MTBE) 59.3 1.3 50 0 119 56 141 1.1-Dichloroethane 47.8 2.5 50 n 96 61 130 cis-1.2-Dichloroethene 108 130 54.1 2.5 50 Bromochloromethane 70 130 58.2 2.5 50 O 116 Chloroform 46.3 2.5 50 0 93 67 130 2.2-Dichloropropane 50.7 2.5 50 101 30 152 1,2-Dichloroethane 55.2 2.5 50 n 110 60 135 1,1,1-Trichloroethane 137 50.7 2.5 50 101 59 1.1-Dichloropropene 50.6 2.5 50 0 101 63 130 Carbon tetrachloride 51.1 2.5 0 102 50 147 50 Benzene 47.3 1.3 50 95 67 130 Dibromomethane 133 59 1 2.5 50 0 118 69 1,2-Dichloropropane 51.7 2.5 50 103 69 130 Trichloroethene 50.1 69 130 2.5 50 0 100 Bromodichloromethane 55 2.5 0 110 66 134 50 cis-1,3-Dichloropropene 49.5 50 99 63 130 trans-1.3-Dichloropropene 51.5 2.5 103 66 131 50 1,1,2-Trichloroethane 55.5 2.5 50 0 111 68 130 Toluene 46.8 1.3 50 0 94 66 130 1,3-Dichloropropane 58.6 70 130 2.5 50 n 117 Dibromochloromethane 57.4 2.5 50 n 115 70 130 1,2-Dibromoethane (EDB) 70 130 123 5 100 0 123 Tetrachloroethene 50.3 2.5 0 101 61 134 50 1,1,1,2-Tetrachloroethane 52.9 2.5 50 106 70 130 Chlorobenzene 96 70 130 48.1 2.5 50 n Ethylbenzene 46.3 93 130 1.3 50 m.p-Xvlene 49.9 130 1.3 50 0 99.8 64 Bromoform 55.3 2.5 64 138 50 111 Styrene 54.2 2.5 50 108 69 130 o-Xylene 50.2 70 130 1.3 50 0 100 1,1,2,2-Tetrachloroethane 53.8 2.5 50 0 108 65 131 1.2.3-Trichloropropane 105 10 100 105 70 130 Isopropylbenzene 44.7 2.5 89 64 138 50 0 Bromobenzene 45.9 70 130 2.5 50 0 92 n-Propylbenzene 66 43.5 2.5 50 0 87 132 4-Chlorotoluene 46.1 2.5 50 n 92 70 130 2-Chlorotoluene 43.4 87 130 2.5 50 1,3,5-Trimethylbenzene 42.2 2.5 50 0 84 66 136 tert-Butylbenzene 42.3 2.5 50 0 85 65 137 1,2,4-Trimethylbenzene 42.9 2.5 50 0 86 65 137 sec-Butylbenzene 43.4 0 87 66 2.5 50 134 1.3-Dichlorobenzene 44.5 2.5 50 0 89 70 130 1,4-Dichlorobenzene 42 7 2.5 50 85 70 130 0 4-Isopropyltoluene 42.6 2.5 50 0 85 66 137 1,2-Dichlorobenzene 42 2.5 50 0 84 70 130 n-Butylbenzene 42.6 2.5 0 85 60 142 50 1,2-Dibromo-3-chloropropane (DBCP) 255 250 0 15 102 67 130 1,2,4-Trichlorobenzene 45.7 10 50 0 91 61 137 Naphthalene 53.7 10 0 107 40 50 167 Hexachlorobutadiene 73.9 10 100 74 61 130 1.2,3-Trichlorobenzene 47.2 10 50 0 94 51 144 Surr: 1,2-Dichloroethane-d4 97 48.4 50 70 130 Surr: Toluene-d8 47.9 50 96 70 130 Surr: 4-Bromofluorobenzene 53.1 50 106 70 130



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<b>Date:</b> 22-Feb-2010	(	QC Sum	mary	Report					<b>Work Ord</b> 1002111	
Sample Matrix Spike Duplicate		Type MSD	Tes	t Code: EP	A Met	hod SW82	260B			
File ID: 10021609.D			Bat	ch ID: <b>MS1</b> 5	5W021	16M	Analy	sis Date: 0	2/16/2010 11:16	
Sample ID: 10021203-03AMSD	Units : µg/L	Run	ID: MS	D_15_1002 <sup>4</sup>	16B		Prep	Date: 0	2/16/2010 11:16	
Analyte	Result					LCL(ME)	UCL(ME)	RPDRefVa	l %RPD(Limit)	Qua
Dichlorodifluoromethane	47.2	2.5	50	0	94	13	167	42.9	9.5(20)	
Chloromethane	41.6	10	50	0	83	28	145	37.45	10.6(20)	
Vinyl chloride	57.4	2.5	50	ŏ	115	43	134	50.46	12.8(20)	
Chloroethane	43.8	2.5	50	Ö	88	39	154	40.22	8.5(20)	
Bromomethane	31.2	10	50	0	62	19	176	21.06	38.7(20)	R58
Trichlorofluoromethane	51.9	2.5	50	0	104	34	160	42.04	21.0(20)	R5
1,1-Dichloroethene	51.4	2.5	50	0	103	60	130	46.41	10.3(20)	
Dichloromethane	52.3	10	50	0	105	68	130	50.3	3.8(20)	
trans-1,2-Dichloroethene	53.4	2.5	50	0	107	63	130	50.59	5.3(20)	
Methyl tert-butyl ether (MTBE)	60.9	1.3	50	0	122	56	141	59.26	2.7(20)	
1,1-Dichloroethane	50.3	2.5	50	0	101	61	130	47.81	5.1(20)	
cis-1,2-Dichloroethene	56.8	2.5	50	0	114	70	130	54.06	4.9(20)	
Bromochloromethane Chloroform	60	2.5	50	0	120	70	130	58.16	3.2(20)	
2,2-Dichloropropane	48.7	2.5	50	0	97 109	67 30	130 152	46.3 50.7	5.0(20) 6.2(20)	
1,2-Dichloroethane	53.9 56.9	2.5 2.5	50 50	0	108 114	30 60	135	50.7 55.16	3.0(20)	
1,1,1-Trichloroethane	53.5	2.5	50 50	0	107	59	137	50.67	5.4(20)	
1,1-Dichloropropene	53.5	2.5	50	Õ	107	63	130	50.55	5.6(20)	
Carbon tetrachloride	55.4	2.5	50	Ŏ	111	50	147	51.08	8.2(20)	
Benzene	49.9	1.3	50	0	99.7	67	130	47.33	5.2(20)	
Dibromomethane	59.9	2.5	50	0	120	69	133	59.1	1.3(20)	
1,2-Dichloropropane	53.4	2.5	50	0	107	69	130	51.66	3.3(20)	
Trichloroethene	53	2.5	50	0	106	69	130	50.05	5.7(20)	
Bromodichloromethane	59.1	2.5	50	0	118	66	134	55.04	7.1(20)	
cis-1,3-Dichloropropene trans-1,3-Dichloropropene	51.3	2.5	50	0	103	63	130	49.5	3.7(20)	
1,1,2-Trichloroethane	54.3 58.4	2.5 2.5	50 50	0 0	109 117	66 68	131 130	51.45 55.51	5.4(20) 5.1(20)	
Toluene	48.7	1.3	50 50	0	97	66	130	46.78	4.1(20)	
1,3-Dichloropropane	60.7	2.5	50	0	121	70	130	58.63	3.4(20)	
Dibromochloromethane	59.6	2.5	50	Ŏ	119	70	130	57.37	3.8(20)	
1,2-Dibromoethane (EDB)	126	5	100	Ō	126	70	130	123.2	2.6(20)	
Tetrachloroethene	53.2	2.5	50	0	106	61	134	50.31	5.6(20)	
1,1,1,2-Tetrachloroethane	55.8	2.5	50	0	112	70	130	52.92	5.2(20)	
Chlorobenzene	49.6	2.5	50	0	99	70	130	48.09	3.1(20)	
Ethylbenzene m.p-Xvlene	48.2	1.3	50	0	96	68	130	46.27	4.1(20)	
Bromoform	52 59.1	1.3 2.5	50 50	0	104 118	64 64	130 138	49.91 55.3	4.1(20) 6.6(20)	
Styrene	56.8	2.5 2.5	50 50	0	114	69	130	54.21	4.7(20)	
o-Xylene	52.3	1.3	50	0	105	70	130	50.23	4.1(20)	
1,1,2,2-Tetrachloroethane	55.8	2.5	50	0	112	65	131	53.75	3.8(20)	
1,2,3-Trichloropropane	109	10	100	Õ	109	70	130	105.3	3.9(20)	
Isopropylbenzene	48.1	2.5	50	0	96	64	138	44.68	7.4(20)	
Bromobenzene	48.6	2.5	50	0	97	70	130	45.89	5.6(20)	
n-Propylbenzene	46.4	2.5	50	0	93	66	132	43.53	6.4(20)	
4-Chlorotoluene	49.3	2.5	50	0	99	70	130	46.06	6.7(20)	
2-Chlorotoluene 1.3.5-Trimethylbenzene	46.8	2.5	50	0	94	70	130	43.4	7.5(20)	
tert-Butylbenzene	45.3 45.6	2.5	50	0	91	66 65	136	42.23	7.1(20)	
1,2,4-Trimethylbenzene	45.6 46.1	2.5 2.5	50 50	0	91 92	65 65	137 137	42.34 42.86	7.5(20) 7.3(20)	
sec-Butylbenzene	47.3	2.5	50	0	95	66	134	43.44	8.5(20)	
1,3-Dichlorobenzene	48.1	2.5	50	Ö	96	70	130	44.5	7.7(20)	
1,4-Dichlorobenzene	45.7	2.5	50	Ö	91	70	130	42.66	7.0(20)	
4-Isopropyltoluene	46	2.5	50	0	92	66	137	42.58	7.6(20)	
1,2-Dichlorobenzene	46.1	2.5	50	0	92	70	130	41.97	9.3(20)	
n-Butylbenzene	46.6	2.5	50	0	93	60	142	42.58	9.1(20)	
1,2-Dibromo-3-chloropropane (DBCP)	277	15	250	0	111	67	130	255.5	8.0(20)	
1,2,4-Trichlorobenzene	51.2	10	50	0	102	61	137	45.65	11.5(20)	
Naphthalene Hexachlorobutadiene	59.7	10	50	0	119	40	167	53.7	10.6(20)	
1,2,3-Trichlorobenzene	81.5 53.7	10 10	100	0	81	61 51	130	73.9	9.7(20)	
Surr: 1,2-Dichloroethane-d4	53.7 48.2	10	50 50	0	107 96	51 70	144 130	47.21	12.9(20)	
Surr: Toluene-d8	40.2 47		50 50		96 94	70 70	130			
Surr: 4-Bromofluorobenzene	54.5		50		109	70 70	130			



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:** 22-Feb-2010

### QC Summary Report

Work Order: 10021110

### **Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

L51 = Analyte recovery was above acceptance limits for the LCS, but was acceptable in the MS/MSD.

R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

R58 = MS/MSD RPD exceeded the laboratory control limit.

### Billing Information:

# CHAIN-OF-CUSTODY RECORD

## Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

Report Attention TEL: (775) 355-1044 FAX: (775) 355-0406 Phone Number (818) 393-2808 x connerd@battelle.org EMail Address

Battelle Memorial Institute

San Diego, CA 92110

Suite C-205 3990 Old Town Ave

Betsy Cutie Shane Walton (614) 424-4899 (614) 424-4117 x cutiee@batelle.org waltons@battelle.org

Page: 1 of 1

Report Due By: 5:00 PM On: 25-Feb-2010 WorkOrder: BMIS10021110

EDD Required: Yes

Sampled by: Client Cooler Temp Samples Received

11-Feb-2010 Date Printed

Alpha Sample ID BMI10021110-06A TB-7-2/10/10 BMI10021110-05A EB-7-2/10/10 BMI10021110-02A MW-23-3 BMI10021110-01A QC Level: DS4 Client's COC #: 24129 BMI10021110-04A MW-23-1 BMI10021110-03A MW-23-2 MW-23-4 Sample ID = DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates Job: G005862/JPL Groundwater Monitoring å Š ğ Š g å Matrix Date 02/10/10 00:00 02/10/10 09:15 02/10/10 08:38 02/10/10 08:12 02/10/10 08:58 Collection No. of Bottles 02/10/10 09:33 Alpha S S Ç Ç Sub 0 0 0 TAT 6 6 5 5 5 5 Perchlorate Perchlorate Perchlorate Perchlorate 314\_W METALS\_D VOC\_TIC\_ Ç Ϋ́ Ç VOC by 524 VOC by 524 Criteria Criteria VOC\_W Requested Tests Reno Trip Blank 8/25/09 Sample Remarks Level IV QC 11-Feb-2010

Logged in by: maouth Elizabeth Hollox Comments:

Company

Alpha Analytical, Inc.

2-11-10 /618

Date/Time

Security seals intact. Frozen ice. Temp Blank #7707 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).:

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

### Name GENDLY TOMPKINS /BATTELLE Billing Information:

Phone Number. City, State, Zip\_ Address 505 KING AVE. COCHMBUS, OH

Time Date See Key
Sampled Sampled Below

City, State, Zip

0-5

JOHN AVE.

DAVID

AN DIEGO

Sampled by

SATTELLE

812 211010 AQ

BMI100211

Lab ID Number

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### Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21

Samples Collected From Which State? 24129

AZ CA NV WA Page # J of J

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o# 43201		Sparks, Nevada 89431-5778 Phone (775) 355-1044 Fax (775) 355-0406	1-5//8	Ana	Analyses Required	
Fax						
CONNEIZ	Po. かい2	300 # dor	\$005 862		• <u>/</u>	/ Required QC Level?
	EMail Address			42		/
	(614) 726 - 7311	Fax #		(52)	<i>'</i>	EDD / EDF? YES NO
Z.	Report Attention	,	Total and type of	DE EXE	<u></u>	Global ID #
mber ( Office Use Only )	Sample Description	TAT	Filtered ** See below	7		REMARKS
)D211/D-01	MW-23-4	Nonn	1/0	×		The state of the s
, D2	Mw- 23-3		VIP5	X X X		LEVEL IF OC
		ŗ				
. 63	Mw-23-2			XXX		
9	MW-23-1			XX		
83	OB EB-7-2/10	0/10		XXX		EQUIP. BLONK
- Do 778-	TB-7-2110	//0	~ ~	X		TRIP BLANK
·						

# ADDITIONAL INSTRUCTIONS:

515

533

888

858

Signature	Print Name	Company	Date	Time
Relinquished by	MARCO RENDO TO	HUSIGHT EEL, INC.	2/10/10 1101	1101
Received by	Anthon Stall	Alph. Avalating	2/10/10 1101	1011
Relinquished by	Anthony Stark	Alpha Alchates	3/10/13	(/\d)
Received by many down	7	17 I lona	2-11-10	11018
Relinquished by				. W. O
Received by				
				2

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis \*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\*: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:** 25-Feb-10 David Conner

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110 Suite C-205

**CASE NARRATIVE** 

(818) 393-2808 **Job:** 

G005862/JPL Groundwater Monitoring

Work Order:

BMI10021203

Cooler Temp:

4°C

Work Order. Bivillou21203	C	ooier Temp: 4 C	
Alpha's Sample ID	Client's Sample ID	Matrix	
10021203-01A	MW-11-4	Aqueous	
10021203-02A	MW-11-3	Aqueous	
10021203-03A	MW-11-2	Aqueous	
10021203-04A	MW-11-1	Aqueous	
10021203-05A	DUPE-4-1Q10	Aqueous	
10021203-06A	MW-22-3	Aqueous	
10021203-07A	MW-22-2	Aqueous	
10021203-08A	MW-22-1	Aqueous	
10021203-09A	EB-8-2/11/10	Aqueous	
10021203-10A	TB-8-2/11/10	Aqueous	

### **Manually Integrated Analytes**

Alpha's Sample ID	Test Reference	Analyte
10021203-04A	EPA Method 314.0	Perchlorate
10021203-05A	EPA Method 314.0	Perchlorate
10021203-06A	EPA Method 314.0	Perchlorate
10021203-07A	EPA Method 314.0	Perchlorate
10021203-08A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Saulner

Walter Hirkon



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn:

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

гах.

Date Received: 02/12/10

Job:

G005862/JPL Groundwater Monitoring

Anions by IC

EPA Method 300.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
			·		
Client ID: MW-11-1					
Lab ID: BMI10021203-04A	Nitrite (NO2) - N	ND	0.25  mg/L	02/12/10 12:43	02/12/10 14:03
Date Sampled 02/11/10 11:15	Nitrate (NO3) - N	1.1	0.25 mg/L	02/12/10 12:43	02/12/10 14:03
-	Phosphate, ortho - P	ND	0.50 mg/L	02/12/10 12:43	02/12/10 14:03
	Sulfate (SO4)	58	0.50 mg/L	02/12/10 12:43	02/12/10 14:03
	Chloride	29	0.50 mg/L	02/12/10 12:43	02/12/10 14:03
Client ID: DUPE-4-1Q10					
Lab ID: BMI10021203-05A	Nitrite (NO2) - N	ND	0.25 mg/L	02/12/10 12:43	02/12/10 14:59
Date Sampled 02/11/10 00:00	Nitrate (NO3) - N	1.1	0.25 mg/L	02/12/10 12:43	02/12/10 14:59
•	Phosphate, ortho - P	ND	0.50 mg/L	02/12/10 12:43	02/12/10 14:59
	Sulfate (SO4)	58	0.50 mg/L	02/12/10 12:43	02/12/10 14:59
	Chloride	30	0.50 mg/L	02/12/10 12:43	02/12/10 14:59

ND = Not Detected

Roger Scholl

Kandy Saulmer

Walter Hinkman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Date Received: 02/12/10

Job: G

G005862/JPL Groundwater Monitoring

# Perchlorate by Ion Chromatography EPA Method 314.0

			- · · · · ·	D :	
	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-11-4 Lab ID: BMI10021203-01A Date Sampled 02/11/10 09:50	Perchlorate	ND	1.00 μg/L	02/12/10 11:07	02/12/10 16:04
Client ID: MW-11-3 Lab ID: BMI10021203-02A Date Sampled 02/11/10 10:16	Perchlorate	ND	1.00 μg/L	02/12/10 11:07	02/12/10 16:22
Client ID: <b>MW-11-2</b> Lab ID: BMI10021203-03A Date Sampled 02/11/10 10:47	Perchlorate	ND	1.00 μg/L	02/12/10 11:07	02/12/10 16:41
Client ID: MW-11-1 Lab ID: BMI10021203-04A Date Sampled 02/11/10 11:15	Perchlorate	1.14	1.00 μg/L	02/12/10 11:07	02/12/10 17:36
Client ID: <b>DUPE-4-1Q10</b> Lab ID: BMI10021203-05A Date Sampled 02/11/10 00:00	Perchlorate	1.12	1.00 μg/L	02/12/10 11:07	02/12/10 17:54
Client ID: MW-22-3 Lab ID: BMI10021203-06A Date Sampled 02/11/10 07:53	Perchlorate	2.71	1.00 μg/L	02/12/10 11:07	02/12/10 18:13
Client ID: MW-22-2 Lab ID: BM110021203-07A Date Sampled 02/11/10 08:15	Perchlorate	2.13	1.00 μg/L	02/12/10 11:07	02/12/10 18:31
Client ID: MW-22-1 Lab ID: BMI10021203-08A Date Sampled 02/11/10 08:40	Perchlorate	2.55	1.00 μg/L	02/12/10 11:07	02/12/10 19:26
Client ID: <b>EB-8-2/11/10</b> Lab ID: BMI10021203-09A Date Sampled 02/11/10 08:29	Perchlorate	ND	1.00 μg/L	02/12/10 11:07	02/12/10 19:45



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ND = Not Detected

Roger Scholl 1

Kandy Saulner

Walter Hirkman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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2/25/10



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

Attn:

**David Conner** 

Phone:

(818) 393-2808

Fax:

(614) 458-6641

D-4- D

Date Received: 02/12/10

Job:

G005862/JPL Groundwater Monitoring

Metals by ICPMS

EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-11-3 Lab ID: BMI10021203-02A Date Sampled 02/11/10 10:16	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 20:53
Client ID: MW-11-2 Lab ID: BMI10021203-03A Date Sampled 02/11/10 10:47	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 20:31
Client ID: MW-11-1 Lab ID: BMI10021203-04A Date Sampled 02/11/10 11:15	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 20:59
Client ID: <b>DUPE-4-1Q10</b> Lab ID: BMI10021203-05A Date Sampled 02/11/10 00:00	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 21:04
Client ID: MW-22-3 Lab ID: BMI10021203-06A Date Sampled 02/11/10 07:53	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 21:10
Client ID: MW-22-2 Lab ID: BMI10021203-07A Date Sampled 02/11/10 08:15	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 21:16
Client ID: MW-22-1 Lab ID: BMI10021203-08A Date Sampled 02/11/10 08:40	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 21:21
Client ID: <b>EB-8-2/11/10</b> Lab ID: BMI10021203-09A Date Sampled 02/11/10 08:29	Chromium (Cr)	ND	0.0050 mg/L	02/12/10 11:22	02/17/10 21:27

ND = Not Detected

Roger Scholl

Kandy Saulner

Walter Hirihon

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/25/10 Report Date



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## **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

San Diego, CA 92110 Job: G005862/JPL G

G005862/JPL Groundwater Monitoring

#### Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-11-4 Lab ID: BMI10021203-01A Date Received: 02/12/10 Date Sampled: 02/11/10 09:50	Sulfur dioxide	4.5	2.0 μg/L		02/16/10 14:36
Client ID : MW-11-3 Lab ID : BM110021203-02A Date Received : 02/12/10 Date Sampled : 02/11/10 10:16	Sulfur dioxide	5.9	2.0 μg/L	02/16/10 14:58	02/16/10 14:58
Client ID : MW-11-2 Lab ID : BMI10021203-03A Date Received : 02/12/10 Date Sampled : 02/11/10 10:47	Sulfur dioxide	5.6	2.0 μg/L	02/16/10 15:20	02/16/10 15:20
Client ID : MW-11-1 Lab ID : BMI10021203-04A Date Received : 02/12/10 Date Sampled : 02/11/10 11:15	Sulfur dioxide	2.6	2.0 μg/L	02/16/10 15:42	02/16/10 15:42
Client ID : <b>DUPE-4-1Q10</b> Lab ID : BMI10021203-05A Date Received : 02/12/10 Date Sampled : 02/11/10 00:00	*** None Found ***	ND	2.0 μg/L	02/16/10 16:05	02/16/10 16:05
Client ID : MW-22-3 Lab ID : BMI10021203-06A Date Received : 02/12/10 Date Sampled : 02/11/10 07:53	*** None Found ***	ND	2.0 μg/L	02/16/10 16:27	02/16/10 16:27
Client ID : MW-22-2 Lab ID : BMI10021203-07A Date Received : 02/12/10 Date Sampled : 02/11/10 08:15	*** None Found ***	ND	2.0 μg/L	02/16/10 16:49	-02/16/10 16:49
Client ID : MW-22-1 Lab ID : BMI10021203-08A Date Received : 02/12/10 Date Sampled : 02/11/10 08:40	*** None Found ***	ND	2.0 μg/L	02/16/10 17:11	02/16/10 17:11
Client ID : <b>EB-8-2/11/10</b> Lab ID : BMI10021203-09A Date Received : 02/12/10 Date Sampled : 02/11/10 08:29	*** None Found ***	ND	2.0 µg/L	02/16/10 13:07	02/16/10 13:07



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Client ID:

TB-8-2/11/10

Lab ID:

BMI10021203-10A

\*\*\* None Found \*\*\*

ND

 $2.0 \mu g/L$ 

02/16/10 12:45 02/16/10 12:45

Date Received: 02/12/10

Date Sampled: 02/11/10 00:00

ND = Not Detected

Note: Analysis conducted using EPA Method 524.2 criteria.

 $Sacramento, CA \bullet (916)\ 366-9089\ /\ Las\ Vegas, NV \bullet (702)\ 736-7522\ /\ Carson, CA \bullet (310)\ 803-7761\ /\ info@alpha-analytical.com$ 

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 

Page 1 of 1



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-01A

Client I.D. Number: MW-11-4

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/11/10 09:50

Received: 02/12/10

Extracted: 02/16/10 14:36 Analyzed: 02/16/10 14:36

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting Limit			Compound	Concentration	Reporting Limit		
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	: ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	95	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	104	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			•		

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Soulur

Walter Hirkory

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-02A

Client I.D. Number: MW-11-3

**David Conner** Attn: Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/11/10 10:16

Received: 02/12/10

Extracted: 02/16/10 14:58 Analyzed: 02/16/10 14:58

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	F	Reporting I	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1.1.1.2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chioroethane	. ND		0.50	μg/L	39	m.p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	. ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13`	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCF	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

**Report Date** Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110 Job: G005862/JPL

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-03A

Client I.D. Number: MW-11-2

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/11/10 10:47

Received: 02/12/10

Extracted: 02/16/10 15:20 Analyzed: 02/16/10 15:20

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	ug/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xvlene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochioromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	104	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	ua/L			1	, ,	

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

J=Estimated: The analyte was positively identified; the quanitation is an estimation.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur Walter

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

μg/L

μg/L

μg/L

2/25/10 Report Date

Page 1 of 1



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Attn:

David Conner Phone: (818) 393-2808

Fax:

(614) 458-6641

Alpha Analytical Number: BMI10021203-04A

Client I.D. Number: MW-11-1

Sampled: 02/11/10 11:15

Received: 02/12/10

Extracted: 02/16/10 15:42 Analyzed: 02/16/10 15:42

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Rep	orting I	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1.1.1.2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m.p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1.1.2.2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propvlbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	ug/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

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**Report Date** 

Page 1 of 1



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#### **ANALYTICAL REPORT**

Phone: (818) 393-2808

David Conner

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-05A

Client I.D. Number: DUPE-4-1Q10

Fax: (614) 458-6641

Sampled: 02/11/10 00:00

Received: 02/12/10

Extracted: 02/16/10 16:05 Analyzed: 02/16/10 16:05

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xvlene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1.1.2.2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyttoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

μg/L

µg/L

1.0



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-06A

Client I.D. Number: MW-22-3

David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/11/10 07:53

Received: 02/12/10

Extracted: 02/16/10 16:27 Analyzed: 02/16/10 16:27

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration		Reporting I	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	µg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	. ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			1	, , , ,	
33	Dibromochloromethane	ND		0.50	ua/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

Tetrachloroethene

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

μg/L

μg/L

**Report Date** 

Page 1 of 1



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-07A

Client I.D. Number: MW-22-2

Attn: **David Conner** Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/11/10 08:15

Received: 02/12/10

Extracted: 02/16/10 16:49 Analyzed: 02/16/10 16:49

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	Reporting I	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L				, ,	
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

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μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-08A Client I.D. Number: MW-22-1

**David Conner** 

Phone:

Fax:

(818) 393-2808

(614) 458-6641

Sampled: 02/11/10 08:40

Received: 02/12/10

Extracted: 02/16/10 17:11 Analyzed: 02/16/10 17:11

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Rep	orting I	Limit		Compound	Concentration	Reporting L	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	µg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)		2.5	µg/L
25	Trichloroethene	1.1		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	97	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
0.4	4.0 Diference (EDD)									

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

Tetrachloroethene

ND = Not Detected

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μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

2/25/10 Report Date

Page 1 of 1



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021203-09A

Client I.D. Number: EB-8-2/11/10

**David Conner** Attn: Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/11/10 08:29

Received: 02/12/10

Extracted: 02/16/10 13:07 Analyzed: 02/16/10 13:07

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xvlene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%RE
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%RE
31	Toluene	ND		0.50	μg/Ľ	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%RE
32	1,3-Dichloropropane	ND		0.50	ua/l					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1.2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

μg/L

μg/L

µg/L



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Alpha Analytical Number: BMI10021203-10A

Sampled: 02/11/10 00:00

Received: 02/12/10

Client I.D. Number: TB-8-2/11/10

Extracted: 02/16/10 12:45

Analyzed: 02/16/10 12:45

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	eporting l	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xvlene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butvlbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			•	, ,	
33	Dibromochloromethane	ND		0.50	μg/L					
~ 4	4.0.00				. •					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

Tetrachioroethene

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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# **VOC Sample Preservation Report**

Work Order: BMI10021203

Job:

G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН
10021203-01A	MW-11-4	Aqueous	2
10021203-02A	MW-11-3	Aqueous	2
10021203-03A	MW-11-2	Aqueous	2
10021203-04A	MW-11-1	Aqueous	2
10021203-05A	DUPE-4-1Q10	Aqueous	2
10021203-06A	MW-22-3	Aqueous	2
10021203-07A	MW-22-2	Aqueous	2
10021203-08A	MW-22-1	Aqueous	2
10021203-09A	EB-8-2/11/10	Aqueous	2
10021203-10A	TB-8-2/11/10	Aqueous	2

2/25/10



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<b>Date:</b> 23-Feb-10	(	QC Si	ımmar	y Repor	t				<b>Work Orde</b> 10021203	
Method Blank File ID: 24		Type M		est Code: Ef		hod 300.0	Analy	sis Date:	02/12/2010 13:08	
Sample ID: MB-23589	Units : mg/L		Run ID: IC	_1_1002124	١.		Prep [	Date:	02/12/2010 12:43	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	/al %RPD(Limit)	Qual
Nitrite (NO2) - N Nitrate (NO3) - N Phosphate, ortho - P Sulfate (SO4) Chloride	ND ND ND ND ND	0.25 0.25 0.5 0.5 0.5								
Laboratory Fortified Blank		Type L	FB To	est Code: El	PA Met	hod 300.0				
File ID: <b>25</b>			B	atch ID: 2358	39		•		02/12/2010 13:26	
Sample ID: LFB-23589	Units : mg/L			_1_100212#			Prep I		02/12/2010 12:43	
Analyte	Result	PQL	SpkVal	SpkRefVal				RPDRef\	/al %RPD(Limit)	Qual
Nitrite (NO2) - N	1.24	0.25			99	90	110			
Nitrate (NO3) - N Phosphate, ortho - P	1.33 1.14	0.25 0.5			107 91	90 90	110 110			
Sulfate (SO4)	108	0.5			108	90	110			
Chloride	54.9	0.5	50		110	90	110			
Sample Matrix Spike		Type L	FM T	est Code: El	PA Met	hod 300.0				
File ID: 28			В	atch ID: <b>235</b> 8	<b>39</b>		Analy	sis Date:	02/12/2010 14:22	
Sample ID: 10021203-04ALFM	Units : mg/L		Run ID: IC	_1_1002124	1		Prep l	Date:	02/12/2010 12:43	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	Val %RPD(Limit)	Qual
Nitrite (NO2) - N	1.09	0.25		0	87	80	120			
Nitrate (NO3) - N	2.27	0.25		1.051	97	80	120 120			
Phosphate, ortho - P Sulfate (SO4)	1.35 139	0.5 0.5		0 57.67	108 81	80 80	120			
Chloride	74.2	0.5		29.01	90	80	120			
Sample Matrix Spike Duplicate		Type L	FMD T	est Code: El	PA Met	hod 300.0				
File ID: <b>29</b>		•••		atch ID: 235	89		Analy	sis Date:	02/12/2010 14:40	
Sample ID: 10021203-04ALFMD	Units: mg/L		Run ID: IC	_1_100212	١.		Prep l	Date:	02/12/2010 12:43	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	Val %RPD(Limit)	Qual
Nitrite (NO2) - N	1.11	0.25	1.25	0	88	80	120	1.09	,	
Nitrate (NO3) - N	2.32	0.25		1.051	102	80	120	2.269	• •	D-
Phosphate, ortho - P	1.1	0.5		0	88	80	120	1.35	(,	R5
Sulfate (SO4) Chloride	138 74.1	0.5 0.5		57.67 29.01	81 90	80 80	120 120	139.1 74.19	( )	
	, 7.1	0.0	50	20.01	-	00	120	7 7.10	0.1(10)	

#### **Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag. R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.



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<b>Date:</b> 23-Feb-10		(	QC S	umma	ry Repor	t				<b>Work Orde</b> 10021203	
Method Bla	nk		Type I		Test Code: E Batch ID: 235		hod 314.0	Analysis [	Date: (	02/12/2010 14:13	
Sample ID:	MB-23586	Units : µg/L		Run ID:	IC_3_100212	A		Prep Date	e: (	02/12/2010 11:07	
Analyte		Result	PQL	SpkVa	al SpkRefVal	%REC	LCL(ME)	UCL(ME) RPI	ORefVa	al %RPD(Limit)	Qual
Perchlorate		ND		1							
Laboratory	Fortified Blank		Type I	LFB	Test Code: E	PA Met	thod 314.0				
File ID: 16					Batch ID: 235	86		Analysis [	Date: (	02/12/2010 14:32	
Sample ID:	LFB-23586	Units : µg/L		Run ID:	IC_3_100212	A		Prep Date	e: (	02/12/2010 11:07	
Analyte		Result	PQL	SpkV	al SpkRefVal	%REC	LCL(ME)	UCL(ME) RPI	ORefVa	al %RPD(Limit)	Qual
Perchlorate		24.3	:	2 2	5	97	85	115			
Sample Mat	trix Spike		Type I	LFM	Test Code: E	PA Met	thod 314.0				
File ID: <b>24</b>					Batch ID: 235	86		Analysis [	Date: (	02/12/2010 16:59	
Sample ID:	10021203-03ALFM	Units : µg/L		Run ID:	IC_3_100212	A		Prep Date	e: (	02/12/2010 11:07	
Analyte		Result	PQL	SpkV	al SpkRefVal	%REC	LCL(ME)	UCL(ME) RPI	DRefVa	al %RPD(Limit)	Qual
Perchlorate		25.8	:	2 2	5 0	103	80	120			
Sample Mat	trix Spike Duplicate		Type I	LFMD	Test Code: E	PA Met	thod 314.0				
File ID: <b>25</b>					Batch ID: 235	86		Analysis I	Date: (	02/12/2010 17:17	
Sample ID:	10021203-03ALFMD	Units : µg/L		Run ID:	IC_3_100212	A		Prep Date	e: (	02/12/2010 11:07	
Analyte		Result	PQL	SpkV	al SpkRefVal	%REC	LCL(ME)	UCL(ME) RPI	DRefVa	al %RPD(Limit)	Qual
Perchlorate		26.2	:	2 2	5 0	105	80	120	25.85	1.3(15)	_

#### Comments:

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<b>Date:</b> 24-Feb-10	QC Summary Report	<b>Work Order:</b> 10021203
Method Blank File ID: 021710.B\075SMPL.D\	Type MBLK Test Code: EPA Method 200.8  Batch ID: 23588K Analysis D	Date: 02/17/2010 20:08
Sample ID: MB-23588	Units: mg/L Run ID: ICP/MS_100217E Prep Date	e: 02/12/2010 11:22
Analyte	Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPD	ORefVal %RPD(Limit) Qual
Chromium (Cr)	ND 0.005	
Laboratory Control Spike File ID: 021710.B\076_LCS.D\	Type LCS Test Code: EPA Method 200.8  Batch ID: 23588K Analysis D	Date: 02/17/2010 20:14
Sample ID: LCS-23588	Units : mg/L Run ID: ICP/MS 100217E Prep Date	
Analyte	Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPD	
Chromium (Cr)	0.0542 0.005 0.05 108 80 120	***************************************
Sample Matrix Spike File ID: 021710.B\080SMPL.D\	Type MS Test Code: EPA Method 200.8  Batch ID: 23588K Analysis D	20147/2040 20:00
Sample ID: 10021203-03AMS	Units: mg/L Run ID: ICP/MS_100217E Prep Date	Date: 02/17/2010 20:36 :: 02/12/2010 11:22
Analyte	Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPD	
Chromium (Cr)	0.0498	
Sample Matrix Spike Duplicate	Type MSD Test Code: EPA Method 200.8	
File ID: 021710.B\081SMPL.D\	Batch ID: 23588K Analysis I	Date: 02/17/2010 20:42
Sample ID: 10021203-03AMSD	Units : mg/L Run ID: ICP/MS_100217E Prep Date	: 02/12/2010 11:22
Analyte	Result PQL SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPI	DRefVal %RPD(Limit) Qual
Chromium (Cr)	0.0504 0.005 0.05 0 101 80 120 0	0.04979 1.2(20)

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 22-Feb-2010	(	QC Sumi	nary Repo	rt			<b>Work Ordo</b> 10021203	
Method Blank File ID: 10021607.D		Type MBLK	Test Code: E		-		ate: 02/16/2010 10:31	
Sample ID: MBLK MS15W0216M	Units : µg/L	Run	ID: MSD_15_10			Prep Date:		
Analyte	Result				l (ME)	•	RefVal %RPD(Limit)	Qual
Dichlorodifluoromethane	ND		okvai Opkiteive	II /OINEO EC	)_(\(\v\)_)	OOL(ML) IVI D	rtervar zert D(Emity	
Chloromethane	ND ND	0.5 1						
Vinyl chloride	ND	0.5						
Chloroethane	ND	0.5						
Bromomethane	ND	1						
Trichlorofluoromethane	ND	0.5						
1,1-Dichloroethene	ND	0.5						
Dichloromethane	ND	1						
Freon-113	ND	0.5						
trans-1,2-Dichloroethene	ND	0.5						
Methyl tert-butyl ether (MTBE)	ND	0.5						
1,1-Dichloroethane	ND	0.5						
2-Butanone (MEK) cis-1,2-Dichloroethene	ND	10						
Bromochloromethane	ND ND	0.5						
Chloroform	ND ND	0.5						
2,2-Dichloropropane	ND ND	0.5 0.5						
1,2-Dichloroethane	ND .	0.5 0.5						
1,1,1-Trichloroethane	ND	0.5						
1,1-Dichloropropene	ND	0.5						
Carbon tetrachloride	. ND	0.5						
Benzene	ND	0.5						
Dibromomethane	ND	0.5						
1,2-Dichloropropane	ND	0.5						
Trichloroethene	ND	0.5						
Bromodichloromethane	ND	0.5						
4-Methyl-2-pentanone (MIBK)	ND	2.5						
cis-1,3-Dichloropropene	ND	0.5						
trans-1,3-Dichloropropene	ND	0.5						
1,1,2-Trichloroethane	ND	0.5						
Toluene 1,3-Dichloropropane	ND	0.5						
Dibromochloromethane	ND	0.5						
1,2-Dibromoethane (EDB)	ND ND	0.5 1						
Tetrachloroethene	ND	0.5						
1,1,1,2-Tetrachloroethane	ND	0.5						
Chlorobenzene	ND	0.5						
Ethylbenzene	ND	0.5						
m,p-Xylene	ND	0.5						
Bromoform	ND	0.5						
Styrene	ND	0.5						
o-Xylene	ND	0.5						
1,1,2,2-Tetrachloroethane	ND	0.5						
1,2,3-Trichloropropane	ND	1						
Isopropylbenzene Bromobenzene	ND	0.5						
n-Propylbenzene	ND ND	0.5						
4-Chlorotoluene	ND ND	0.5						
2-Chlorotoluene	ND ND	0.5 0.5						
1,3,5-Trimethylbenzene	ND	0.5						
tert-Butylbenzene	ND	0.5						
1,2,4-Trimethylbenzene	ND	0.5						
sec-Butylbenzene	ND	0.5						
1,3-Dichlorobenzene	ND	0.5						
1,4-Dichlorobenzene	ND	0.5						
4-Isopropyltoluene	ND	0.5						
1,2-Dichlorobenzene	ND	0.5						
n-Butylbenzene	ND	0.5						
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.5						
1,2,4-Trichlorobenzene	ND	1						
Naphthalene Hexachlorobutadiene	ND	1						
1,2,3-Trichlorobenzene	ND	1						
Surr: 1,2-Dichloroethane-d4	ND 9.54	1	10	05	70	420		
Surr: Toluene-d8	9.54 10.1		10 10	95 101	70 70	130 130		
	10.1		10	101	10	130		



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<b>Date:</b> 22-Feb-2010	(	ZC Sui	nmary F	Report				Work Ord 1002120	
Surr: 4-Bromofluorobenzene	10.3		10	103	70	130			
Laboratory Control Spike		Type LCS	S Test C	Code: EPA Meth	nod SW8	260B			
File ID: 10021605.D			Batch	ID: MS15W021	6M	Analys	is Date:	02/16/2010 09:31	
Sample ID: LCS MS15W0216M	Units : µg/L	R	_	15_100216B		Prep D		02/16/2010 09:31	
Analyte	Result	PQL	SpkVal Spl	RefVal %REC	LCL(ME)	UCL(ME)	RPDRef\	/al %RPD(Limit)	Qua
Dichlorodifluoromethane	8.69	1	10	87	70	130			
Chloromethane	6.86	2	10	69	70(70)	130			L50
Vinyl chloride Chloroethane	10.4 8.41	1 1	10	104	70 70	130 130			
Bromomethane	5.95	2	10 10	84 60	70(70)	130			L50
Trichlorofluoromethane	10.4	1	10	104	70	130			
1,1-Dichloroethene	10.5	1	10	105	70	130			
Dichloromethane	10.3	2	10	103	70	130			
trans-1,2-Dichloroethene Methyl tert-butyl ether (MTBE)	10.9 12.2	1 0.5	10 10	109 122	70 70	130 130			
1,1-Dichloroethane	10.2	0.5	10	102	70 70	130			
cis-1,2-Dichloroethene	11.6	1	10	116	70	130			
Bromochloromethane	12.2	1	10	122	70	130			
Chloroform 2,2-Dichloropropane	10.1 11.1	1 1	10 10	101 111	70 70	130 130			
1,2-Dichloroethane	11.8	1	10	118	70 70	130			
1,1,1-Trichloroethane	11.1	1	10	111	70	130			
1,1-Dichloropropene	10.8	1	10	108	70	130			
Carbon tetrachloride Benzene	11.4	1	10	114	70 70	130			
Dibromomethane	10.2 12.6	0.5 1	10 10	102 126	70 70	130 130			
1,2-Dichloropropane	11.2	i	10	112	70	130			
Trichloroethene	11.3	1	10	113	70	130			
Bromodichloromethane cis-1,3-Dichloropropene	12.4	1	10	124	70 70	130			
trans-1,3-Dichloropropene	11.1 11.6	1 1	10 10	111 116	70 70	130 130			
1,1,2-Trichloroethane	12.1	i	10	121	70	130			
Toluene	10.2	0.5	10	102	70	130			
1,3-Dichloropropane Dibromochloromethane	12.6	1	10	126	70	130			
1,2-Dibromoethane (EDB)	12.4 26.3	1 2	10 20	124 131	70 70	130 130(130)			L51
Tetrachloroethene	11	1	10	110	70	130(130)			LUI
1,1,1,2-Tetrachloroethane	11.8	i	10	118	70	130			
Chlorobenzene	10.4	1	10	104	70	130			
Ethylbenzene	10.1	0.5	10	101	70	130			
m,p-Xylene Bromoform	10.8 12	0.5 1	10 10	108 120	70 70	130 130			
Styrene	11.7	1	10	117	70	130			
o-Xylene	11	0.5	10	110	70	130			
1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	11.4	1	10	114	70	130			
Isopropylbenzene	22.8 10.3	2 1	20 10	114 103	70 70	130 130			
Bromobenzene	10.3	1	10	103	70	130			
n-Propylbenzene	9.94	1	10	99	70	130			
4-Chlorotoluene	10.5	1	10	105	70	130			
2-Chlorotoluene 1,3,5-Trimethylbenzene	10.1 9.67	1 1	10 10	101 97	70 70	130 130			
tert-Butylbenzene	9.72	1	10	97 97	70 70	130			
1,2,4-Trimethylbenzene	9.76	1	10	98	70	130			
sec-Butylbenzene	10.1	1	10	101	70	130			
1,3-Dichlorobenzene 1,4-Dichlorobenzene	10.1	1	10	101	70 70	130			
4-Isopropyltoluene	9.7 9.75	1 1	10 10	97 98	70 70	130 130			
1,2-Dichlorobenzene	9.72	1	10	97	70	130			
n-Butylbenzene	9.8	1	10	98	70	130			
1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene	57.3	3	50	115	70	130			
Naphthalene	10.8 12.2	2 2	10 10	108 122	70 70	130 130			
Hexachlorobutadiene	17.3	2	20	87	70 70	130			
1,2,3-Trichlorobenzene	11.1	2	10	111	70	130			
Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8	9.72		10	97	70 70	130			
Surr: 4-Bromofluorobenzene	9.48		10	95	70	130			



Date:

# Alpha Analytical, Inc.

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Work Order:

QC Summary Report 22-Feb-2010 Sample Matrix Spike Type MS Test Code: EPA Method SW8260B File ID: 10021608.D Analysis Date: 02/16/2010 10:53 Batch ID: MS15W0216M Sample ID: 10021203-03AMS Units: µg/L Prep Date: 02/16/2010 10:53 Run ID: MSD 15 100216B SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Analyte Qual Result PQL Dichlorodifluoromethane 42.9 2.5 Chloromethane 37.5 Vinyl chloride 50.5 2.5 Chloroethane 40.2 2.5 Bromomethane 21.1 Trichlorofluoromethane 2.5 1.1-Dichloroethene 46.4 2.5 Dichloromethane 50.3 trans-1,2-Dichloroethene 50.6 2.5 Methyl tert-butyl ether (MTBE) 1.3 59.3 1,1-Dichloroethane 47.8 2.5 cis-1.2-Dichloroethene 54.1 2.5 Bromochloromethane 58.2 2.5 Chloroform 46.3 2,2-Dichloropropane 50.7 2.5 1,2-Dichloroethane 55.2 2.5 1.1.1-Trichloroethane 50.7 2.5 1,1-Dichloropropene 50.6 2.5 Carbon tetrachloride 51.1 2.5 Benzene 47.3 1.3 Dibromomethane 59.1 2.5 1.2-Dichloropropane 51.7 2.5 Trichloroethene 50.1 2.5 Bromodichloromethane 2.5 cis-1.3-Dichloropropene 49.5 2.5 trans-1,3-Dichloropropene 51.5 2.5 1,1,2-Trichloroethane 55.5 2.5 Toluene 46.8 1.3 1,3-Dichloropropane 58.6 2.5 Dibromochloromethane 57.4 2.5 1,2-Dibromoethane (EDB) Tetrachloroethene 50.3 2.5 1,1,1,2-Tetrachloroethane 52.9 2.5 Chlorobenzene 48.1 2.5 Ethylbenzene 46.3 m,p-Xylene 49.9 1.3 99.8 **Bromoform** 55.3 2.5 Styrene 54.2 2.5 o-Xylene 50.2 1.3 1,1,2,2-Tetrachloroethane 53.8 2.5 1,2,3-Trichloropropane Isopropylbenzene 44.7 2.5 Bromobenzene 45.9 2.5 n-Propylbenzene 43.5 2.5 4-Chlorotoluene 46.1 2.5 2-Chlorotoluene 43.4 2.5 1,3,5-Trimethylbenzene 42.2 2.5 tert-Butvlbenzene 42.3 2.5 1,2,4-Trimethylbenzene 42.9 2.5 sec-Butylbenzene 43.4 2.5 1.3-Dichlorobenzene 44.5 2.5 1,4-Dichlorobenzene 42.7 2.5 4-Isopropyltoluene 42.6 2.5 1,2-Dichlorobenzene 2.5 n-Butylbenzene 42.6 2.5 1.2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene 45.7 Naphthalene 53.7 Hexachlorobutadiene 73.9 1,2,3-Trichlorobenzene 47.2 Surr: 1,2-Dichloroethane-d4 48.4 Surr: Toluene-d8 47.9 Surr: 4-Bromofluorobenzene 53.1 



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: Work Order: **OC Summary Report** 22-Feb-2010 10021203 Type MSD Test Code: EPA Method SW8260B Sample Matrix Spike Duplicate File ID: 10021609.D Analysis Date: 02/16/2010 11:16 Batch ID: MS15W0216M Sample ID: 10021203-03AMSD 02/16/2010 11:16 Units: µg/L Run ID: MSD\_15\_100216B Prep Date: Analyte Result **PQL** SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Dichlorodifluoromethane 167 47.2 2.5 94 13 42.9 9.5(20)Chloromethane 50 28 145 37.45 10.6(20) 41.6 10 0 83 Vinyl chloride 57.4 2.5 50 0 115 43 134 50.46 12.8(20) Chloroethane 43.8 2.5 50 0 88 39 154 40.22 8.5(20)Bromomethane **R**58 21.06 38.7(20) 31.2 10 50 0 62 19 176 Trichlorofluoromethane 51.9 2.5 50 0 104 34 160 42.04 21.0(20) R5 1,1-Dichloroethene 60 46.41 10.3(20) 51.4 2.5 50 0 103 130 Dichloromethane 52.3 10 50 0 105 68 130 50.3 3.8(20)trans-1,2-Dichloroethene 53 4 2.5 50 107 63 130 50.59 5.3(20) n Methyl tert-butyl ether (MTBE) 60.9 2.7(20)1.3 50 0 122 56 141 59.26 1,1-Dichloroethane 47.81 5.1(20)50.3 2.5 50 0 101 61 130 cis-1,2-Dichloroethene 56.8 2.5 70 130 54.06 4.9(20)50 O 114 Bromochloromethane 60 2.5 50 120 70 130 58.16 3.2(20)0 Chloroform 48.7 2.5 46.3 5.0(20)50 0 97 67 130 2,2-Dichloropropane 53.9 6.2(20)2.5 50 0 108 30 152 50.7 1,2-Dichloroethane 56.9 55.16 3.0(20)2.5 50 O 114 60 135 1,1,1-Trichloroethane 53.5 2.5 50 n 107 59 137 50.67 5.4(20)1,1-Dichloropropene 53.5 2.5 50 107 63 130 50.55 5.6(20)Carbon tetrachloride 55.4 2.5 50 50 147 51.08 8.2(20) 0 111 Benzene 49 9 1.3 50 0 99.7 67 130 47.33 5.2(20) Dibromomethane 59.9 2.5 50 0 120 69 133 59.1 1.3(20)1,2-Dichloropropane 53.4 2.5 50 0 69 130 51.66 3.3(20)107 Trichloroethene 50.05 5.7(20) 53 2.5 50 0 106 69 130 Bromodichloromethane 59.1 55.04 7.1(20) 2.5 50 0 118 66 134 cis-1,3-Dichloropropene 51.3 2.5 103 63 130 49.5 3.7(20)50 n trans-1,3-Dichloropropene 54.3 2.5 109 66 131 51.45 5.4(20)50 1,1,2-Trichloroethane 58 4 2.5 68 50 0 117 130 55.51 5.1(20) Toluene 48.7 1.3 50 0 97 66 130 46.78 4.1(20)1,3-Dichloropropane 60.7 2.5 50 121 70 130 58.63 3.4(20)Dibromochloromethane 59.6 2.5 70 57.37 3.8(20)50 0 119 130 1,2-Dibromoethane (EDB) 126 100 126 70 130 123.2 2.6(20)Tetrachloroethene 5.6(20) 53.2 2.5 61 50.31 50 0 106 134 1,1,1,2-Tetrachloroethane 55.8 2.5 50 112 70 130 52.92 5.2(20)0 Chlorobenzene 49.6 2.5 50 99 70 130 48.09 3.1(20)Ethylbenzene 48.2 68 130 46.27 4.1(20) 1.3 50 0 96 m.p-Xvlene 52 1.3 50 0 104 64 130 49.91 4.1(20)Bromoform 59.1 2.5 50 118 64 138 55.3 6.6(20)Styrene 56.8 2.5 69 54.21 50 O 114 130 4.7(20)o-Xvlene 52.3 70 50.23 4.1(20)1.3 50 105 130 1,1,2,2-Tetrachloroethane 55.8 2.5 50 0 112 65 131 53.75 3.8(20)1,2,3-Trichloropropane 109 10 109 70 105.3 3.9(20)100 0 130 Isopropylbenzene 48.1 2.5 64 44.68 7.4(20)50 96 138 Bromobenzene 48.6 2.5 97 70 45.89 50 0 130 5.6(20) n-Propylbenzene 46.4 2.5 50 0 93 66 132 43.53 6.4(20)4-Chlorotoluene 49.3 2.5 50 0 99 70 130 46.06 6.7(20)2-Chlorotoluene 46.8 2.5 50 94 70 130 43.4 7.5(20) n 1.3.5-Trimethylbenzene 45.3 2.5 50 91 66 136 42.23 7.1(20) tert-Butylbenzene 45.6 65 2.5 50 n 91 137 42.34 7.5(20)1.2,4-Trimethylbenzene 46.1 2.5 50 0 92 65 137 42.86 7.3(20)sec-Butylbenzene 47.3 2.5 50 0 95 66 134 43.44 8.5(20) 1.3-Dichlorobenzene 48.1 2.5 50 O 96 70 130 44.5 7.7(20) 1,4-Dichlorobenzene 45.7 2.5 42.66 7.0(20)50 91 70 130 4-Isopropyltoluene 46 2.5 50 0 92 66 7.6(20)137 42.58 1.2-Dichlorobenzene 46.1 2.5 50 0 92 70 130 41.97 9.3(20)n-Butylbenzene 46.6 2.5 50 0 93 60 142 42.58 9.1(20)1,2-Dibromo-3-chloropropane (DBCP) 277 15 250 0 111 67 130 255.5 8.0(20)1.2,4-Trichlorobenzene 51.2 10 50 0 102 61 137 45.65 11.5(20) Naphthalene 59.7 10 50 0 119 40 167 53.7 10.6(20) Hexachlorobutadiene 81.5 10 100 n 81 61 130 73.9 9.7(20) 1,2,3-Trichlorobenzene 53.7 10 50 107 51 144 47.21 12.9(20) Surr: 1,2-Dichloroethane-d4 48.2 96 50 70 130 Surr: Toluene-d8 47 50 94 70 130 Surr: 4-Bromofluorobenzene 54.5 50 109 70 130



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**Date:** 22-Feb-2010

# QC Summary Report

Work Order: 10021203

#### **Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

L51 = Analyte recovery was above acceptance limits for the LCS, but was acceptable in the MS/MSD.

R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

R58 = MS/MSD RPD exceeded the laboratory control limit.

# Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention Phone Number connerd@battelle.org EMail Address

(614) 424-4117 x (614) 424-4899 x

cutiee@batelle.org waltons@battelle.org

San Diego, CA 92110

Suite C-205 3990 Old Town Ave

Battelle Memorial Institute

Client's COC #: 28880, 24130

QC Level: DS4

= DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates

Job: G005862/JPL Groundwater Monitoring

Page: 1 of 1

Report Due By: 5:00 PM On: 26-Feb-2010 WorkOrder: BMIS10021203

EDD Required: Yes

Cooler Temp

Sampled by: Client

Samples Received Date Printed

12-Feb-2010 12-Feb-2010

Sample ID BMI10021203-10A TB-8-2/11/10 BMI10021203-09A EB-8-2/11/10 BMI10021203-08A BMI10021203-07A MW-22-2 BMI10021203-06A MW-22-3 BMI10021203-05A DUPE-4-1Q10 BMI10021203-04A MW-11-1 BMI10021203-03A MW-11-2 BMI10021203-02A MW-11-3 BMI10021203-01A MW-22-1 MW-11-4 Client Sample ID AQ 02/11/10 00:00 å g å å Š Š Š å Š Matrix Date 02/11/10 10:47 02/11/10 08:15 02/11/10 08:29 02/11/10 08:40 02/11/10 07:53 02/11/10 00:00 02/11/10 09:50 02/11/10 11:15 02/11/10 Collection No. of Bottles 10:16 Alpha 5 G G S Ġ G S G Sub 0 0 0 0 0 0 0 0 0 ΤAΤ 6 6 5 5 6 6 5 5 6 7 NO2, NO3, Perchlorate SO4, CI, PO4 NO2, NO3, Perchlorate SO4, Cl, PO4 300\_0\_W Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate 314 W METALS\_D VOC\_TIC\_ Ç Ç Ç Ç Ç Ç Ç Ç VOC by 524 | VOC by 524 Criteria | Criteria VOC by 524 VOC by 524 Criteria Criteria Requested Tests VOC\_W Reno Trip Blank 8/25/09 Sample Remarks Level IV QC Level IV QC MS/MSD

Comments: Security seals intact. Frozen ice. Temp Blank #8720 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by: imports Ideax Elizabeth Holcox **Print Name** Alpha Analytical, Inc. 2-12-10 1036 Date/Time

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other)

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Billing Information:  Name 6 ENALY TOMPKINS / BATTELLE Address 505 Kill AM		Alpha Analytical, Inc. 255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778  Sparks, Nevada 89431-5778	Samples Collected From Which State?  AZ CA NV WA  ID OR OTHER	Page # of
le, Zip <u>しっしんいない</u> umber <u></u>		Phone (775) 355-1044  Fax (775) 355-0406	Analyses Required	
Client Name  BATT ELLE / DAVID CONNER  Address  3990 OLD TOWN AVE "C-DS	P.O. # 218013 EMail Address	Job # 60 05 862	(2008) (3140) (3-100)	Required QC Level?
State, Zip  Warring Sampled by	Phone # (6 19 ) 726 - 7311	$\downarrow \downarrow$	- Co	EDD / EDF? YES NO
Sampled Sampled Below Lab ID Number (Use Only)	Sample Description	TAT Field "See below "See below"	Clesto	Global ID #REMARKS
10 EDZ/2011 IME OV -1/1/105501	MW-11-4	4	×	
70/-	Mw-11-3	νφς X X	X X	TENET ID OC
<i>1047</i> C3	Mw-11-2	×	XX	
		10		Mslmsa
1115 - D4	MW-11 - 1	×	×	
S	DUPE-4-1010	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	XXX	DUPLICATE
	EB / //s	, X 5 (W)	XX	Ewip. Busine
ADDITIONAL INSTRUCTIONS:				
Signature	Print Name	Company	pany Date	te Time
Relinquished by	MANCO MENDOR	INSIGHT G	EC, INC 2/11	1/3 /23>
Received by	Arthur stall	ALMA	_	00 1230
Relinquished by Jank	the tain	ALPHA	2/11/2	رهم المع
Received by Chapter (MCAX)	Mizakth Hacos	( liphe	2.0:	2.10 /0316
Received by				
*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis	e OT - Other AR - Air **: reported unless other arrangements are m	**: L-Liter V-Voa S-Soil Jar O-Orbo made. Hazardous samples will be returned to cli	Orbo T-Tedlar B-Brass P-F o client or disposed of at client expense.	P-Plastic OT-Other see. The report for the analysis

0

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

*Key: AQ - Aqueous SO - Soil	Received by	Received by Relinquished by	Relinquished by	Received by	Relinquished by	Signature	ADDITIONAL INSTRUCTIONS:					061	879	Ch8		8/5			S	Date Matrix* Sampled by	C	OLD JOHN AVÉ	Client Name  CATTECLE / DAVID C	City, State, Zip <u>Co รณหนับ</u> ง, <u>C</u> Phone NumberFax	2	Name GE PALD TOMPICINS	illing Information:
WA - Waste		Ulax					):			(	٠/٦	0/	, , , ,	.08	20	, 0,1	(	, NO.	( Office ( Use Only )		110	'	CONNER	0# 43201 ×		BATTELLE	
OT - Other AR - Air		Klizabak	Author Starl.	Athum Stork	MARCO MENI	Print Name					113-8-2/11/	· • ·	2	MW - 22-1		MW-27-2		MW-22-3	Sample Description	٠	/619) 726- 7311	dress	2/80/3		3		1
**: L-Liter V-Voa are made. Hazardous sa		d Cox			Do TA						/>		//\$					MON	TAT		Fax#	,	000,	Fax (775) 355-0406	Sparks, Nevada 89431-5778	255 Glendale Avenue, Suite 21	laha Anglytica
/oa S-Soil Jar s samples will be retu		(Ilp)	11/2/4	ALOHA	Insigur				•		X 1/1					<b>X</b>		'n	Field ** See below	of _			28 L			21 :	J
O-Orbo T-Tedlar rned to client or dispose					the latest the state of the sta	Company						***	<u> </u>	X X	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	× ×		$\times$	Y THE CH		Su 1	4.2 202 14.0	$\sqrt{}$	/ Analys		ID OR	nples Collecte
B-Brass ad of at client exp		2	20	7	2														' / /	<u> </u>	<u></u>	<u></u>		Analyses Required	49.00	OTHER	d From Whi
*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis		0.12.10 1036	Tulio Jos	2/11/10 1230	2/11/10 1230	Date Time					TRIP BLANC	Ewit. 15 cours				LENET ID OC			REMARKS	Global ID #	EDD / EDF? YES NO	/	/ Required QC Level?			Page #	ch State? 24130

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.



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**Date:** 26-Feb-10 David Conner

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

(818) 393-2808

Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

BMI10021640

Cooler Temp:

4°C

Alpha's Sample ID	Client's Sample ID	Matrix	
10021640-01A	MW-19-5	Aqueous	
10021640-02A	MW-19-4	Aqueous	
10021640-03A	MW-19-3	Aqueous	
10021640-04A	MW-19-2	Aqueous	
10021640-05A	MW-19-1	Aqueous	
10021640-06A	EB-9-2/12/10	Aqueous	
10021640-07A	TB-9-2/12/10	Aqueous	
10021640-08A	MW-12-5	Aqueous	
10021640-09A	MW-12-4	Aqueous	
10021640-10A	MW-12-3	Aqueous	
10021640-11A	MW-12-2	Aqueous	
10021640-12A	MW-12-1	Aqueous	
10021640-13A	EB-10-2/15/10	Aqueous	
10021640-14A	TB-10-2/15/10	Aqueous	
10021640-15A	MW-7	Aqueous	
10021640-16A	MW-16	Aqueous	

#### **Manually Integrated Analytes**

 Alpha's Sample ID	Test Reference	Analyte
10021640-01A	EPA Method 314.0	Perchlorate
10021640-02A	EPA Method 314.0	Perchlorate
10021640-03A	EPA Method 314.0	Perchlorate
10021640-04A	EPA Method 314.0	Perchlorate
10021640-05A	EPA Method 314.0	Perchlorate
10021640-08A	EPA Method 314.0	Perchlorate
10021640-09A	EPA Method 314.0	Perchlorate
10021640-11A	EPA Method 314.0	Perchlorate
10021640-16A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Sadner

Walter Hirkman



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

**David Conner** Attn:

(818) 393-2808 Phone: Fax: (614) 458-6641

Date Received: 02/16/10

Job: G005862/JPL Groundwater Monitoring

> Anions by IC EPA Method 300.0

	Parameter	Concentration	Reporting	Date	Date
			Limit	Extracted	Analyzed
Client ID: MW-7					
Lab ID: BMI10021640-15A	Nitrite (NO2) - N	ND	0.25 mg/L	02/16/10 12:57	02/16/10 16:56
Date Sampled 02/15/10 09:15	Nitrate (NO3) - N	1.1	0.25 mg/L	02/16/10 12:57	02/16/10 16:56
	Phosphate, ortho - P	ND	0.50 mg/L	02/16/10 12:57	02/16/10 16:56
	Sulfate (SO4)	46	0.50 mg/L	02/16/10 12:57	02/16/10 16:56
	Chloride	73	50 mg/L	02/16/10 12:57	02/16/10 16:56
Client ID: MW-16					
Lab ID: BMI10021640-16A	Nitrite (NO2) - N	ND	0.25 mg/L	02/16/10 12:57	02/16/10 17:15
Date Sampled 02/15/10 11:40	Nitrate (NO3) - N	1.2	0.25 mg/L	02/16/10 12:57	02/16/10 17:15
-	Phosphate, ortho - P	ND	0.50 mg/L	02/16/10 12:57	02/16/10 17:15
	Sulfate (SO4)	49	0.50 mg/L	02/16/10 12:57	02/16/10 17:15
	Chloride	74	50 mg/L	02/16/10 12:57	02/16/10 17:15

ND = Not Detected

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110 Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/16/10

Job:

G005862/JPL Groundwater Monitoring

#### Perchlorate by Ion Chromatography EPA Method 314.0

		EPA Method 314.0			
	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-19-5 Lab ID: BMI10021640-01A Date Sampled 02/12/10 08:00	Perchlorate	2.76	1.00 µg/L	02/16/10 14:16	02/16/10 16:45
Client ID: MW-19-4 Lab ID: BMI10021640-02A Date Sampled 02/12/10 08:22	Perchlorate	2.72	1.00 µg/L	02/16/10 14:16	02/16/10 17:03
Client ID: MW-19-3 Lab ID: BMI10021640-03A Date Sampled 02/12/10 08:44	Perchlorate	2.52	1.00 µg/L	02/16/10 14:16	02/16/10 17:22
Client ID: MW-19-2 Lab ID: BMI10021640-04A Date Sampled 02/12/10 09:08	Perchlorate	5.42	1.00 µg/L	02/16/10 14:16	02/16/10 17:40
Client ID: MW-19-1 Lab ID: BMI10021640-05A Date Sampled 02/12/10 09:30	Perchlorate	6.68	1.00 μg/L	02/16/10 14:16	02/16/10 17:59
Client ID: <b>EB-9-2/12/10</b> Lab ID: BMI10021640-06A Date Sampled 02/12/10 09:20	Perchlorate	ND	1.00 µg/L	02/16/10 14:16	02/16/10 18:17
Client ID: MW-12-5 Lab ID: BMI10021640-08A Date Sampled 02/15/10 09:51	Perchlorate	1.32	1.00 μg/L	02/16/10 14:16	02/16/10 18:35
Client ID: MW-12-4 Lab ID: BMI10021640-09A Date Sampled 02/15/10 10:17	Perchlorate	2.75	1.00 µg/L	02/16/10 14:16	02/16/10 18:54
Client ID: MW-12-3 Lab ID: BMI10021640-10A Date Sampled 02/15/10 10:40	Perchlorate	ND	1.00 µg/L	02/16/10 14:16	02/16/10 20:26
Client ID: MW-12-2 Lab ID: BMI10021640-11A Date Sampled 02/15/10 11:03	Perchlorate	2.41	1.00 µg/L	02/16/10 14:16	02/16/10 20:44
Client ID: MW-12-1 Lab ID: BMI10021640-12A Date Sampled 02/15/10 11:31	Perchlorate	ND	1.00 µg/L	02/16/10 14:16	02/16/10 21:03



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Client ID: <b>EB-10-2/15/10</b> Lab ID: <b>BMI</b> 10021640-13A Date Sampled 02/15/10 11:17	Perchlorate	ND	1.00 µg/L	02/16/10 14:16 02/16/10 21:21
Client ID: MW-7  Lab ID: BMI10021640-15A  Date Sampled 02/15/10 09:15	Perchlorate	ND	1.00 μg/L	02/16/10 14:16
Client ID: MW-16 Lab ID: BMI10021640-16A Date Sampled 02/15/10 11:40	Perchlorate	3.77	1.00 µg/L	02/16/10 14:16 02/16/10 21:58

ND = Not Detected

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Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110 Attn:

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

D-4- I

Date Received: 02/16/10

Job:

G005862/JPL Groundwater Monitoring

Metals by ICPMS

EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-12-3 Lab ID: BMI10021640-10A Date Sampled 02/15/10 10:40	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 04:41
Client ID: MW-12-2 Lab ID: BMI10021640-11A Date Sampled 02/15/10 11:03	Chromium (Cr)	ND .	0.0050 mg/L	02/16/10 14:22	02/18/10 04:46
Client ID: MW-12-1 Lab ID: BMI10021640-12A Date Sampled 02/15/10 11:31	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 04:52
Client ID: <b>EB-10-2/15/10</b> Lab ID: BMI10021640-13A Date Sampled 02/15/10 11:17	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 04:58
Client ID: MW-7 Lab ID: BMI10021640-15A Date Sampled 02/15/10 09:15	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 05:03
Client ID: <b>MW-16</b> Lab ID: BMI10021640-16A Date Sampled 02/15/10 11:40	Chromium (Cr)	ND	0.0050 mg/L	02/16/10 14:22	02/18/10 05:09

ND = Not Detected

Roger Scholl Kandy Soulun

Walter Firehour

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave Attn: David Conner Phone: (818) 393-2808 Fax: (614) 458-6641

San Diego, CA 92110 Job: G005862/JPL C

G005862/JPL Groundwater Monitoring

### Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated		
	Parameter	Estimated	Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID: MW-19-5 Lab ID: BMI10021640-01A Date Received: 02/16/10 Date Sampled: 02/12/10 08:00	*** None Found ***	ND	2.0 µg/L	02/18/10 15:15	02/18/10 15:15
Client ID : MW-19-4 Lab ID : BMI10021640-02A  Date Received : 02/16/10  Date Sampled : 02/12/10 08:22	*** None Found ***	ND	2.0 μg/L	02/18/10 15:37	02/18/10 15:37
Client ID: MW-19-3 Lab ID: BMI10021640-03A  Date Received: 02/16/10 Date Sampled: 02/12/10 08:44	*** None Found ***	ND	2.0 μg/L	02/18/10 15:59	02/18/10 15:59
Client ID: MW-19-2 Lab ID: BMI10021640-04A  Date Received: 02/16/10  Date Sampled: 02/12/10 09:08	*** None Found ***	ND	2.0 μg/L	02/18/10 16:22	02/18/10 16:22
Client ID: MW-19-1 Lab ID: BMI10021640-05A Date Received: 02/16/10 Date Sampled: 02/12/10 09:30	*** None Found ***	ND	2.0 μg/L	02/18/10 16:44	02/18/10 16:44
Client ID : EB-9-2/12/10  Lab ID : BMI10021640-06A  Date Received : 02/16/10  Date Sampled : 02/12/10 09:20	*** None Found ***	ND	2.0 μg/L	02/18/10 14:08	02/18/10 14:08
Client ID: TB-9-2/12/10  Lab ID: BMI10021640-07A  Date Received: 02/16/10  Date Sampled: 02/12/10 00:00	*** None Found ***	ND	2.0 μg/L	02/18/10 13:46	02/18/10 13:46
Client ID : MW-12-5 Lab ID : BMI10021640-08A  Date Received : 02/16/10 Date Sampled : 02/15/10 09:51	*** None Found ***	ND	2.0 μg/L	02/18/10 17:06	02/18/10 17:06
Client ID: MW-12-4 Lab ID: BMI10021640-09A Date Received: 02/16/10 Date Sampled: 02/15/10 10:17	Sulfur dioxide	2.1	2.0 μg/L	02/18/10 17:28	02/18/10 17:28



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Client ID: MW-12-3 Lab ID: BM110021640-10A Date Received: 02/16/10 Date Sampled: 02/15/10 10:40	*** None Found ***	ND	2.0 μg/L	02/18/10 17:51 02/18/10 17:51
Client ID: MW-12-2 Lab ID: BMI10021640-11A Date Received: 02/16/10 Date Sampled: 02/15/10 11:03	*** None Found ***	ND	2.0 μg/L	02/18/10 18:13 02/18/10 18:13
Client ID : MW-12-1 Lab ID : BMI10021640-12A Date Received : 02/16/10 Date Sampled : 02/15/10 11:31	*** None Found ***	ND	2.0 μg/L	02/18/10 18:35 02/18/10 18:35
Client ID : <b>EB-10-2/15/10</b> Lab ID : BMI10021640-13A  Date Received : 02/16/10  Date Sampled : 02/15/10 11:17	*** None Found ***	ND	2.0 μg/L	02/18/10 14:53 02/18/10 14:53
Client ID: TB-10-2/15/10 Lab ID: BMI10021640-14A Date Received: 02/16/10 Date Sampled: 02/15/10 00:00	*** None Found ***	ND	2.0 µg/L	02/18/10 14:30 02/18/10 14:30
Client ID: MW-7  Lab ID: BM110021640-15A  Date Received: 02/16/10  Date Sampled: 02/15/10 09:15	*** None Found ***	ND	2.0 μg/L	02/18/10 18:57 02/18/10 18:57
Client ID: MW-16 Lab ID: BMI10021640-16A Date Received: 02/16/10 Date Sampled: 02/15/10 11:40	*** None Found ***	ND	2.0 μg/L	02/18/10 19:20 02/18/10 19:20

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger Scholl

KandySaulmer

Dalter Hirkman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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Report Date

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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Alpha Analytical Number: BMI10021640-01A

Client I.D. Number: MW-19-5

Sampled: 02/12/10 08:00

Received: 02/16/10

Extracted: 02/18/10 15:15 Analyzed: 02/18/10 15:15

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

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μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

**Report Date** 

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Page 1 of 1



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

Job:

ego, CA 92110 - G005862/IBI Grounds

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-02A Client I.D. Number: MW-19-4

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/12/10 08:22

Received: 02/16/10

Extracted: 02/18/10 15:37 Analyzed: 02/18/10 15:37

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur

Walter Hirihour

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

µg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-03A Client I.D. Number: MW-19-3

**David Conner** Attn: Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/12/10 08:44

Received: 02/16/10

Extracted: 02/18/10 15:59 Analyzed: 02/18/10 15:59

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	ug/L	61	Naphthalene	ND	. 1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	97	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

1,2-Dibromoethane (EDB)

ND = Not Detected

35 Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/1/10

**Report Date** 



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-04A

Client I.D. Number: MW-19-2

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/12/10 09:08

Received: 02/16/10

Extracted: 02/18/10 16:22 Analyzed: 02/18/10 16:22

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	1.2		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
		1			-					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kundy Saulur

Walter Findows

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave

Client I.D. Number: MW-19-1

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-05A

Attn:

David Conner

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/12/10 09:30

Received: 02/16/10 Extracted: 02/18/10 16:44 Analyzed: 02/18/10 16:44

## Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichloroftuoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	. ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	0.59		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
	and the second s	1								

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

35 Tetrachloroethene

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Offices Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Report Date

Alpha Analytical. Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Client I.D. Number: EB-9-2/12/10

Attn: Fax:

**David Conner** Phone: (818) 393-2808 (614) 458-6641

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-06A

Sampled: 02/12/10 09:20

Received: 02/16/10

Extracted: 02/18/10 14:08 Analyzed: 02/18/10 14:08

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	porting I	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	99	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

1.2-Dibromoethane (EDB)

34

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-07A

Client I.D. Number: TB-9-2/12/10

Attn:

**David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/12/10 00:00

Received: 02/16/10 Extracted: 02/18/10 13:46

Analyzed: 02/18/10 13:46

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	97	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

35 Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples. Report Date

3/1/10



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

Client I.D. Number: MW-12-5

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-08A

Attn:

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/15/10 09:51

Received: 02/16/10

Extracted: 02/18/10 17:06 Analyzed: 02/18/10 17:06

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND .		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur

Walter Firedown

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

µg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-09A

Client I.D. Number: MW-12-4

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/15/10 10:17

Received: 02/16/10

Extracted: 02/18/10 17:28 Analyzed: 02/18/10 17:28

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporti	ng L	_imit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND	0.	50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1	.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.	50	µg/L	38	Ethylbenzene	ND .	0.50	μg/L
4	Chloroethane	ND	0.	50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q 1	.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.	50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.	50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1	.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.	50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.	50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.	50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.	50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.	50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.	50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	0.54	0.	50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.	50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.	50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.	50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.	50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	0.86	0.	50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.	50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.	50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.	50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.	50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.	50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.	50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND	0.	50	µg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.	50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND	0.	50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.	50	µg/L					
33	Dibromochloromethane	ND	0.	50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kundge Santur.

Walter Hinkow

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/1/10



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-10A

Client I.D. Number: MW-12-3

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/15/10 10:40

Received: 02/16/10

Extracted: 02/18/10 17:51 Analyzed: 02/18/10 17:51

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Repo	rting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND -	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	6.7		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	0.72		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Salver

Walter Hinkow

toger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/1/10 Report Date



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-11A

Client I.D. Number: MW-12-2

**David Conner** Attn:

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/15/10 11:03

Received: 02/16/10

Extracted: 02/18/10 18:13 Analyzed: 02/18/10 18:13

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	F	Reporting I	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L`	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	, I	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/Ł	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
34	1,2-Dibromoethane (EDB)	ND		1.0	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

Roger Schol

Roger L. Scholl, Ph.D., Laboratory Director . . Randy Gardner, Laboratory Manager . Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

**Report Date** Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-12A

Client I.D. Number: MW-12-1

**David Conner** Attn: Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/15/10 11:31

Received: 02/16/10

Extracted: 02/18/10 18:35 Analyzed: 02/18/10 18:35

## Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	eporting I	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MiBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachioroethene

1,2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date



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### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-13A

Client I.D. Number: EB-10-2/15/10

Attn: David Conner

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/15/10 11:17

Received: 02/16/10

Extracted: 02/18/10 14:53 Analyzed: 02/18/10 14:53

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reportir	g Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND	0.5	0 μg/L	36	1,1,1,2-Tetrachloroethane	ND .	0.50	μg/L
2	Chloromethane	ND	1		37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.5	0 µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.5	0 µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q 1	0 µg/L	40	Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND	0.5	0 μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.5	0 µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1		43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.5	0 μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.5	0 μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.5	0 μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.5	0 μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	1	0 µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.5	i0 μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.5	i0 μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.5	i0 μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.5	i0 μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.5		53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.5	i0 μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.5		55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND -	0.5	i0 μg/L	56	4-isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.5	i0 μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.5	i0 μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND	0.5	i0 μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	µg/L
25	Trichloroethene	ND	0.5	i0 µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.5	60 µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2	.5 μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28		ND	0.5	i0 μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.5	i0 μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.5		65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND	0.5	i0 μg/L	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.5						
33	Dibromochloromethane	ND	0.5	i0 μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kundy Sulman

Walter Hinkows

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-14A

Client I.D. Number: TB-10-2/15/10

David Conner Attn: (818) 393-2808 Phone:

Fax: (614) 458-6641

Sampled: 02/15/10 00:00

Received: 02/16/10

Extracted: 02/18/10 14:30 Analyzed: 02/18/10 14:30

### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	eporting I	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND .		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochioromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MiBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
		1								

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 



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### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110 Attn:

Fax:

**David Conner** Phone: (818) 393-2808 (614) 458-6641

G005862/JPL Groundwater Monitoring

Sampled: 02/15/10 09:15

Received: 02/16/10

Extracted: 02/18/10 18:57 Analyzed: 02/18/10 18:57

Alpha Analytical Number: BMI10021640-15A

Client I.D. Number: MW-7

## Volatile Organics by GC/MS EPA Method SW8260B

Compound Concentration Reporting Limit			Compound	Concentration	Reporting Li	mit				
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xvlene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	0.51		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	ug/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021640-16A

Client I.D. Number: MW-16

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/15/10 11:40

Received: 02/16/10

Extracted: 02/18/10 19:20 Analyzed: 02/18/10 19:20

## Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Repo	orting 1	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	µg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND ND		2.5	ug/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	103	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	µa/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulur

Walter Finkmer

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μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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# **VOC Sample Preservation Report**

Work Order: BMI10021640

Job:

G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН
10021640-01A	MW-19-5	Aqueous	2
10021640-02A	MW-19-4	Aqueous	2
10021640-03A	MW-19-3	Aqueous	2
10021640-04A	MW-19-2	Aqueous	2
10021640-05A	MW-19-1	Aqueous	2
10021640-06A	EB-9-2/12/10	Aqueous	2
10021640-07A	TB-9-2/12/10	Aqueous	2
10021640-08A	MW-12-5	Aqueous	2
10021640-09A	MW-12-4	Aqueous	2
10021640-10A	MW-12-3	Aqueous	2
10021640-11A	MW-12-2	Aqueous	2
10021640-12A	MW-12-1	Aqueous	2
10021640-13A	EB-10-2/15/10	Aqueous	2
10021640-14A	TB-10-2/15/10	Aqueous	2
10021640-15A	MW-7	Aqueous	2
10021640-16A	MW-16	Aqueous	2

3/1/10



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<b>Date:</b> 26-Feb-10	(	QC St	ummar	y Repor	t				Work Ord 1002164	
Method Blank File ID: 20		Type: M		est Code: EF		hod 300.0		is Date	02/16/2010 13:15	
Sample ID: MB-23610	Units : mg/L			_1_100216A			Prep D		02/16/2010 12:57	
Analyte	Result	PQL				LCL(ME)	•		Val %RPD(Limit)	Qua
Chloride	ND	0.5	<del></del>	- F					,	
Nitrite (NO2) - N	ND	0.25								
Nitrate (NO3) - N	ND	0.25								
Phosphate, ortho - P Sulfate (SO4)	ND ND	0.5 0.5								
Laboratory Fortified Blank		Type: L		est Code: EF	λ Met	hod 300 0				
File ID: 21		Type. L		atch ID: 2361		1100 500.0		is Date	02/16/2010 13:33	
Sample ID: LFB-23610	Units : mg/L			_1_100216A			Prep D		02/16/2010 12:57	
Analyte	Result	PQL				LCL(ME)	•		Val %RPD(Limit)	Qua
Chloride	52.4	0.5		F	105	90	110		<u> </u>	
Nitrite (NO2) - N	1.15	0.25			92	90	110			
Nitrate (NO3) - N	1.13	0.25	1.25		90	90	110			
Phosphate, ortho - P	1.59	0.5			127	90	110			L51
Sulfate (SO4)	106	0.5			106	90	110			
Laboratory Fortified Blank Duplicate File ID: 22		Type: <b>L</b>		est Code: EF		hod 300.0		1- <b>D</b> -4	00/40/0040 40.50	
	11.11			atch ID: 2361			•		02/16/2010 13:52	
Sample ID: LFBD-23610 Analyte	Units : mg/L Result	PQL		_1_100216A SpkReft/al		LCL(ME)	Prep D		<b>02/16/2010 12:57</b> √al %RPD(Limit)	Qua
Chloride	52.7	0.5		Opkitervar	105	90	110	52.44		
Nitrite (NO2) - N	1.36	0.25			109	90	110	1.153		R5
Nitrate (NO3) - N	1.22	0.25			97	90	110	1.128	8 7.5(10)	
Phosphate, ortho - P	1.2	0.5	1.25		96	90	110	1.59	28.0(10)	R5
Sulfate (SO4)	106	0.5	100		106	90	110	105.5	5 0.9(10)	
Sample Matrix Spike		Type: L	FM Te	est Code: <b>EF</b>	A Met	hod 300.0				
File ID: 28				atch ID: 2361			•		02/16/2010 15:42	
Sample ID: 10021601-06ALFM	Units: mg/L			_1_100216A			Prep D		02/16/2010 12:57	_
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) I	RPDRef\	Val %RPD(Limit)	Qua
Chloride	64	0.5		15.43	97	80	120			
Nitrite (NO2) - N Nitrate (NO3) - N	1.18 3.38	0.25 0.25		0 2.611	95 62	80 80	120 120			M2
Phosphate, ortho - P	1.27	0.23		2.011	102	80	120			1012
Sulfate (SO4)	109	0.5		12.95	96	80	120			
Sample Matrix Spike Duplicate		Type: L	FMD Te	est Code: EF	A Met	hod 300.0			*	
File ID: 29			Ва	atch ID: 2361	0		Analys	is Date:	02/16/2010 16:01	
Sample ID: 10021601-06ALFMD	Units : mg/L		Run ID: IC	_1_100216A			Prep D	ate:	02/16/2010 12:57	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) I	RPDRef\	Val %RPD(Limit)	Qua
Chloride	64.4	0.5		15.43	98	80	120	64.03		. —
Nitrate (NO2) - N	1.17	0.25		0	93	80	120	1.184		140
Nitrate (NO3) - N Phosphate, ortho - P	3.34	0.25		2.611	59	80	120	3.382		M2
Sulfate (SO4)	1.31 109	0.5 0.5		0 12.95	105 96	80 80	120 120	1.269 108.8		
	103	0.5	100	12.50	30	30	120	100.0	0.0(10)	

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

L51 = Analyte recovery was above acceptance limits for the LCS, but was acceptable in the MS/MSD.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.



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<b>Date:</b> 24-Feb-10		(	QC S	ummar	y Repor	t				<b>Work Ordo</b> 10021640	
Method Bla	nk		Type N		est Code: E atch ID: 236		thod 314.0	Analy	sis Date:	02/16/2010 15:13	
Sample ID:	MB-23612	Units : µg/L		Run ID: IC	_3_100216/	4		Prep	Date:	02/16/2010 14:16	
Analyte		Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Perchlorate		ND	1								
_	Fortified Blank		Type L		est Code: E		thod 314.0	A	!- D-4	001401004045	
File ID: <b>15</b> Sample ID: Analyte	LFB-23612	Units : <b>µg/L</b> Result	PQL	Run ID: IC	atch ID: <b>236</b> 5_ <b>3_100216</b> SpkRefVal	4	C LCL(ME)	Prep	Date:	02/16/2010 15:31 02/16/2010 14:16 Val %RPD(Limit)	Qual
Perchlorate	***************************************	24	2	<del></del>		96	85	115		,	
Sample Mat	rix Spike		Type L		est Code: E atch ID: 236		thod 314.0	Analy	sis Date:	02/16/2010 19:12	
Sample ID:	10021640-09ALFM	Units : µg/L		Run ID: IC	_3_100216/	A		Prep	Date:	02/16/2010 14:16	
Analyte		Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef	Val %RPD(Limit)	Qual
Perchlorate		27.1	2	2 25	2.746	98	80	120			
Sample Mat	rix Spike Duplicate		Type L		est Code: E		thod 314.0	Analy	reie Date:	02/16/2010 19:31	
Sample ID:	10021640-09ALFMD	Units : µg/L		_	3_100216			Prep		02/16/2010 14:16	
Analyte		Result	PQL				LCL(ME)	- 1-		Val %RPD(Limit)	Qual
Perchlorate		27.6	2		2.746	99	80	120	27.1		

#### Comments:

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<b>Date:</b> 24-Feb-10	(	QC S	ummar	y Repor	t				<b>Work Orde</b> 10021640	- •
Method Blank File ID: 021710.B\142SMPL.D\		Type N		est Code: EF		thod 200.8	Analysis Da	ate: <b>02/</b> 1	18/2010 02:25	
Sample ID: MB-23613	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date:	02/1	16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVal %	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005	5							
Laboratory Control Spike File ID: 021710.B\143_LCS.D\		Type L		est Code: EF atch ID: 2361		hod 200.8	Analysis Da	ate: <b>02/</b> 1	18/2010 02:31	
Sample ID: LCS-23613	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date:	02/1	16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVal %	%RPD(Limit)	Qual
Chromium (Cr)	0.0513	0.005	0.05		103	80	120			
Sample Matrix Spike		Type N	AS T	est Code: EF	A Met	hod 200.8				
File ID: 021710.B\147SMPL.D\			В	atch ID: <b>236</b> 1	13K		Analysis Da	ate: <b>02/</b> 1	18/2010 02:53	
Sample ID: 10021002-06AMS	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date:	02/1	16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVal %	%RPD(Limit)	Qual
Chromium (Cr)	0.0527	0.005	0.05	0	105	80	120			
Sample Matrix Spike Duplicate		Type N	ASD T	est Code: EF	A Met	thod 200.8				
File ID: 021710.B\148SMPL.D\			В	atch ID: <b>236</b>	13K		Analysis D	ate: <b>02/</b> 1	18/2010 02:59	
Sample ID: 10021002-06AMSD	Units : mg/L		Run ID: IC	P/MS_1002	17G		Prep Date:	02/	16/2010 14:22	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	RefVal %	%RPD(Limit)	Qual
Chromium (Cr)	0.0535	0.005	0.05	0	107	80	120 0.	05268	1.5(20)	

#### Comments

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Date:

# Alpha Analytical, Inc.

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Work Order:

**QC Summary Report** 10021640 25-Feb-10 Test Code: EPA Method SW8260B Method Blank Analysis Date: 02/18/2010 10:26 File ID: 10021807.D Batch ID: MS15W0218M Prep Date: 02/18/2010 10:26 Sample ID: MBLK MS15W0218M Run ID: MSD 15\_100218B Units: µg/L SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Analyte Result **PQL** Dichlorodifluoromethane ND 0.5 Chloromethane ND Vinyl chloride ND 0.5 Chloroethane ND 0.5 **Bromomethane** ND Trichlorofluoromethane ND 0.5 1,1-Dichloroethene ND 0.5 Dichloromethane ND Freon-113 ND 0.5 trans-1,2-Dichloroethene ND 0.5 Methyl tert-butyl ether (MTBE) ND 0.5 1.1-Dichloroethane ND 0.5 2-Butanone (MEK) ND 10 cis-1,2-Dichloroethene ND 0.5 Bromochloromethane ND 0.5 Chloroform ND 0.5 2,2-Dichloropropane ND 0.5 1,2-Dichloroethane ND 0.5 1,1,1-Trichloroethane ND 0.5 1.1-Dichloropropene ND 0.5 Carbon tetrachloride ND 0.5 Benzene ND 0.5 Dibromomethane ND 0.5 1,2-Dichloropropane ND 0.5 0.5 Trichloroethene ND Bromodichloromethane ND 0.5 4-Methyl-2-pentanone (MIBK) ND 2.5 cis-1,3-Dichloropropene ND 0.5 trans-1,3-Dichloropropene ND 0.5 1,1,2-Trichloroethane ND 0.5 Toluene ND 0.5 1,3-Dichloropropane ND 0.5 Dibromochloromethane ND 0.5 1,2-Dibromoethane (EDB) ND Tetrachloroethene ND 0.5 1,1,1,2-Tetrachloroethane ND 0.5 Chlorobenzene ND 0.5 Ethylbenzene ND 0.5 m.p-Xvlene ND 0.5 Bromoform ND 0.5 Styrene ND 0.5 o-Xylene ND 0.5 1,1,2,2-Tetrachloroethane ND 0.5 1,2,3-Trichloropropane ND Isopropylbenzene ND 0.5 Bromobenzene ND 0.5 n-Propylbenzene ND 0.5 4-Chlorotoluene ND 0.5 2-Chlorotoluene ND 0.5 1,3,5-Trimethylbenzene ND 0.5 tert-Butylbenzene ND 0.5 1,2,4-Trimethylbenzene ND 0.5 sec-Butylbenzene ND 0.5 1,3-Dichlorobenzene ND 0.5 1,4-Dichlorobenzene ND 0.5 4-Isopropyltoluene ND 0.5 1.2-Dichlorobenzene ND 0.5 n-Butylbenzene ND 0.5 1,2-Dibromo-3-chloropropane (DBCP) ND 2.5 1,2,4-Trichlorobenzene ND 1 Naphthalene ND 1 Hexachlorobutadiene ND 1 1,2,3-Trichlorobenzene ND Surr: 1.2-Dichloroethane-d4 10 92 130 9.19 70 130 Surr: Toluene-d8 9.89 10 99



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<b>Date:</b> 25-Feb-10		QC Si	ımmary	Report				<b>Work Ord</b> 10021640	
Surr: 4-Bromofluorobenzene	10.6		10	106	70	130			
Laboratory Control Spike		Type Lo		st Code: EPA Meti					-
File ID: 10021805.D			Bat	ch ID: <b>MS15W021</b>	8M	-		02/18/2010 09:41	
Sample ID: LCS MS15W0218M	Units : μ <b>g/L</b>			D_15_100218B		Prep D		02/18/2010 09:41	
Analyte	Result	PQL	SpkVal 3	SpkRefVal %REC	LCL(ME)	UCL(ME) F	RPDRefV	al %RPD(Limit)	Qua
Dichlorodifluoromethane	7.51	1	10	75	70	130			
Chloromethane	7.12	2	10	71	70	130			
Vinyl chloride	9.91	1	10	99	70	130			
Chloroethane	8.72	1	10	87	70	130			L50
Bromomethane	6.71	2	10	67	70(70)	130			LOU
Trichlorofluoromethane	9.47	1	10	95 103	70 70	130 130			
1,1-Dichloroethene Dichloromethane	10.3 10.2	1 2	10 10	103	70 70	130			
trans-1,2-Dichloroethene	10.6	1	10	106	70	130			
Methyl tert-butyl ether (MTBE)	11.9	0.5	10	119	70	130			
1,1-Dichloroethane	9.91	1	10	99	70	130			
cis-1,2-Dichloroethene	11.5	1	10	115	70	130			
Bromochloromethane	12	1	10	120	70	130			
Chloroform	9.43	1	10	94	70 70	130			
2,2-Dichloropropane 1,2-Dichloroethane	11.1 11.2	1	10 10	111 112	70 70	130 130			
1.1.1-Trichloroethane	10.8	1	10	108	70 70	130			
1,1-Dichloropropene	10.6	1	10	106	70 70	130			
Carbon tetrachloride	10.9	1	10	109	70	130			
Benzene	10	0.5	10	100	70	130			
Dibromomethane	11.6	1	10	116	70	130			
1,2-Dichloropropane	10.9	1	10	109	70	130			
Trichloroethene	10.8	1	10	108	70 70	130 130			
Bromodichloromethane cis-1,3-Dichloropropene	11.7 10.8	1 1	10 10	117 108	70 70	130			
trans-1,3-Dichloropropene	11.1	1	10	111	70 70	130			
1,1,2-Trichloroethane	11.5	i	10	115	70	130			
Toluene	9.97	0.5		99.7	70	130			
1,3-Dichloropropane	12.1	1	10	121	70	130			
Dibromochloromethane	11.6	1	10	116	70	130			
1,2-Dibromoethane (EDB)	24.7	2		124	70 70	130 130			
Tetrachloroethene 1,1,1,2-Tetrachloroethane	10.8 11.3	1 1	10 10	108 113	70 70	130			
Chlorobenzene	10.2	1	10	102	70	130			
Ethylbenzene	9.86	0.5		99	70	130			
m,p-Xylene	10.7	0.5		107	70	130			
Bromoform	11.2	1	10	112	70	130			
Styrene	11.7	1	10	117	70 70	130			
o-Xylene 1.1.2.2-Tetrachloroethane	10.7 10.9	0.5	10 10	107 109	70 70	130 130			
1,2,3-Trichloropropane	22.1	1 2		110	70	130			
Isopropylbenzene	9.91	1	10	99	70	130			
Bromobenzene	10.1	1	10	101	70	130			
n-Propylbenzene	9.65	1	10	97	70	130			
4-Chlorotoluene	10.3	1	10	103	70	130			
2-Chlorotoluene	9.92	1	10	99	70 70	130 130			
1,3,5-Trimethylbenzene tert-Butylbenzene	9.47 9.55	1	10 10	95 96	70 70	130			
1,2,4-Trimethylbenzene	9.63	1	10	96	70	130			
sec-Butylbenzene	9.98	1	10	99.8	70	130			
1,3-Dichlorobenzene	9.89	1	10	99	70	130			
1,4-Dichlorobenzene	9.55	1	10	96	70	130			
4-isopropyltoluene	9.63	1	10	96	70 70	130			
1,2-Dichlorobenzene	9.33	1	10	93 96	70 70	130 130			
n-Butylbenzene 1.2-Dibromo-3-chloropropane (DBCP)	9.62 54.1	1	10 50	96 108	70 70	130			
1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene	54.1 10.8	2		108	70 70	130			
Naphthalene	12.4	2		124	70	130			
Hexachlorobutadiene	17.4	2	20	87	70	130			
1,2,3-Trichlorobenzene	11.1	2	10	111	70	130			
Surr: 1,2-Dichloroethane-d4	9.26		10	93	70	130			
Surr: Toluene-d8	9.45		10	95 407	70 70	130			
Surr: 4-Bromofluorobenzene	10.7		10	107	70	130			



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Date: 25-Feb-10 QC Summary Report Work Order: 10021640

Sample Matrix Spike		T	· -	a Cada - =•	3 A 44-4	and cities	EUD.		
File ID: 10021811.D		Type MS		st Code: <b>El</b>				: 02/18/2010 11:55	
Sample ID: 10021640-09AMS	Units : μg/L			tch ID: <b>MS</b> 1 i <b>D_15_100</b> 2		ON	Prep Date:	02/18/2010 11:55	
Analyte	Result	PQL				1 CL(ME)	UCL(ME) RPDRe		Qua
								TVGI 701 G CLITTLY	
Dichlorodifluoromethane Chloromethane	41.1 38.8	2.5 10	50 50	0	82 78	13 28	167 145		
Vinyl chloride	49.4	2.5	50	0	99	43	134		
Chloroethane	39.9	2.5	50	ő	80	39	154		
Bromomethane	28.8	10	50	0	58	19	176		
Trichlorofluoromethane	46.1	2.5	50	0	92	34	160		
1,1-Dichloroethene	47.1	2.5	50	0	94	60	130		
Dichloromethane	47.7	10	50	0	95	68	130		
trans-1,2-Dichloroethene	49.1	2.5	50	0	98	63	130		
Methyl tert-butyl ether (MTBE)	57.8	1.3	50 50	0	116	56	141		
1,1-Dichloroethane cis-1,2-Dichloroethene	45.6 53	2.5 2.5	50 50	0	91 106	61 70	130 130		
Bromochloromethane	56.8	2.5 2.5	50 50	0	114	70 70	130		
Chloroform	45.3	2.5	50	0.54	90	67	130		
2,2-Dichloropropane	49.1	2.5	50	0.04	98	30	152		
1,2-Dichloroethane	53.2	2.5	50	Õ	106	60	135		
1,1,1-Trichloroethane	49.2	2.5	50	0	98	59	137		
1,1-Dichloropropene	48.7	2.5	50	0	97	63	130		
Carbon tetrachloride	50.2	2.5	50	0.86	99	50	147		
Benzene	45.9	1.3	50	0	92	67	130		
Dibromomethane	56	2.5	50	0	112	69	133		
1,2-Dichloropropane	49.5	2.5	50	0	99	69 60	130		
Trichloroethene Bromodichloromethane	49.3	2.5	50	0	99 108	69 66	130 134		
cis-1,3-Dichloropropene	54 47.7	2.5 2.5	50 50	0	95	63	130		
trans-1,3-Dichloropropene	51	2.5	50	0	102	66	131		
1,1,2-Trichloroethane	54.8	2.5	50	ŏ	110	68	130		
Toluene	45.6	1.3	50	0	91	66	130		
1,3-Dichloropropane	58	2.5	50	0	116	70	130		
Dibromochloromethane	55.4	2.5	50	0	111	70	130		
1,2-Dibromoethane (EDB)	121	5	100	0	121	70	130		
Tetrachloroethene	49.6	2.5	50	0	99	61	134		
1,1,1,2-Tetrachloroethane	52.9	2.5	50	0	106	70	130		
Chlorobenzene Ethylbenzene	46.9 45.1	2.5 1.3	50 50	0	94 90	70 68	130 130		
m,p-Xylene	48.8	1.3	50 50	0	98	64	130		
Bromoform	54.1	2.5	50	0	108	64	138		
Styrene	53.1	2.5	50	0	106	69	130		
o-Xylene	49.4	1.3	50	Ō	99	70	130		
1,1,2,2-Tetrachloroethane	52	2.5	50	0	104	65	131		
1,2,3-Trichloropropane	105	10	100	0	105	70	130		
Isopropylbenzene	44.3	2.5	50	0	89	64	138		
Bromobenzene	46	2.5	50	0	92	70	130		
n-Propylbenzene	42.7	2.5	50	0	85	66 70	132		
4-Chlorotoluene 2-Chlorotoluene	45.1	2.5	50 50	0	90 86	70 70	130 130		
1,3,5-Trimethylbenzene	43.2 41.8	2.5 2.5	50 50	0	86 84	70 66	136		
tert-Butylbenzene	41.8	2.5	50 50	0	84	65	137		
1,2,4-Trimethylbenzene	43	2.5	50 50	0	86	65	137		
sec-Butylbenzene	43.4	2.5	50	0	87	66	134		
1,3-Dichlorobenzene	44.1	2.5	50	Ō	88	70	130		
1,4-Dichlorobenzene	42.3	2.5	50	0	85	70	130		
4-Isopropyltoluene	42	2.5	50	0	84	66	137		
1,2-Dichlorobenzene	42.5	2.5	50	0	85	70	130		
n-Butylbenzene	42	2.5	50	0	84	60	142		
1,2-Dibromo-3-chloropropane (DBCP)	249	15	250	0	99.8	67	130		
1,2,4-Trichlorobenzene	47.3	10	50	0	95	61	137		
Naphthalene Hexachlorobutadiene	55 75	10	50 100	0	110 75	40 61	167 130		
1,2,3-Trichlorobenzene	75 50	10 10	100 50	0	75 99.9	51	144		
Surr: 1,2-Dichloroethane-d4	46.4	10	50 50	U	93	70	130		
	70.7		50						
Surr: Toluene-d8	47.8		50		96	70	130		



Surr: 4-Bromofluorobenzene

# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order: Date: **QC Summary Report** 10021640 25-Feb-10 Test Code: EPA Method SW8260B Type MSD Sample Matrix Spike Duplicate Analysis Date: 02/18/2010 12:17 File ID: 10021812.D Batch ID: MS15W0218M Prep Date: 02/18/2010 12:17 Sample ID: 10021640-09AMSD Units: µg/L Run ID: MSD\_15\_100218B SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Analyte Result PQL Qual 13 167 41.13 6.6(20)Dichlorodifluoromethane 43.9 2.5 50 0 38.81 5.3(20) 40.9 10 50 0 82 28 145 Chloromethane 5.4(20) 104 43 134 49.38 Vinyl chloride 52.1 2.5 50 O Chloroethane 39 154 39.9 4.0(20)41.5 2.5 50 0 83 176 11.7(20) **Bromomethane** 0 65 19 28.82 32.4 10 50 1.2(20) 160 46.12 93 34 Trichlorofluoromethane 2.5 0 46.7 50 1.1-Dichloroethene 48.5 2.5 50 0 97 60 130 47.13 2.9(20)47.66 5.1(20)Dichloromethane 100 68 130 50.1 10 50 0 trans-1,2-Dichloroethene 100 63 130 49.05 2.2(20) 2.5 0 50.1 50 57.84 4.6(20)56 141 Methyl tert-butyl ether (MTBE) 60.6 1.3 50 121 61 130 45.61 3.2(20)94 1,1-Dichloroethane 47.1 2.5 50 0 1.4(20)cis-1.2-Dichloroethene 52.3 2.5 50 n 105 70 130 53 115 56.79 1.2(20) 70 130 Bromochloromethane 57.5 2.5 50 45.31 2.6(20) 2.5 50 0.54 92 67 130 Chloroform 46.5 2.2-Dichloropropane 2.5 0 103 30 152 49.06 4.5(20)51.3 50 53.22 3.4(20)1,2-Dichloroethane 55.1 2.5 50 110 60 135 3.2(20)137 49.2 1,1,1-Trichloroethane 59 50.8 2.5 50 0 102 130 48.72 2.5(20) 2.5 50 0 99.9 1.1-Dichloropropene 50 5.0(20) 50.15 Carbon tetrachloride 52.7 2.5 50 0.86 104 50 147 2.9(20)67 130 45.85 94 Benzene 47.2 1.3 50 0 56.04 5.9(20) Dibromomethane 59.5 2.5 50 0 119 69 133 49.54 4.9(20)130 69 1,2-Dichloropropane 52 2.5 50 0 104 Trichloroethene 50.7 2.5 50 0 101 69 130 49.29 2.8(20)3.8(20) 53.95 0 112 66 134 Bromodichloromethane 56.1 2.5 50 4.8(20) 63 130 47.69 2.5 50 0 100 cis-1,3-Dichloropropene 50 5.8(20) 66 131 51.04 trans-1,3-Dichloropropene 54.1 2.5 50 0 108 3.1(20) 54.8 1,1,2-Trichloroethane 56.5 2.5 50 0 113 68 130 45.58 2.9(20)66 130 Toluene 46.9 1.3 50 0 94 3.1(20)120 70 130 58.04 1,3-Dichloropropane 59.9 2.5 50 0 55.44 4.2(20) 70 130 Dibromochloromethane 57.8 2.5 50 0 116 70 120.8 4.4(20)1,2-Dibromoethane (EDB) 5 100 0 126 130 126 1.8(20) 2.5 101 61 134 49.6 Tetrachloroethene 50.5 50 0 130 52.89 2.9(20)70 109 1,1,1,2-Tetrachloroethane 54.4 2.5 50 0 Chlorobenzene 0 97 70 130 46.93 3.4(20)48.6 2.5 50 2.6(20)0 92 68 130 45.05 Ethylbenzene 46.2 1.3 50 64 130 48.75 2.4(20) 0 99.9 50 m,p-Xylene 49.9 1.3 4.6(20)64 138 54.13 **Bromoform** 56.7 2.5 50 0 113 69 130 3.8(20)53.1 Styrene 55.2 2.5 50 0 110 49.43 2.3(20)o-Xylene 50.6 1.3 50 Λ 101 70 130 5.4(20) 52 0 110 65 131 1.1.2.2-Tetrachloroethane 54.9 2.5 50 5.4(20) 70 130 105 100 0 1,2,3-Trichloropropane 111 10 111 Isopropylbenzene 64 138 44.28 1.7(20)2.5 50 0 90 45 46.04 2.8(20) 70 130 Bromobenzene 47.3 2.5 50 0 95 42.66 1.8(20)0 87 66 132 n-Propylbenzene 43.5 2.5 50 0 93 70 130 45.05 3.1(20)4-Chlorotoluene 46.5 2.5 50 43.23 3.1(20)0 89 70 130 2-Chlorotoluene 44.6 2.5 50 41.83 2.4(20)1,3,5-Trimethylbenzene 42.8 0 86 66 136 2.5 50 2.2(20) 41.92 tert-Butvlbenzene 42.9 2.5 50 0 86 65 137 42.95 1.8(20) 87 65 137 0 1,2,4-Trimethylbenzene 43.7 2.5 50 2.4(20)sec-Butylbenzene 44 5 2.5 50 0 89 66 134 43.41 44.09 4.1(20) 70 130 1,3-Dichlorobenzene 2.5 50 0 92 42.32 3.5(20)2.5 50 0 88 70 130 1,4-Dichlorobenzene 43.8 41.99 2.2(20)0 86 66 137 4-Isopropyltoluene 42.9 2.5 50 3.7(20)0 88 70 130 42.54 1,2-Dichlorobenzene 44.1 2.5 50 4.1(20)87 60 142 41.97 2.5 50 0 n-Butvibenzene 43.7 249.4 5.0(20) 0 67 130 1,2-Dibromo-3-chloropropane (DBCP) 262 15 250 105 0 102 61 137 47.27 7.6(20)1,2,4-Trichlorobenzene 10 50 51 55.03 9.9(20)0 122 40 167 Naphthalene 60.8 10 50 6.3(20)130 74.95 0 80 61 Hexachlorobutadiene 79.8 10 100 107 144 49.96 6.4(20)50 0 51 1,2,3-Trichlorobenzene 53.3 10 130 70 Surr: 1,2-Dichloroethane-d4 46.2 50 92 94 70 130 Surr: Toluene-d8 47.2 50

50

52.6

105

70

130



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:
25-Feb-10

QC Summary Report

Work Order: 10021640

#### **Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

# Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778

TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention Shane Walton David Conner Phone Number (614) 424-4117 x (818) 393-2808 x connerd@battelle.org waltons@battelle.org EMail Address

Battelle Memorial Institute

Client's COC #: 24133, 28879, 024223

Job :

G005862/JPL Groundwater Monitoring

San Diego, CA 92110

Betsy Cutie

(614) 424-4899 x

cutiee@batelle.org

218013

Suite C-205 3990 Old Town Ave

WorkOrder: BMIS10021640

Page: 1 of 2

**Report Due By: 5:00 PM On: 02-Mar-10** 

EDD Required: Yes

Sampled by: David Loera Cooler Temp Samples Received

16-Feb-10 Date Printed

16-Feb-10

									Requested Tests	ed Tests	 SEASON SEASON SE
Alpha	Client	Coll	Collection N	No. of Bottles	es	300_0_W	314_W	SD	VOC_TIC_ VOC_W	VOC_W	
Sample ID	Sample ID	Matrix Date		Alpha Sub	TAT				8		Sample Remarks
BMI10021640-01A	MW-19-5	AQ 02/	02/12/10 08:00	4 0	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	CONTRACTOR IN THE CONTRACTOR I
BMI10021640-02A	MW-19-4	AQ 02/	02/12/10 08:22	4 0	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	
BMI10021640-03A	MW-19-3	AQ 02/	02/12/10 08:44	4 0	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	
BMI10021640-04A	MW-19-2	AQ 02/	02/12/10 09:08	4 0	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	 Level IV QC
BMI10021640-05A	MW-19-1	AQ 02/	02/12/10 09:30	0	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	
BMI10021640-06A	EB-9-2/12/10	AQ 02/ 08	02/12/10 09:20	0	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	Equip. Blank
BMI10021640-07A	TB-9-2/12/10	AQ 02/	02/12/10 00:00	0	10				VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	Reno TB, 8/25/09
BMI10021640-08A	MW-12-5	AQ 02/:	02/15/10 09:51	0	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	
BMI10021640-09A	MW-12-4	AQ 02/	02/15/10 10:17	8	10		Perchlorate		VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	MS/MSD
BM110021640-10A MW-12-3	MW-12-3	AQ 02/	02/15/10 10:40	5	10		Perchlorate	Çţ	VOC by 524 VOC by 524 Criteria Criteria	VOC by 524 Criteria	

The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Alpha Analytical, Inc. Company

Date/Time

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other)

Comments:

Security seals intact. Frozen ice. Temp Blank # 7570 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by:

Signature

# Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 TEL: (775) 355-1044 FAX: (775) 355-0406

Report Due By: 5:00 PM On: 02-Mar-10

WorkOrder: BMIS10021640

Page: 2 of 2

Report Attention Phone Number EMail Address

Client:

Battelle Memorial Institute

3990 Old Town Ave

Suite C-205

San Diego, CA 92110

218013

Betsy Cutie Shane Walton David Conner (818) 393-2808 x (614) 424-4899 (614) 424-4117 x waltons@battelle.org connerd@battelle.org cutiee@batelle.org

EDD Required: Yes

Sampled by: David Loera Cooler Temp

16-Feb-10

Samples Received Date Printed 16-Feb-10

Client's COC #: 24133, 28879, 024223 QC Level: DS4 = DOD QC Required: Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates Job : G005862/JPL Groundwater Monitoring

Alpha BMI10021640-13A BMI10021640-11A MW-12-2 Sample ID BMI10021640-16A MW-16 BMI10021640-15A BMI10021640-14A BMI10021640-12A MW-12-1 MW-7 TB-10-2/15/10 EB-10-2/15/10 Client Sample ID Š Š AQ 02/15/10 11:40 Š Š AQ 02/15/10 11:03 Matrix Date 02/15/10 02/15/10 11:17 02/15/10 00:00 02/15/10 09:15 Collection No. of Bottles Alpha Sub တ Ç თ G S 0 0 0 0 0 0 ΤAΤ 6 70 5 6 6 6 300 0 W × Perchlorate Perchlorate Perchlorate Perchlorate Perchlorate 314\_W METALS\_D VOC\_TIC\_ VOC\_W Ç Ω Ç Ω Ç VOC by 524 VOC by 524 Criteria Criteria Requested Tests Sample Remarks Reno TB, 8/25/09 Equip. Blank Level IV QC

Comments:

Security seals intact. Frozen ice. Temp Blank # 7570 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by:	
e Hohmson	Signature,
Taxe Michanson	Pkint Name
Alpha Analytical, Inc.	Company
2/11/10/11/0	Date/Time

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

# Billing Information:

Ç<u>i</u>y, Name GENALD Address 20% TORPKINS RING マグ BATTELLE

2

Sparks, Nevada 89431-5778 255 Glendale Avenue, Suite 21 Alpha Analytical, Inc.

Ö

Samples Collected From Which State? 24133

OR OTHER

City, State, Zip <u>CoLumisus</u> , oH 432o/ Phone Number Fax	Phone (775) 355-1044 Fax (775) 355-0406	Analyses Required	
Client Name RATIFILE /DAVID CONNER	PO.# 2(8013 Job# C,005862		Required QC Level?
TOWN AVE C-225	ess	42	( <u>II</u> ) =
_	Phone # Fax #	(S) (S) (EDD / EDD / EDF) YES	:SNO
Sampled by	Ток		
Sampled Sampled Below Lab ID Number ( Office Use Only )	Sample Description TAT Filed ** See below	_	RKS
10-04-01/2012 BMI/01/2016-10-01	MW-19-5 WORN WAY	<del>X</del> <	
- Company of the comp			
822 CO- CB	MW-19-4	*	
- CHE			
-03-85	Mw-19-3	X	
+			
908 - 04	78-19-7	XX LEVEL ID	90
<b>9</b> 50 -05	Mb-19-1	*	
٥١٥ - ا ا حرو	EB-9-2/12/10	XX EQUIP BLANK	LANK
<u>-</u>	TB-9-2/12/10 11 1/2	X TRIP BLANE	3uane

# ADDITIONAL INSTRUCTIONS:

Signature	Print Name	Company	Date	Time
Relinquished by	MANGO NEUDOM	MSIGHT GEC INC	2/15/10 1307	1307
Received by	Anthon Wark		2/15/10 1307	1307
Relinquished by	Anthony Starts	ALPHA	2/15/10 1400	1400
Received by Muunay	Kminay	AAN	2/16/10	1020
Relinquished by	/			
Received by				

\*Key: AQ - Aqueous NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report. SO - Soil WA - Waste OT - Other AR - Air \*\*: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

illing Information:	Alaba Analuti	J	rom Which State? 28879
ddress SOS KING AVE		AZ CA CA OR	age
- LAMBU	Phone (7/5) 355-1044 Fax (7/5) 355-0406		Analyses Required
DAVID CON	P.O. # 218013 Job # 40 EMail Address	(2.00	Required OC Level:
0 1 6 C	Phope # (6/9) 726- 73// Fax#	(5 Ly)	EDD / EDF? YESNO
Matrix* Sampled by		هد (	
ampled Sampled Below Lab ID Number (Use Only)	Sample Description TAT	Field ** See below	/ REMARKS
151 dish AQ BMIICO 1164008	Mn-12-5 Norm		
		•	
017	MW-12-4	× ×	M5/H39
01-	MW-12-3	1/05 X X	
		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	1227-1-		
1131 -12	MW-12-1	× × ×	LEVEL IT OC
21-	ER-10-2/15/10	У Х Х	EWUIP. BLANK
)	TB-10- 2/15 /15	× 1/v	TRIP READE
ADDITIONAL INSTRUCTIONS:			
Signature	Print Name	Company	Date Time
Relinquished	4	INSIGHT	2/15/10 1307
Received by	Arthor Start	ALPKA	L.C. 017/2
Relinquished by	Anthony Stark	ALPHA	2/15/10 1400
Relinquished by	KMUMA	AA	2/14/10 1070
Received by			
Key: AQ - Aqueous SO - Soil WA - Waste	OT - Other AR - Air **: L-Liter	V-Voa S-Soil Jar O-Orbo T-Tedlar	B-Brass P-Plastic OT-Other

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis

*Key: AQ - Aqueous SO - Soil / WA - Waste	Received by KMMMM	Relinquished by Z& (())	Received by Add Star	Relinquished By	Received by	Relinquished by June A_	Signature	ADDITIONAL INSTRUCTIONS:						alste 1	SI-OHORITOOLITIMS DA also SIND	· ·	Time Date See Key Sampled by David Lights	City, State, Zip hasadana CA 91109	Address 4800 Oak Grove Dr 14/5 801	Client Name David Connes	City, State, Zip (01) mous 017 7,240  Phone Number 014 424-4649 Fax 614 424	Address 305 King All 1376	Name Gerald longkins	Billing Information:
OT - Other	Kminai	ANTHON S	Actor S	have be	LMRCO M	David Los	Print Name							MW-16	MW-7	Sample Description	Report Attention	Phone (619) 726-7	EMail Address Conneral	PO.# 218013	1-3667			1
AR-Air **: L-Liter	1	te Ch	24	Roca	MEND M	ola	ame									tion TAT	nner	7311 Fax 614	abottette.o.	9 # qor	Fax (775) 355-0406	Phone (775) 355-1044	255 Glendale Avenue, Suite 21	Alpha Analytical, Inc.
V-Voa S-Soil Jar	AM	ALOHA	1-LOHA	1001645	INSIGHT	Battelle								ज		Fittered ** See below	Total and type of containers	11-99-85H		5005862			21	ل
O-Orbo T-Tedlar							Company							* *	* * *	VI Total Cilia	20/20/20/20/20/20/20/20/20/20/20/20/20/2	13	/4	(2) (8) (2)	Analyses		AZ CA NV	Samples Collected F
B-Brass P-Plastic	2/16/10	2-14-10	2-15-16	2-15-10	2-15-10	2-15-10	Date									R	Global ID#	<u></u>	- - -	////	Analyses Required		OTHER Pag	W mc
OT-Other	1020	1400	noz	100	1235	22	Time								The state of the s	REMARKS	1	EDD/EDF? YESX NO	(   <u> </u> )	Required QC Level			Page # 1 of 1	このないとい

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis

\*Key: AQ - Aqueous



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: 02-Mar-10

David Conner Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

(818) 393-2808

BMI10021705

**Cooler Temp:** 

4°C

 Alpha's Sample ID	Client's Sample ID	Matrix	
10021705-01A	MW-6	Aqueous	
10021705-02A	MW-13	Aqueous	
10021705-03A	MW-24-4	Aqueous	
10021705-04A	MW-24-3	Aqueous	
10021705-05A	MW-24-2	Aqueous	
10021705-06A	MW-24-1	Aqueous	
10021705-07A	DUPE-5-1Q10	Aqueous	
10021705-08A	EB-11-02/16/10	Aqueous	
10021705-09A	TB-11-02/16/10	Aqueous	

#### **Manually Integrated Analytes**

Alpha's Sample ID	<u>Test Reference</u>	Analyte
10021705-01A	EPA Method 314.0	Perchlorate
10021705-02A	EPA Method 314.0	Perchlorate
10021705-06A	EPA Method 314.0	Perchlorate
10021705-07A	EPA Method 314.0	Perchlorate

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Saulner

Dalter Hirihour



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

# **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** 

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/17/10

Job:

G005862/JPL Groundwater Monitoring

Anions by IC EPA Method 300.0

	Parameter	Concentration	Reporting	Date	Date
			Limit	Extracted	Analyzed
Client ID: MW-13					
Lab ID: BMI10021705-02A	Chloride	85	50 mg/L	02/17/10 11:27	02/17/10 12:56
Date Sampled 02/16/10 12:50	Nitrite (NO2) - N	ND	0.25 mg/L	02/17/10 11:27	02/17/10 12:56
	Nitrate (NO3) - N	7.8	0.25 mg/L	02/17/10 11:27	02/17/10 12:56
	Phosphate, ortho - P	ND	0.50 mg/L	02/17/10 11:27	02/17/10 12:56
	Sulfate (SO4)	97	0.50 mg/L	02/17/10 11:27	02/17/10 12:56
Client ID: MW-24-1					
Lab ID: BMI10021705-06A	Chloride	73	50 mg/L	02/17/10 11:27	02/17/10 13:15
Date Sampled 02/16/10 09:32	Nitrite (NO2) - N	ND	0.25 mg/L	02/17/10 11:27	02/17/10 13:15
-	Nitrate (NO3) - N	1.7	0.25 mg/L	02/17/10 11:27	02/17/10 13:15
	Phosphate, ortho - P	ND	0.50 mg/L	02/17/10 11:27	02/17/10 13:15
	Sulfate (SO4)	46	0.50 mg/L	02/17/10 11:27	02/17/10 13:15
Client ID: DUPE-5-1Q10					
Lab ID: BMI10021705-07A	Chloride	73	50 mg/L	02/17/10 11:27	02/17/10 13:33
Date Sampled 02/16/10 00:00	Nitrite (NO2) - N	ND	0.25 mg/L	02/17/10 11:27	02/17/10 13:33
•	Nitrate (NO3) - N	1.7	0.25 mg/L	02/17/10 11:27	02/17/10 13:33
-	Phosphate, ortho - P	ND	0.50 mg/L	02/17/10 11:27	02/17/10 13:33
	Sulfate (SO4)	47	0.50 mg/L	02/17/10 11:27	02/17/10 13:33

ND = Not Detected

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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## ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** 

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/17/10

Job:

G005862/JPL Groundwater Monitoring

# Perchlorate by Ion Chromatography

EPA Method 314.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-6 Lab ID: BMI10021705-01A Date Sampled 02/15/10 14:40	Perchlorate	2.68	1.00 μg/L	02/18/10 13:37	02/22/10 17:58
Client ID: MW-13 Lab ID: BMI10021705-02A Date Sampled 02/16/10 12:50	Perchlorate	5.02	1.00 μg/L	02/18/10 13:37	02/22/10 18:53
Client ID: MW-24-3 Lab ID: BMI10021705-04A Date Sampled 02/16/10 08:30	Perchlorate	ND	1.00 μg/L	02/18/10 13:37	02/22/10 19:12
Client ID: MW-24-2 Lab ID: BMI10021705-05A Date Sampled 02/16/10 08:53	Perchlorate	9.81	1.00 μg/L	02/18/10 13:37	02/22/10 19:30
Client ID: MW-24-1 Lab ID: BMI10021705-06A Date Sampled 02/16/10 09:32	Perchlorate	232	10.0 µg/L	02/18/10 13:37	02/22/10 19:49
Client ID: <b>DUPE-5-1Q10</b> Lab ID: BMI10021705-07A Date Sampled 02/16/10 00:00	Perchlorate	228	10.0 µg/L	02/18/10 13:37	02/22/10 20:07
Client ID: <b>EB-11-02/16/10</b> Lab ID: <b>BMI1</b> 0021705-08A Date Sampled 02/16/10 09:25	Perchlorate	ND	1.00 μg/L	02/18/10 13:37	02/22/10 20:25

ND = Not Detected

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#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641 Date Received: 02/17/10

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-6 Lab ID: BMI10021705-01A Date Sampled 02/15/10 14:40	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 16:06
Client ID: MW-13 Lab ID: BMI10021705-02A Date Sampled 02/16/10 12:50	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 16:28
Client ID: MW-24-4 Lab ID: BMI10021705-03A Date Sampled 02/16/10 08:06	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 16:34
Client ID: MW-24-3 Lab ID: BMI10021705-04A Date Sampled 02/16/10 08:30	. Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 16:39
Client ID: MW-24-2 Lab ID: BMI10021705-05A Date Sampled 02/16/10 08:53	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 16:45
Client ID: MW-24-1 Lab ID: BMI10021705-06A Date Sampled 02/16/10 09:32	Chromium (Cr)	0.025	0.0050 mg/L	02/18/10 13:15	02/19/10 16:51
Client ID: <b>DUPE-5-1Q10</b> Lab ID: BMI10021705-07A Date Sampled 02/16/10 00:00	Chromium (Cr)	0.013	0.0050 mg/L	02/18/10 13:15	02/19/10 16:56
Client ID: <b>EB-11-02/16/10</b> Lab ID: BMI10021705-08A Date Sampled 02/16/10 09:25	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 17:02

ND = Not Detected

Roger Scholl Kandy Soulur Walter Finh

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3/2/10 Report Date



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## **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110

Attn: David Conner Phone: (818) 393-2808

Fax:

(614) 458-6641

Job: G005862/JPL Groundwater Monitoring

# Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated		
	Parameter	Estimated	Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID : MW-6 Lab ID : BMI10021705-01A  Date Received : 02/17/10  Date Sampled : 02/15/10 14:40	*** None Found ***	ND	2.0 μg/L	02/19/10 14:33	02/19/10 14:33
Client ID: MW-13 Lab ID: BMI10021705-02A Date Received: 02/17/10 Date Sampled: 02/16/10 12:50	*** None Found ***	ND	2.0 μg/L	02/19/10 14:55	02/19/10 14:55
Client ID: MW-24-3  Lab ID: BMI10021705-04A  Date Received: 02/17/10  Date Sampled: 02/16/10 08:30	Sulfur dioxide	7.2	2.0 μg/L	02/19/10 15:17	02/19/10 15:17
Client ID: MW-24-2 Lab ID: BMI10021705-05A Date Received: 02/17/10 Date Sampled: 02/16/10 08:53	*** None Found ***	ND	2.0 μg/L	02/19/10 15:39	02/19/10 15:39
Client ID: MW-24-1 Lab ID: BMI10021705-06A Date Received: 02/17/10 Date Sampled: 02/16/10 09:32	*** None Found ***	ND	2.0 μg/L	02/19/10 16:01	02/19/10 16:01
Client ID: DUPE-5-1Q10 Lab ID: BMI10021705-07A Date Received: 02/17/10 Date Sampled: 02/16/10 00:00	*** None Found ***	ND	2.0 μg/L	02/19/10 16:23	02/19/10 16:23
Client ID: EB-11-02/16/10 Lab ID: BMI10021705-08A Date Received: 02/17/10 Date Sampled: 02/16/10 09:25	*** None Found ***	ND	2.0 μg/L	02/19/10 13:26	02/19/10 13:26
Client ID: TB-11-02/16/10 Lab ID: BMI10021705-09A Date Received: 02/17/10 Date Sampled: 02/16/10 00:00	*** None Found ***	ND	2.0 μg/L	02/19/10 13:03	02/19/10 13:03



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Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

Roger Scholl Kandy Saul

Walter Finhon

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Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/2/10

Report Date



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

Alpha Analytical Number: BMI10021705-01A

G005862/JPL Groundwater Monitoring

Client I.D. Number: MW-6

David Conner Attn:

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/15/10 14:40

Received: 02/17/10

Extracted: 02/19/10 14:33 Analyzed: 02/19/10 14:33

## Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	porting I	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	0.54		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	4.0		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyi-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

1 1

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

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μg/L

μg/L

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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021705-02A

Client I.D. Number: MW-13

**David Conner** Attn:

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/16/10 12:50

Received: 02/17/10

Extracted: 02/19/10 14:55 Analyzed: 02/19/10 14:55

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	porting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	0.82		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chiorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND .	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	· ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	103	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

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Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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µg/L

µg/L

3/2/10

**Report Date** 



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021705-04A

Client I.D. Number: MW-24-3

Attn: David Conner

Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/16/10 08:30

Received: 02/17/10

Extracted: 02/19/10 15:17 Analyzed: 02/19/10 15:17

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Repo	rting 1	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### ANALYTICAL REPORT

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021705-05A

Client I.D. Number: MW-24-2

Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Sampled: 02/16/10 08:53

Received: 02/17/10

Extracted: 02/19/10 15:39 Analyzed: 02/19/10 15:39

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Soulur

Walter Firehour

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

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Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021705-06A

Client I.D. Number: MW-24-1

Attn:

**David Conner** 

Fax:

Phone: (818) 393-2808

(614) 458-6641

Sampled: 02/16/10 09:32

Received: 02/17/10

Extracted: 02/19/10 16:01 Analyzed: 02/19/10 16:01

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	2.1		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	0.82		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	103	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/2/10

Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021705-07A

Client I.D. Number: DUPE-5-1Q10

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/16/10 00:00

Received: 02/17/10

Extracted: 02/19/10 16:23 Analyzed: 02/19/10 16:23

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	2.2		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	0.79		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	101	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
		1			-					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

34 1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl Kandy Saulur

Walter Hindrey

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave San Diego, CA 92110

Attn:

**David Conner** Phone: (818) 393-2808

Fax:

(614) 458-6641

G005862/JPL Groundwater Monitoring

Sampled: 02/16/10 09:25

Received: 02/17/10

Alpha Analytical Number: BMI10021705-08A Client I.D. Number: EB-11-02/16/10

Extracted: 02/19/10 13:26

Analyzed: 02/19/10 13:26

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					
~ 4	4.0.00									

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

1,2-Dibromoethane (EDB)

Tetrachloroethene

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021705-09A

Client I.D. Number: TB-11-02/16/10

Attn: David Conner

Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/16/10 00:00

Received: 02/17/10

Extracted: 02/19/10 13:03 Analyzed: 02/19/10 13:03

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	F	Reporting	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochioromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	· ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Note: Analysis conducted using EPA Method 524.2 criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulner

Walter Stirker

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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# **VOC Sample Preservation Report**

Work Order: BMI10021705 Job: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН	
10021705-01A	MW-6	Aqueous	2	
10021705-02A	MW-13	Aqueous	2	
10021705-04A	MW-24-3	Aqueous	2	
10021705-05A	MW-24-2	Aqueous	2	
10021705-06A	MW-24-1	Aqueous	2	
10021705-07A	DUPE-5-1Q10	Aqueous	2	
10021705-08A	EB-11-02/16/10	Aqueous	2	
10021705-09A	TB-11-02/16/10	Aqueous	2	

3/2/10



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<b>Date:</b> 25-Feb-10	(	QC Sı	ımmar	y Repor	t				<b>Work Ord</b> 1002170	
Method Blank File ID: 20		Туре М		est Code: El		hod 300.0		sis Date:	02/17/2010 11:42	<del></del>
Sample ID: MB-23617	Units : mg/L		Run ID: IC	_1_1002174	4		Prep	Date:	02/17/2010 11:27	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	/al %RPD(Limit)	Qual
Chloride Nitrite (NO2) - N Nitrate (NO3) - N Phosphate, ortho - P Sulfate (SO4)	ND ND ND ND ND	0.5 0.25 0.25 0.5 0.5								
Laboratory Fortified Blank		Type LI	FB To	est Code: El	PA Met	hod 300.0				
File ID: <b>21</b>			Ва	atch ID: 236	17		Analy	sis Date:	02/17/2010 12:00	
Sample ID: LFB-23617	Units: mg/L		Run ID: IC	_1_1002174	A		Prep	Date:	02/17/2010 11:27	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	/al %RPD(Limit)	Qual
Chloride Nitrite (NO2) - N Nitrate (NO3) - N Phosphate, ortho - P Sulfate (SO4)	52.7 1.33 1.22 1.19 107	0.5 0.25 0.25 0.5 0.5	50 1.25 1.25 1.25 100		105 106 97 95 107	90 90 90 90 90	110 110 110 110 110			
Sample Matrix Spike		Type LI	FM To	est Code: El	PA Met	hod 300.0				
File ID: 34				atch ID: 236	17		Analy	sis Date:	02/17/2010 16:02	
Sample ID: 10021705-07ALFM	Units : mg/L		Run ID: IC	_1_100217	4		Prep	Date:	02/17/2010 11:27	
Analyte	Result	PQL				LCL(ME)	-		/al %RPD(Limit)	Qual
Chloride	100	0.5	50	73.08	54	80	120			M2
Nitrite (NO2) - N	1.27	0.25	1.25	0	101	80	120			
Nitrate (NO3) - N	2.51	0.25	1.25	1.699	65	80	120			M2
Phosphate, ortho - P	1.42	0.5	1.25	0	114	80	120			
Sulfate (SO4)	130	0.5	100	46.72	83	80	120			
Sample Matrix Spike Duplicate		Type LI	FMD T	est Code: El	PA Met	hod 300.0				
File ID: 35				atch ID: 236			•		02/17/2010 16:20	
Sample ID: 10021705-07ALFMD	Units : mg/L			_1_100217#			Prep		02/17/2010 11:27	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRef\	/al %RPD(Limit)	Qual
Chloride	101	0.5	50	73.08	55	80	120	100.1	1 0.5(10)	M2
Nitrite (NO2) - N	1.11	0.25	1.25	0	89	80	120	1.266	3 13.1(10)	R5
Nitrate (NO3) - N	2.39	0.25	1.25	1.699	55	80	120	2.512	2 4.9(10)	M2
Phosphate, ortho - P	1.13	0.5	1.25	0	90	80	120	1.424	22.9(10)	R5
Sulfate (SO4)	130	0.5	100	46.72	83	80	120	129.8	3 0.0(10)	

#### Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.



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<b>Date:</b> 26-Feb-10		(	QC S	ummai	ry Repor	t				<b>Work Orde</b> 10021705	
Method Bla	nk		Type I	MBLK 7	est Code: E	PA Me	thod 314.0				
File ID: <b>15</b>				E	Batch ID: <b>236</b>	31		Analysis Da	ate: (	02/22/2010 16:26	
Sample ID:	MB-23631	Units : µg/L		Run ID: 10	C_3_100222 <i>i</i>	4		Prep Date:	. (	02/18/2010 13:37	
Analyte		Result	PQL	SpkVal	I SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Perchlorate		ND		1							
Laboratory	Fortified Blank		Type I	LFB 7	Test Code: E	PA Met	thod 314.0				
File ID: <b>16</b>				E	Batch ID: 236	31		Analysis Da	ate: (	02/22/2010 16:44	
Sample ID:	LFB-23631	Units : µg/L		Run ID: IC	C_3_100222	4		Prep Date:	. (	02/18/2010 13:37	
Analyte		Result	PQL	SpkVa	l SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Perchlorate		24.5		2 25	5	98	85	115			
Sample Mat	rix Spike		Type I	LFM 7	Test Code: E	PA Me	thod 314.0				
File ID: <b>21</b>				E	Batch ID: 236	31		Analysis D	ate: (	02/22/2010 18:16	
Sample ID:	10021705-01ALFM	Units : µg/L		Run ID: 10	C_3_100222	4		Prep Date:	. (	02/18/2010 13:37	
Analyte		Result	PQL	SpkVa	l SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Perchlorate		27.2	:	2 25	2.677	98	80	120			
Sample Mat	rix Spike Duplicate		Type I	LFMD 7	Γest Code: <b>E</b>	PA Me	thod 314.0				
File ID: 22				E	Batch ID: <b>236</b>	31		Analysis D	ate: (	02/22/2010 18:35	
Sample ID:	10021705-01ALFMD	Units : µg/L		Run ID: I	C_3_100222	Ą		Prep Date:	: (	02/18/2010 13:37	
Analyte		Result	PQL	SpkVa	l SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Perchlorate		27.2	-	2 25	5 2.677	98	80	120 2	27.24	0.2(15)	

#### Comments:

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<b>Date:</b> 25-Feb-10	(	QC S	ummar	y Repor	t				<b>Work Orde</b> 10021705	
Method Blank File ID: 021910.B\032SMPL.D\		Type N		est Code: El		thod 200.8	Analysis D	ate: (	02/19/2010 15:43	
Sample ID: MB-23630	Units: mg/L		Run ID: IC	P/MS_1002	19A		Prep Date:	: (	02/18/2010 13:15	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Chromium (Cr)	ND	0.005	5							
<b>Laboratory Control Spike</b>		Type L	CS Te	est Code: El	PA Me	thod 200.8				
File ID: 021910.B\033_LCS.D\			Ba	atch ID: 236	30K		Analysis D	ate: (	02/19/2010 15:49	
Sample ID: LCS-23630	Units : mg/L		Run ID: IC	P/MS_1002	19A		Prep Date:	: (	02/18/2010 13:15	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	C LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Chromium (Cr)	0.0505	0.005	0.05		101	80	120			
Sample Matrix Spike		Type N	MS Te	est Code: El	PA Me	thod 200.8				
File ID: 021910.B\037SMPL.D\			Ba	atch ID: 236	30K		Analysis D	ate: (	02/19/2010 16:11	
Sample ID: 10021705-01AMS	Units : mg/L		Run ID: IC	P/MS_1002	19A		Prep Date:	: (	02/18/2010 13:15	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) RPD	)RefVa	al %RPD(Limit)	Qual
Chromium (Cr)	0.0482	0.005	0.05	0	96	80	120		1000	
Sample Matrix Spike Duplicate		Type N	ASD Te	est Code: El	PA Me	thod 200.8				
File ID: 021910.B\038SMPL.D\			Ba	atch ID: <b>236</b> 3	30K		Analysis D	ate: (	02/19/2010 16:17	
Sample ID: 10021705-01AMSD	Units : mg/L		Run ID: IC	P/MS_1002	19A		Prep Date:	: (	02/18/2010 13:15	
Analyte	Result	PQL				LCL(ME)	UCL(ME) RPD	RefVa	al %RPD(Limit)	Qual
Chromium (Cr)	0.0467	0.005		0	93	80		.04821	· · · · · · · · · · · · · · · · · · ·	

#### Comments

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



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<b>Date:</b> 26-Feb-10	(	Work Order: 10021705		
Method Blank		Type <b>MBLK</b>	60B	
File ID: 10021907.D			Batch ID: MS15W0219M	Analysis Date: 02/19/2010 10:50
Sample ID: MBLK MS15W0219M	Units : µg/L	Run	ID: MSD_15_100219A	Prep Date: 02/19/2010 10:50
Analyte	Result	PQL Sp	kVal SpkRefVal %REC LCL(ME)	UCL(ME) RPDRefVal %RPD(Limit) Qua
Dichlorodifluoromethane	ND	0.5		
Chloromethane	ND	1		
Vinyl chloride	ND	0.5		
Chloroethane	ND	0.5		
Bromomethane	ND	1		
Trichlorofluoromethane	ND	0.5		
1,1-Dichloroethene Dichloromethane	ND ND	0.5 1		
Freon-113	ND	0.5		
trans-1,2-Dichloroethene	ND	0.5		
Methyl tert-butyl ether (MTBE)	ND	0.5		
1,1-Dichloroethane	ND	0.5		
2-Butanone (MEK)	ND	10		
cis-1,2-Dichloroethene	ND	0.5		
Bromochloromethane	ND	0.5		
Chloroform	ND ND	0.5 0.5		
2,2-Dichloropropane 1,2-Dichloroethane	ND ND	0.5 0.5		
1,1,1-Trichloroethane	ND ND	0.5		
1,1-Dichloropropene	ND	0.5		
Carbon tetrachloride	ND	0.5		
Benzene	ND	0.5		
Dibromomethane	ND	0.5		
1,2-Dichloropropane	ND	0.5		
Trichloroethene	ND	0.5		
Bromodichloromethane	ND	0.5		
4-Methyl-2-pentanone (MIBK) cis-1,3-Dichloropropene	ND ND	2.5 0.5		
trans-1,3-Dichloropropene	ND ND	0.5		
1,1,2-Trichloroethane	ND	0.5		
Toluene	ND	0.5		
1,3-Dichloropropane	ND	0.5		
Dibromochloromethane	ND	0.5		
1,2-Dibromoethane (EDB)	ND	1		
Tetrachloroethene	ND	0.5		
1,1,1,2-Tetrachloroethane	ND ND	0.5		
Chlorobenzene Ethylbenzene	ND ND	0.5 0.5		
m,p-Xylene	ND	0.5		
Bromoform	ND	0.5		
Styrene	ND	0.5		
o-Xylene	ND	0.5		
1,1,2,2-Tetrachloroethane	ND	0.5		
1,2,3-Trichloropropane	ND	1		
Isopropylbenzene	ND ND	0.5		
Bromobenzene n-Propylbenzene	ND ND	0.5 0.5		
4-Chlorotoluene	ND ND	0.5 0.5		
2-Chlorotoluene	ND	0.5		
1,3,5-Trimethylbenzene	ND	0.5		
tert-Butylbenzene	ND	0.5		
1,2,4-Trimethylbenzene	ND	0.5		
sec-Butylbenzene	ND	0.5		
1,3-Dichlorobenzene		0.5		
1,4-Dichlorobenzene	ND ND	0.5		
4-Isopropyltoluene 1,2-Dichlorobenzene	ND ND	0.5 0.5		
n-Butylbenzene	ND ND	0.5 0.5		
1,2-Dibromo-3-chloropropane (DBCP)	ND ND	2.5		
1.2,4-Trichlorobenzene	ND	1		
Naphthalene	ND	1		
Hexachlorobutadiene	ND	1		
1,2,3-Trichlorobenzene	ND	1		
Surr: 1,2-Dichloroethane-d4	9.64		10 96 70	130
Surr: Toluene-d8	10		10 100 70	130



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<b>Date:</b> 26-Feb-10	(	QC Sur	nmary I	Report			Work Orde 10021705	
Surr: 4-Bromofluorobenzene	10.1		10	101	70	130		
<b>Laboratory Control Spike</b>		Type LCS	S Test	Code: EPA Meth	od SW82	260B		
File ID: <b>10021905.D</b>			Batch	ID: MS15W021	9M	Analysis Da	te: <b>02/19/2010 09:53</b>	
Sample ID: LCS MS15W0219M	Units : µg/L	R	un ID: MSD_	_15_100219A		Prep Date:	02/19/2010 09:53	
Analyte	Result	PQL			LCL(ME)	UCL(ME) RPDF	RefVal %RPD(Limit)	Qual
Dichlorodifluoromethane	7.56	1	10	76	70	130		
Chloromethane	7.18	2	10	72	70	130		
Vinyl chloride	10.4	1	10	104	70	130		
Chloroethane	8.4	1	10	84	70	130 130		L50
Bromomethane	5.93	2	10	59	70(70)	130		L30
Trichlorofluoromethane 1.1-Dichloroethene	10 10.2	1 1	10 10	100 102	70 70	130		
Dichloromethane	10.2	2	10	102	70	130		
trans-1,2-Dichloroethene	10.5	1	10	105	70	130		
Methyl tert-butyl ether (MTBE)	12.2	0.5	10	122	70	130		
1,1-Dichloroethane	9.82	1	10	98	70 70	130		
cis-1,2-Dichloroethene Bromochloromethane	11.2 11.9	1	10 10	112 119	70 70	130 130		
Chloroform	9.67	1	10	97	70 70	130		
2,2-Dichloropropane	11.1	i	10	111	70	130		
1,2-Dichloroethane	11.5	1	10	115	70	130		
1,1,1-Trichloroethane	10.9	1	10	109	70 70	130		
1,1-Dichloropropene Carbon tetrachloride	10.6 11.3	1 1	10 10	106 113	70 70	130 130		
Benzene	9.76	0.5	10	98	70	130		
Dibromomethane	12.3	1	10	123	70	130		
1,2-Dichloropropane	10.6	1	10	106	70	130		
Trichloroethene	10.9	1	10	109	70	130		
Bromodichloromethane	11.9	1	10	119	70 70	130 130		
cis-1,3-Dichloropropene trans-1,3-Dichloropropene	10.7 11.2	1	10 10	107 112	70 70	130		
1,1,2-Trichloroethane	11.8	1	10	118	70	130		
Toluene	9.94	0.5	10	99	70	130		
1,3-Dichloropropane	12.3	1	10	123	70	130		
Dibromochloromethane	12.3	1	10	123	70 70	130		
1,2-Dibromoethane (EDB) Tetrachloroethene	25.6 11	2 1	20 10	128 110	70 70	130 130		
1,1,1,2-Tetrachloroethane	11.6	i	10	116	70	130		
Chlorobenzene	10.2	1	10	102	70	130		
Ethylbenzene	9.81	0.5	10	98	70	130		
m,p-Xylene	10.5	0.5	10	105	70 70	130 130		
Bromoform Styrene	12.1 11.6	1	10 10	121 116	70 70	130		
o-Xylene	10.5	0.5	10	105	70	130		
1,1,2,2-Tetrachloroethane	10.9	1	10	109	70	130		
1,2,3-Trichloropropane	22.7	2	20	113	70	130		
Isopropylbenzene	9.76	1	10	98	70 70	130		
Bromobenzene n-Propylbenzene	10.3 9.54	1	10 10	103 95	70 70	130 130		
4-Chlorotoluene	9.94	1	10	99	70	130		
2-Chlorotoluene	9.72	1	10	97	70	130		
1,3,5-Trimethylbenzene	9.23	1	10	92	70	130		
tert-Butylbenzene	9.33	1	10	93	70 70	130 130		
1,2,4-Trimethylbenzene sec-Butylbenzene	9.45 9.61	1	10 10	95 96	70 70	130		
1,3-Dichlorobenzene	9.88	1	10	99	70	130		
1,4-Dichlorobenzene	9.23	1	10	92	70	130		
4-Isopropyltoluene	9.32	1	10	93	70	130		
1,2-Dichlorobenzene	9.38	1	10	94	70 70	130		
n-Butylbenzene 1,2-Dibromo-3-chloropropane (DBCP)	9.38 55.5	1 3	10 50	94 111	70 70	130 130		
1,2,4-Trichlorobenzene	55.5 10.8	3 2	10	108	70 70	130		
Naphthalene	12.3	2	10	123	70	130		
Hexachlorobutadiene	17.1	2	20	86	70	130		
1,2,3-Trichlorobenzene	10.9	2	10	109	70 70	130		
Surr: 1,2-Dichloroethane-d4 Surr: Toluene-d8	9.75 9.45		10 10	98 95	70 70	130 130		
Surr: 4-Bromofluorobenzene	9.45 11.1		10	95 111	70 70	130		



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Date: 26-Feb-10 QC Summary Report Work Order: 10021705

26-Feb-10	•	SC 2	ummai	y Kepoi	ι			1002170	5
Sample Matrix Spike	· · · · · · · · · · · · · · · · · · ·	Type N	IS Te	est Code: El	PA Met	hod SW82	260B		
File ID: <b>10021908.D</b>				atch ID: MS1	5W021	19M	Analysis Date	: 02/19/2010 11:12	
Sample ID: 10021705-01AMS	Units : µg/L		Run ID: MS	SD_15_1002	219A		Prep Date:	02/19/2010 11:12	
Analyte	Result	PQL				LCL(ME)	•	fVal %RPD(Limit)	Qual
Dichlorodifluoromethane	46.5	2.5		0	93	13	167		
Chloromethane	40.9	10		ŏ	82	28	145		
Vinyl chloride	55.2	2.5	50	0	110	43	134		
Chloroethane	41.1	2.5		0	82	39	154		
Bromomethane	29.1	10		0	58	19	176		
Trichlorofluoromethane 1,1-Dichloroethene	50.2	2.5		0	100 103	34 60	160 130		
Dichloromethane	51.5 50.6	2.5 10		0	103	68	130		
trans-1,2-Dichloroethene	53.4	2.5		0	107	63	130		
Methyl tert-butyl ether (MTBE)	60.2	1.3		0	120	56	141		
1,1-Dichloroethane	49.5	2.5	50	0	99	61	130		
cis-1,2-Dichloroethene	56.2	2.5		0	112	70	130		
Bromochloromethane	60.2	2.5		0	120	70	130		
Chloroform 2,2-Dichloropropane	49 55.3	2.5 2.5		0.54 0	97 111	67 30	130 152		
1,2-Dichloroethane	57.2	2.5		0	114	60	135		
1,1,1-Trichloroethane	54.1	2.5		0	108	59	137		
1,1-Dichloropropene	53.6	2.5		Ö	107	63	130		
Carbon tetrachloride	55.9	2.5	50	0	112	50	147		
Benzene	49.1	1.3		0	98	67	130		
Dibromomethane	59.1	2.5		0	118	69	133		
1,2-Dichloropropane	52.6	2.5		0	105	69 60	130		
Trichloroethene Bromodichloromethane	57 58.6	2.5 2.5		4.04 0	106 117	69 66	130 134		
cis-1,3-Dichloropropene	51.5	2.5		0	103	63	130		
trans-1,3-Dichloropropene	54.4	2.5		0	109	66	131		
1,1,2-Trichloroethane	56.2	2.5		0	112	68	130		
Toluene	48.5	1.3		0	97	66	130		
1,3-Dichloropropane	59.9	2.5		0	120	70	130		
Dibromochloromethane	59	2.5		0	118	70 70	130		
1,2-Dibromoethane (EDB) Tetrachloroethene	125 55.3	2.5		0 1.07	125 108	70 61	130 134		
1,1,1,2-Tetrachloroethane	56.3	2.5		0.07	113	70	130		
Chlorobenzene	50.1	2.5		Ö	100	70	130		
Ethylbenzene	48.3	1.3		0	97	68	130		
m,p-Xylene	51.5	1.3		0	103	64	130		
Bromoform	57.9	2.5		0	116	64	138		
Styrene	56.2	2.5		0	112	69 70	130		
o-Xylene 1,1,2,2-Tetrachloroethane	52.3 53.1	1.3 2.5		0	105 106	70 65	130 131		
1,2,3-Trichloropropane	110	10		0	110	70	130		
Isopropylbenzene	46.6	2.5		0	93	64	138		
Bromobenzene	47.7	2.5		0	95	70	130		
n-Propylbenzene	44.9	2.5		0	90	66	132		
4-Chlorotoluene	48.2	2.5		0	96	70 70	130		
2-Chlorotoluene	45.4 43.0	2.5		0	91 88	70 66	130 136		
1,3,5-Trimethylbenzene tert-Butylbenzene	43.9 44.3	2.5 2.5		0	89	65	137		
1,2,4-Trimethylbenzene	44.6	2.5		0	89	65	137		
sec-Butylbenzene	45.6	2.5		ō	91	66	134		
1,3-Dichlorobenzene	46.2	2.5		0	92	70	130		
1,4-Dichlorobenzene	44.4	2.5		0	89	70	130		
4-Isopropyltoluene	44.7	2.5		0	89	66	137		
1,2-Dichlorobenzene	43.6	2.5		0	87 90	70 60	130 142		
n-Butylbenzene 1,2-Dibromo-3-chloropropane (DBCP)	45 252	2.5 15		0	90 101	67	130		
1,2,4-Trichlorobenzene	47.9	10		0	96	61	137		
Naphthalene	53.8	10		Ö	108	40	167		
Hexachlorobutadiene	79.9	10	100	0	80	61	130		
1,2,3-Trichlorobenzene	50.5	10		0		51	144		
Surr: 1,2-Dichloroethane-d4	48.2		50		96 06	70 70	130		
Surr: Toluene-d8 Surr: 4-Bromofluorobenzene	48 52.1		50 50		96 106	70 70	130 130		
Sun. 4-Diomonuoropenzene	53.1		50		100	70	100		



Surr: 4-Bromofluorobenzene

# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order: Date: QC Summary Report 26-Feb-10 Type MS Test Code: EPA Method SW8260B Sample Matrix Spike File ID: 10021910.D Analysis Date: 02/19/2010 11:57 Batch ID: MS15W0219M Sample ID: 10021802-08AMS Prep Date: 02/19/2010 11:57 Units: µg/L Run ID: MSD\_15\_100219A SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Analyte Result **PQL** Qual Dichlorodifluoromethane 46.8 2.5 Chloromethane 41.1 Vinyl chloride 2.5 56.7 Chloroethane 42.1 2.5 Bromomethane 34.2 Trichlorofluoromethane 51.4 2.5 1.1-Dichloroethene 52.1 2.5 Dichloromethane 51.1 trans-1,2-Dichloroethene 52.9 2.5 Methyl tert-butyl ether (MTBE) 1.3 1.1-Dichloroethane 49.3 2.5 cis-1,2-Dichloroethene 56.1 2.5 Bromochloromethane 61.1 2.5 Chloroform 48.3 2.5 2,2-Dichloropropane 55.8 2.5 1,2-Dichloroethane 2.5 2.5 1,1,1-Trichloroethane 54.3 1,1-Dichloropropene 54.2 2.5 Carbon tetrachloride 2.5 Benzene 49.1 1.3 Dibromomethane 59.9 2.5 1.2-Dichloropropane 52.6 2.5 Trichloroethene 52.9 2.5 Bromodichloromethane 58.1 2.5 cis-1,3-Dichloropropene 2.5 trans-1,3-Dichloropropene 55.1 1.1.2-Trichloroethane 2.5 57.7 Toluene 1.3 1,3-Dichloropropane 58.6 2.5 Dibromochloromethane 2.5 58.7 1,2-Dibromoethane (EDB) Tetrachloroethene 53.1 2.5 1.1.1.2-Tetrachloroethane 56.7 2.5 Chlorobenzene 49.8 2.5 99.5 Ethylbenzene 47.6 1.3 m.p-Xylene 51.3 1.3 Bromoform 2.5 57.1 Styrene 55.6 2.5 o-Xylene 51.3 1.3 1,1,2,2-Tetrachloroethane 54.4 2.5 1,2,3-Trichloropropane Isopropylbenzene 48.4 2.5 Bromobenzene 49.1 2.5 n-Propylbenzene 46.8 2.5 4-Chlorotoluene 49.3 2.5 2-Chlorotoluene 47.6 2.5 1,3,5-Trimethylbenzene 45.8 2.5 tert-Butylbenzene 2.5 46.2 1.2.4-Trimethylbenzene 2.5 46.5 sec-Butylbenzene 47.9 2.5 1,3-Dichlorobenzene 2.5 48.3 1,4-Dichlorobenzene 46.6 2.5 4-isopropyltoluene 46.9 2.5 1.2-Dichlorobenzene 2.5 n-Butylbenzene 47.3 2.5 1,2-Dibromo-3-chloropropane (DBCP) 1,2,4-Trichlorobenzene 53.8 Naphthalene 62.1 Hexachlorobutadiene 88.4 1,2,3-Trichlorobenzene 56.2 Surr: 1,2-Dichloroethane-d4 47.6 Surr: Toluene-d8 46.6 



Surr: 4-Bromofluorobenzene

# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order: Date: **QC Summary Report** 10021705 26-Feb-10 Type MSD Test Code: EPA Method SW8260B Sample Matrix Spike Duplicate Analysis Date: 02/19/2010 11:34 File ID: 10021909.D Batch ID: MS15W0219M Prep Date: 02/19/2010 11:34 Sample ID: 10021705-01AMSD Units: µg/L Run ID: MSD 15 100219A SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Analyte Result **PQL** 46.45 3.2(20)90 13 167 Dichlorodifluoromethane 45 2.5 0 145 40.86 11.9(20) Chloromethane 36.3 50 73 28 10 0 43 134 55.17 3.2(20)Vinvl chloride 53.4 2.5 50 107 39 154 41.07 0.8(20)Chloroethane 41.4 50 0 83 10.7(20) 19 176 29.14 0 65 Bromomethane 32.4 10 50 34 160 50.17 2.3(20)Trichlorofluoromethane 49 2.5 50 0 98 51.52 3.9(20)1,1-Dichloroethene 49.5 2.5 50 0 99 60 130 0.1(20)Dichloromethane 0 101 68 130 50.62 50 50.6 10 trans-1,2-Dichloroethene 51.3 2.5 50 0 103 63 130 53.36 4.0(20)2.1(20) 141 60.15 56 Methyl tert-butyl ether (MTBE) 58.9 1.3 50 0 118 1.1-Dichloroethane 47.8 2.5 50 O 96 61 130 49.48 3.6(20)5.6(20)cis-1,2-Dichloroethene 106 70 130 56.19 53.1 2.5 50 70 130 60.22 3.2(20)Bromochloromethane 0 58.3 2.5 50 117 130 48.95 1.5(20) Chloroform 48.2 2.5 50 0.54 95 67 2.5 55.27 2.1(20)2,2-Dichloropropane 54.1 50 0 108 30 152 3.3(20)60 135 57.18 1,2-Dichloroethane 55.4 2.5 50 n 111 1.5(20)59 137 54.07 1,1,1-Trichloroethane 53.3 2.5 50 107 3.1(20) 130 53.6 1,1-Dichloropropene 52 2.5 50 0 104 63 Carbon tetrachloride 2.7(20)2.5 50 0 109 50 147 55.91 54.4 50 0 95 67 130 49.09 2.8(20)Benzene 47.7 1.3 133 59.06 2.4(20)Dibromomethane 69 2.5 50 0 115 57.7 1,2-Dichloropropane 51 2.5 50 0 102 69 130 52.56 3.0(20)57.03 1.3(20)69 130 Trichloroethene 56.3 2.5 50 4.04 105 115 66 134 58.64 2.0(20)Bromodichloromethane 2.5 50 n 57.5 130 51.53 1.5(20)cis-1,3-Dichloropropene 50.8 2.5 50 0 102 63 66 131 54.42 1.2(20)trans-1,3-Dichloropropene 53.8 2.5 50 0 108 2.0(20)1.1.2-Trichloroethane 55.1 2.5 50 0 110 68 130 56.2 0.6(20)66 130 48.46 Toluene 48.2 1.3 50 0 96 59.87 0.3(20)0 119 70 130 1,3-Dichloropropane 59.7 2.5 50 Dibromochloromethane 2.5 50 0 117 70 130 58.98 1.1(20)58 4 130 124.8 0.5(20)1.2-Dibromoethane (EDB) 100 0 124 70 124 1.6(20) 61 134 55.25 2.5 50 1.07 107 Tetrachloroethene 54.4 70 130 56.28 0.1(20)1,1,1,2-Tetrachloroethane 56.4 2.5 50 0 113 130 1.1(20)70 50.13 Chlorobenzene 49.6 2.5 50 0 99 Ethylbenzene 48.25 1.4(20)50 0 95 68 130 47.6 1.3 0.5(20)51.47 m,p-Xylene 51.7 1.3 50 0 103 64 130 64 138 57.91 1.2(20)Bromoform 2.5 50 0 114 57.2 1.1(20)Styrene 55.6 2.5 50 0 111 69 130 56.23 0.5(20)52.26 70 130 o-Xvlene 52 1.3 50 0 104 2.6(20)1,1,2,2-Tetrachloroethane 2.5 50 n 109 65 131 53.07 54.4 109 70 130 110.4 1.4(20)1,2,3-Trichloropropane 109 10 100 0 2.5 138 46.6 1.6(20)Isopropylbenzene 47.4 50 0 95 64 47.65 1.2(20)48.2 0 96 70 130 Bromobenzene 2.5 50 44.85 1.0(20)n-Propylbenzene 2.5 91 66 132 45.3 50 0 0 97 70 130 48.16 1.0(20)4-Chlorotoluene 48.6 2.5 50 70 130 45.41 3.1(20)2-Chlorotoluene 46.8 2.5 50 0 94 43.88 2.1(20) 1,3,5-Trimethylbenzene 44.8 2.5 50 0 90 66 136 44.31 2.3(20)0 91 65 137 tert-Butylbenzene 2.5 50 45.4 1,2,4-Trimethylbenzene 45.7 2.5 50 0 91 65 137 44.57 2.4(20)66 45.64 2.9(20)0 94 134 sec-Butylbenzene 50 47 2.5 1,3-Dichlorobenzene 47.3 2.5 50 0 95 70 130 46.23 2.2(20)70 130 44 4 2.1(20)91 1,4-Dichlorobenzene 45.3 2.5 50 0 0 91 66 137 44.71 2.2(20)4-Isopropyltoluene 45.7 2.5 50 4.1(20)1,2-Dichlorobenzene 91 70 130 43.58 45.4 2.5 50 0 60 142 44.99 1.5(20)0 91 n-Butylbenzene 45.7 2.5 50 130 252.1 5.0(20)1,2-Dibromo-3-chloropropane (DBCP) 15 250 0 106 67 265 8.0(20) 47.92 1,2,4-Trichlorobenzene 51.9 10 50 0 104 61 137 10.6(20) 120 167 53.75 Naphthalene 59.8 50 0 40 10 61 130 79.89 6.2(20)Hexachlorobutadiene 10 100 85 85 50.49 1,2,3-Trichlorobenzene 54.8 10 50 110 51 144 8.2(20)130 Surr: 1.2-Dichloroethane-d4 50 93 70 46.6 Surr: Toluene-d8 50 96 70 130 47.9

50

53

70

106

130



Date:

## Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Work Order:

OC Summary Report 10021705 26-Feb-10 Type MSD Test Code: EPA Method SW8260B Sample Matrix Spike Duplicate Analysis Date: 02/19/2010 12:19 File ID: 10021911.D Batch ID: MS15W0219M Prep Date: 02/19/2010 12:19 Sample ID: 10021802-08AMSD Units: µg/L Run ID: MSD 15 100219A SpkVal SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual Analyte Result PQL Dichlorodifluoromethane 91 13 167 46.75 3.1(20) 45.3 2.5 50 Chloromethane 10 50 0 82 28 145 41.09 0.0(20)41.1 56.66 0.5(20)Vinvl chloride 56.4 2.5 50 0 113 43 134 154 1.3(20)Chloroethane 42.7 2.5 50 0 85 39 42.13 176 34.17 0.5(20)Bromomethane 34.3 10 50 0 69 19 Trichlorofluoromethane 50 2.5 50 0 100 34 160 51.43 2.8(20)60 130 52.05 1.3(20)1.1-Dichloroethene 50 0 103 51.4 2.5 Dichloromethane 50 68 130 51.05 0.7(20)50.7 10 0 101 130 1.0(20)trans-1,2-Dichloroethene 2.5 50 63 52.87 52.4 0 105 1.3(20)Methyl tert-butyl ether (MTBE) 61.8 1.3 50 0 124 56 141 61.01 1.3(20)1.1-Dichloroethane 48.6 2.5 50 97 61 130 49.25 56.07 0.4(20)55.9 130 cis-1,2-Dichloroethene 50 0 112 70 2.5 130 61.06 5.4(20) Bromochloromethane 57.9 2.5 50 0 116 70 1.0(20) Chloroform 47.9 2.5 50 0 96 67 130 48.34 2.2-Dichloropropane 2.5 50 108 30 152 55.79 3.0(20)54.2 0 1,2-Dichloroethane 60 135 55.96 1.0(20)56.5 2.5 50 0 113 1,1,1-Trichloroethane 59 137 54.31 2.0(20)53.2 2.5 50 0 106 2.6(20)1.1-Dichloropropene 2.5 50 0 106 63 130 54.16 52.8 1.5(20)Carbon tetrachloride 50 110 50 147 55.99 55.2 2.5 0 1.2(20) 67 130 49.12 Benzene 48.5 1.3 50 0 97 59.93 0.2(20)Dibromomethane 59.8 2.5 50 0 120 69 133 1,2-Dichloropropane 52.7 2.5 50 105 69 130 52.56 0.3(20)69 130 52.91 0.8(20)Trichloroethene 50 105 2.5 0 52.5 Bromodichloromethane 58.2 2.5 50 0 116 66 134 58.14 0.1(20)130 52.01 1.1(20) cis-1,3-Dichloropropene 51.4 2.5 50 0 103 63 trans-1.3-Dichloropropene 108 66 131 55.13 2.1(20)54 2.5 50 0 1.4(20) 1,1,2-Trichloroethane 68 130 57.71 56.9 2.5 50 114 66 130 47.96 0.2(20)Toluene 50 0 96 47.9 1.3 1,3-Dichloropropane 59.4 2.5 50 0 119 70 130 58.61 1.4(20)0.1(20)130 58.65 Dibromochloromethane 58.6 2.5 50 0 117 70 0.1(20)70 130 124 1,2-Dibromoethane (EDB) 124 5 100 n 124 134 53.11 0.3(20)Tetrachloroethene 53.3 2.5 50 0 107 61 1,1,1,2-Tetrachloroethane 55.7 2.5 50 0 111 70 130 56.66 1.6(20)1.2(20) Chlorobenzene 70 130 49.76 49.2 2.5 50 0 98 Ethylbenzene 50 95 68 130 47.58 0.5(20)47.3 1.3 51.33 1.9(20) 64 130 m,p-Xylene 50.4 1.3 50 0 101 Bromoform 50 0 115 64 138 57.1 1.0(20)577 2.5 55.55 1.0(20)Styrene 56.1 2.5 50 0 112 69 130 130 51.33 0.0(20)50 70 o-Xylene 0 103 51.3 1.3 1,1,2,2-Tetrachloroethane 65 131 54.37 0.2(20)54.5 2.5 50 0 109 130 108.4 0.5(20)1,2,3-Trichloropropane 109 10 100 0 109 70 0.6(20)Isopropylbenzene 48.2 2.5 50 0 96 64 138 48.43 0.0(20)Bromobenzene 49.1 2.5 50 98 70 130 49.1 132 46.76 1.0(20)n-Propylbenzene 46.3 2.5 50 O 93 66 130 49.25 0.3(20)4-Chlorotoluene 49.1 2.5 50 0 98 70 70 130 47.56 0.6(20)2-Chlorotoluene 47.3 2.5 50 0 95 1.3(20) 1,3,5-Trimethylbenzene 90 66 136 45.82 45.2 2.5 50 n tert-Butylbenzene 2.5 50 92 65 137 46.21 0.1(20) 46.2 0 65 137 46.51 0.6(20)1,2,4-Trimethylbenzene 46.2 2.5 50 0 92 134 1.0(20)sec-Butylbenzene 2.5 50 0 95 66 47.86 47.4 0.3(20)1,3-Dichlorobenzene 48.2 2.5 50 0 96 70 130 48.31 1.4-Dichlorobenzene 2.5 50 92 70 130 46.64 1.4(20)O 46 4-Isopropyltoluene 46.5 2.5 50 0 93 66 137 46.89 0.9(20)70 130 46.01 0.6(20)1.2-Dichlorobenzene 46.3 2.5 50 0 93 n-Butylbenzene 46.8 2.5 50 n 94 60 142 47.3 1.1(20)1,2-Dibromo-3-chloropropane (DBCP) 250 111 67 130 276.2 0.1(20)277 15 0 0.1(20) 1.2.4-Trichlorobenzene 108 137 53.77 10 50 61 53.8 0 Naphthalene 167 0.5(20)61.7 10 50 0 123 40 62.05 Hexachlorobutadiene 130 1.8(20) 86.9 10 100 0 87 61 88.43 1.2.3-Trichlorobenzene 144 56.15 0.3(20)56.3 10 50 113 51 Surr: 1,2-Dichloroethane-d4 46.7 93 70 130 50 Surr: Toluene-d8 95 70 130 47.4 50 Surr: 4-Bromofluorobenzene 55.3 50 111 70 130



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**Date:** 26-Feb-10

#### QC Summary Report

Work Order: 10021705

#### **Comments:**

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.

# Billing Information:

# CHAIN-OF-CUSTODY RECORD

# Alpha Analytical, Inc.

255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778 TEL: (775) 355-1044 FAX: (775) 355-0406

Report Attention Shane Walton Phone Number (614) 424-4117 (818) 393-2808 x connerd@battelle.org waltons@battelle.org EMail Address

**Battelle Memorial Institute** 

Client's COC #: 024224, 24128

Betsy Cutie

(614) 424-4899 x

cutiee@batelle.org

PO: 218013

San Diego, CA 92110

Suite C-205 3990 Old Town Ave

QC Level: DS4

Page: 1 of 1

WorkOrder: BMIS10021705

Report Due By: 5:00 PM On: 03-Mar-2010

EDD Required: Yes

Sampled by: David Loera Cooler Temp

Samples Received 17-Feb-2010

= DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates Job : G005862/JPL Groundwater Monitoring 17-Feb-2010 Date Printed

Sample ID BMI10021705-09A TB-11-02/16/10 BMI10021705-08A BMI10021705-07A DUPE-5-1Q10 BMI10021705-06A BMI10021705-05A MW-24-2 BMI10021705-04A MW-24-3 BMI10021705-03A BMI10021705-02A MW-13 BMI10021705-01A MW-24-1 EB-11-02/16/10 MW-24-4 MW-6 Sample ID Client ğ å å Ś å å å Š Š Matrix Date 02/16/10 00:00 02/16/10 00:00 02/16/10 09:32 02/16/10 08:53 02/16/10 08:30 02/16/10 08:06 02/16/10 12:50 Collection No. of Bottles 02/15/10 02/16/10 09:25 Alpha Sub S 0 G S S G S N 0 0 0 0 0 0 0 0 0 ΤAΤ 6 6 6 6 6 6 5 5 6 NO2, NO3, Perchlorate SO4, PO4, Cl; NO2, NO3, Perchlorate SO4, PO4, Cl NO2, NO3, Perchlorate SO4, PO4, Cl 300\_0\_W 314\_W METALS\_D VOC\_TIC\_ VOC\_W Perchlorate Perchlorate Perchlorate Perchlorate Ç ς, ť Ü Ω Ç Ü Ç VOC by 524 VOC by 524
Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria VOC by 524 VOC by 524 Criteria Criteria Requested Tests Reno Trip Blank 8/25/09 Sample Remarks MS/MSD MS/MSD

Comments:

Security seals intact. Frozen ice. Temp Blank #8485 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by:	
Chapter (Ideax	Signature
Elizabeth Hydrox	Print Name
Alpha Analytical, Inc.	Company Date/Time
2.17.10 1108	Date/Time

Matrix Type: AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report. NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Name Jecry Jomphins	Alpha A 255 Glenda	21 .	Samples Collected From Which State? 024224
te, Zip umbe	(3)	Phone (775) 355-1044  Fax (775) 355-0406	Analyses Required
Client Name Cavid Conner	218013	100 Haps COD # 400 F	Required (
City, State, Zip	batte	534	_
Matrice Complete by	6-7311	14-428-9641 12	(EDD) EDF? YES NO
Sampled by Loera	Heport Attention And Comer	Total and type of containers	Global ID #
Below Lab ID Number (Use Only)	ple De	Filtered ** See below	US Y / REMARKS
10 50/1500/1Mg BA 5/1/05 01	MW-6	5 * *	*
THIO PISTIO ARE	MW-6- MS/MSD	50 × × ×	MS/msD
1	MW-13	() ×	*
18		アメメ	X X
ADDITIONAL INSTRUCTIONS:			
Something	Print Name	Company	Doto
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Received by	MARCO MENDON	1 NSI CAST	\ <u>o</u>
Relinquished by The Control of the C	MANG READODA	1881645	1/2 ,
Received by	Anthony Start	ACAHA	2/16/10 /400
To A	tacky stall	ARKA	
a buth (	Flizzon HdCox		2-17/0
"Key: AQ - Aqueous V SO - Soil WA - Waste	e OT - Other AR - Air **: L-Liter	lter V-Voa S-Soil Jar VO-Orbo	T-Tedlar R-Rrass P-Plastic OT-Other

of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis

# City, State, Zip <u>Coといからい</u> Name GELALD TOMPKINS Address 505 Billing Information: 16126 Fax X£3

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rks, Nevada 89431-5778 ine (775) 355-1044 Glendale Avenue, Suite 21 ha Analytical, Inc. (775) 355-0406

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of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

\*Key: AQ - Aqueous

SO - Soil

WA - Waste

OT - Other

AR - Air

\*\*: L-Liter

V-Voa

S-Soil Jar

O-Orbo

T-Tedlar

B-Brass

P-Plastic

OT-Other

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Received by Relinquished by

Received by

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:** 03-Mar-10

**David Conner** 

Battelle Memorial Institute

3990 Old Town Ave

San Diego, CA 92110 (818) 393-2808 Suite C-205

**CASE NARRATIVE** 

Job:

G005862/JPL Groundwater Monitoring

Work Order:

BMI10021802

**Cooler Temp:** 

4°C

Alpha's Sample ID	Client's Sample ID	Matrix	
10021802-01A	MW-8	Aqueous	
10021802-02A	MW-10	Aqueous	
10021802-03A	MW-26-2	Aqueous	
10021802-04A	MW-26-1	Aqueous	
10021802-05A	MW-25-5	Aqueous	
10021802-06A	MW-25-4	Aqueous	
10021802-07A	MW-25-3	Aqueous	
10021802-08A	MW-25-2	Aqueous	
10021802-09A	MW-25-1	Aqueous	
10021802-10A	EB-12-2/17/10	Aqueous	
10021802-11A	TB-12-2/17/10	Aqueous	

#### **Manually Integrated Analytes**

Alpha's Sample ID	Test Reference	Analyte	
10021802-01A	EPA Method 314.0	Perchlorate	
10021802-02A	EPA Method 314.0	Perchlorate	
10021802-04A	EPA Method 314.0	Perchlorate	
10021802-06A	EPA Method 314.0	Perchlorate	
10021802-07A	EPA Method 314.0	Perchlorate	
10021802-08A	EPA Method 314.0	Perchlorate	
10021802-09A	EPA Method 314.0	Perchlorate	

Enclosed please find the analytical results of the samples received by Alpha Analytical, Inc. under the above mentioned Work Order/Chain-of-Custody.

Alpha Analytical, Inc. has a formal Quality Assurance/Quality Control program, which is designed to meet or exceed the EPA requirements. All relevant QC met quality assurance objectives for this project unless otherwise stated in the footnotes.

If you have any questions with regards to this report, please contact Randy Gardner, Project Manager, at (800) 283-1183.

Roger Scholl

Kandy Saulman

Walter Hirkon



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#### ANALYTICAL REPORT

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner

Phone: (818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/18/10

Job:

G005862/JPL Groundwater Monitoring

Anions by IC EPA Method 300.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-8 Lab ID: BMI10021802-01A Date Sampled 02/17/10 12:08		43 ND 3.0 ND 69	0.50 mg/L 0.25 mg/L 0.25 mg/L 0.50 mg/L 0.50 mg/L	02/18/10 11:16 02/18/10 11:16 02/18/10 11:16	02/18/10 13:05 02/18/10 13:05 02/18/10 13:05 02/18/10 13:05 02/18/10 13:05

ND = Not Detected

Roger Scholl Kundy Saulu

Walter Herekow

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110

Attn:

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Date Received: 02/18/10

Job:

G005862/JPL Groundwater Monitoring

#### Perchlorate by Ion Chromatography EPA Method 314.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-8  Lab ID: BMI10021802-01A  Date Sampled 02/17/10 12:08	Perchlorate	194	20.0 μg/L	02/18/10 13:37	02/22/10 21:21
Client ID: MW-10  Lab ID: BMI10021802-02A  Date Sampled 02/17/10 14:20	Perchlorate	2.52	L.00 μg/L	02/18/10 13:37	02/22/10 21:39
Client ID: MW-26-2 Lab ID: BMI10021802-03A Date Sampled 02/17/10 11:37	Perchlorate	ND	1.00 μg/L	02/18/10 13:37	02/22/10 21:57
Client ID: MW-26-1 Lab ID: BMI10021802-04A Date Sampled 02/17/10 12:03	Perchlorate	2.25	1.00 μg/L	02/18/10 13:37	02/22/10 22:16
Client ID: MW-25-5 Lab ID: BMI10021802-05A Date Sampled 02/17/10 08:38	Perchlorate	ND	1.00 μg/L	02/18/10 13:37	02/24/10 14:40
Client ID: MW-25-4 Lab ID: BMI10021802-06A Date Sampled 02/17/10 09:05	Perchlorate	7.32	1.00 μg/L	02/18/10 13:37	02/22/10 22:53
Client ID: MW-25-3 Lab ID: BMI10021802-07A Date Sampled 02/17/10 09:30	Perchlorate	9.77	1.00 μg/L	02/18/10 13:37	02/22/10 23:11
Client ID: MW-25-2 Lab ID: BMI10021802-08A Date Sampled 02/17/10 10:05	Perchlorate	13.7	1.00 μg/L	02/18/10 13:37	02/22/10 23:29
Client ID: MW-25-1 Lab ID: BMI10021802-09A Date Sampled 02/17/10 10:32	Perchlorate	10.0	1.00 µg/L	02/18/10 13:37	02/22/10 23:48
Client ID: <b>EB-12-2/17/10</b> Lab ID: BMI10021802-10A Date Sampled 02/17/10 10:23	Perchlorate	ND	1.00 μg/L	02/18/10 13:37	02/23/10 00:06



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ND = Not Detected

Roger Scholl Kandy Saulman Walter Atrichner
Roger L. Scholl, Ph.D., Laboratory Director · · Randy Gardner, Laboratory Manager · · Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave San Diego, CA 92110 Attn: David Conner

Phone: (818) 393-2808 Fax: (614) 458-6641

Date Received: 02/18/10

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS EPA Method 200.8

		EPA Method 200.8			
	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-8</b> Lab ID: BMI10021802-01A Date Sampled 02/17/10 12:08	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 17:08
Client ID: <b>MW-10</b> Lab ID: BMI10021802-02A Date Sampled 02/17/10 14:20	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 17:29
Client ID: <b>MW-26-2</b> Lab ID: BMI10021802-03A Date Sampled 02/17/10 11:37	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 17:35
Client ID: MW-26-1 Lab ID: BMI10021802-04A Date Sampled 02/17/10 12:03	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 17:41
Client ID: MW-25-5 Lab ID: BMI10021802-05A Date Sampled 02/17/10 08:38	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 17:46
Client ID: <b>MW-25-4</b> Lab ID: BMI10021802-06A Date Sampled 02/17/10 09:05	Chromium (Cr)	ND	0.0050 mg/L	.02/18/10 13:15	02/19/10 17:52
Client ID: MW-25-3 Lab ID: BMI10021802-07A Date Sampled 02/17/10 09:30	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 17:58
Client ID: <b>MW-25-2</b> Lab ID: BMI10021802-08A Date Sampled 02/17/10 10:05	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 18:03
Client ID: <b>MW-25-1</b> Lab ID: BMI10021802-09A Date Sampled 02/17/10 10:32	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 18:09
Client ID: <b>EB-12-2/17/10</b> Lab ID: BMI10021802-10A Date Sampled 02/17/10 10:23	Chromium (Cr)	ND	0.0050 mg/L	02/18/10 13:15	02/19/10 18:14



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ND = Not Detected

Roger Scholl Kandy Saulner Walter Hinchman, Quality Assurance Officer

Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise. Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

Job:

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Attn: David Conner Phone: (818) 393-2808

Fax:

(614) 458-6641

Tentatively Identified Compounds - Volatile Organics by GC/MS

			Estimated		
	Parameter	Estimated	Reporting	Date	Date
		Concentration	Limit	Extracted	Analyzed
Client ID: MW-8 Lab ID: BMI10021802-01A Date Received: 02/18/10 Date Sampled: 02/17/10 12:08	*** None Found ***	ND	2.0 μg/L	02/19/10 16:46	02/19/10 16:46
Client ID: MW-10  Lab ID: BMI10021802-02A  Date Received: 02/18/10  Date Sampled: 02/17/10 14:20	*** None Found ***	ND	2.0 μg/L	02/19/10 17:08	02/19/10 17:08
Client ID: MW-26-2 Lab ID: BMI10021802-03 A Date Received: 02/18/10 Date Sampled: 02/17/10 11:37	*** None Found ***	ND	2.0 μg/L	02/19/10 17:30	02/19/10 17:30
Client ID: MW-26-1 Lab ID: BMI10021802-04A Date Received: 02/18/10 Date Sampled: 02/17/10 12:03	*** None Found ***	ND	2.0 μg/L	02/19/10 17:53	02/19/10 17:53
Client ID: MW-25-5 Lab ID: BMI10021802-05A Date Received: 02/18/10 Date Sampled: 02/17/10 08:38	Sulfur dioxide	15	2.0 μg/L	02/19/10 18:15	02/19/10 18:15
Client ID: MW-25-4 Lab ID: BMI10021802-06A Date Received: 02/18/10 Date Sampled: 02/17/10 09:05	*** None Found ***	ND	2.0 μg/L	02/19/10 18:37	02/19/10 18:37
Client ID: MW-25-3 Lab ID: BMI10021802-07A Date Received: 02/18/10 Date Sampled: 02/17/10 09:30	*** None Found ***	ND	2.0 μg/L	02/19/10 18:59	02/19/10 18:59
Client ID: MW-25-2 Lab ID: BMI10021802-08A Date Received: 02/18/10 Date Sampled: 02/17/10 10:05	*** None Found ***	ND	2.0 μg/L	02/19/10 19:22	02/19/10 19:22
Client ID: MW-25-1 Lab ID: BMI10021802-09A Date Received: 02/18/10 Date Sampled: 02/17/10 10:32	*** None Found ***	ND	2.0 μg/L	02/19/10 19:44	02/19/10 19:44



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Client ID:

EB-12-2/17/10

Lab ID:

BMI10021802-10A

\* \* \* None Found \* \* \*

ND

 $2.0~\mu\text{g/L}$ 

02/19/10 14:10 02/19/10 14:10

Date Received: 02/18/10

Date Sampled: 02/17/10 10:23

Client ID:

TB-12-2/17/10

Lab ID :

BMI10021802-11A

4 ,

\* \* \* None Found \* \* \*

ND

2.0 μg/L

02/19/10 13:48 02/19/10 13:48

Date Received: 02/18/10

Date Sampled: 02/17/10 00:00

ND = Not Detected

Roger Scholl

Kandy Sadner

Walter Airihur

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

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3/3/10

Report Date



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-01A

Client I.D. Number: MW-8

**David Conner** Attn: Phone: (818) 393-2808 Fax:

(614) 458-6641

Sampled: 02/17/10 12:08

Received: 02/18/10

Extracted: 02/19/10 16:46 Analyzed: 02/19/10 16:46

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	0.89		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	: ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	1.5		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI		2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	1.4		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

0.81

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

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1.0

μg/L

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3/3/10

**Report Date** 



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

San Diego, CA 92110 Job: G005862/JPL

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-02A

Client I.D. Number: MW-10

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/17/10 14:20

Received: 02/18/10

Extracted: 02/19/10 17:08 Analyzed: 02/19/10 17:08

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	: ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q 1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L.
7	1,1-Dichloroethene	ND	0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochioromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	0.58	0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	µg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND	0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	5.1	0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND	0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	103	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	95	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND	0.50	ua/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

34 1,2-Dibromoethane (EDB)

oger Scholl Kandy Sulma

Walter Hinkon

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

µg/L

μg/L

μg/L

3/3/10

Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### ANALYTICAL REPORT

**Battelle Memorial Institute** 3990 Old Town Ave

Client I.D. Number: MW-26-2

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-03A

Attn:

David Conner (818) 393-2808

Phone:

Fax:

(614) 458-6641

Sampled: 02/17/10 11:37

Received: 02/18/10 Extracted: 02/19/10 17:30

Analyzed: 02/19/10 17:30

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Reporting	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND	0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND	1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND	0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND	0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND (	2 1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND	0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND	0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND	1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND	0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND	0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND	0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND	0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND	10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND	0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND	0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND	0.50	µg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND	0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND	0.50	μg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND	0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND	0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND	0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND	0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND	0.50	µg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND	0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND	0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND	0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND	0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	μg/L	65	Surr: Toluene-d8	96	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	: ND	0.50	μg/L					
33	Dibromochloromethane	ND	0.50	μg/L					
0.4	4.0 D) ( (EDD)	i							

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/3/10

Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-04A Client I.D. Number: MW-26-1

**David Conner** Attn: Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/17/10 12:03

Received: 02/18/10

Extracted: 02/19/10 17:53 Analyzed: 02/19/10 17:53

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	: ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L.
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	. 56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	· ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

0.71

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

0.50

1.0

µg/L

µg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/3/10

Report Date



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

Job: G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-05A

Client I.D. Number: MW-25-5

Attn: David Conner Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/17/10 08:38

Received: 02/18/10

Extracted: 02/19/10 18:15 Analyzed: 02/19/10 18:15

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	. ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	97	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	98	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl Kandy Saulmer

Walter Stinkner

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

0.50

1.0

0.50

μg/L

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/3/10

**Report Date** 



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#### ANALYTICAL REPORT

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-06A

Client I.D. Number: MW-25-4

David Conner Attn: Phone: (818) 393-2808

Fax: (614) 458-6641

Sampled: 02/17/10 09:05

Received: 02/18/10

Extracted: 02/19/10 18:37 Analyzed: 02/19/10 18:37

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	eporting I	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L.	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

0.50

μg/L

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

Report Date



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#### **ANALYTICAL REPORT**

Battelle Memorial Institute

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring Job:

Alpha Analytical Number: BMI10021802-07A

Client I.D. Number: MW-25-3

Attn: David Conner

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/17/10 09:30

Received: 02/18/10

Extracted: 02/19/10 18:59 Analyzed: 02/19/10 18:59

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting l	_imit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1.1.1.2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND -	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	0.51		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	µg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

33 Dibromochloromethane

34 1,2-Dibromoethane (EDB)

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/3/10

Report Date



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

Battelle Memorial Institute 3990 Old Town Ave

Client I.D. Number: MW-25-2

San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-08A

Attn:

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/17/10 10:05

Received: 02/18/10

Extracted: 02/19/10 19:22 Analyzed: 02/19/10 19:22

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	porting l	Limit		Compound	Concentration	Reporting L	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1.1.1.2-Tetrachloroethane	. ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xvlene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L.
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochioromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	µg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND ·		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	98	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	101	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L			•	, ,	
33	Dibromochloromethane	ND		0.50	μg/L					
24	1.2 Dibromoothens (CDD)	410			. •					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger Scholl

Kandy Saulmer

Walter Airihour

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

μg/L

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/3/10

**Report Date** 



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-09A

Client I.D. Number: MW-25-1

Attn: **David Conner** 

Phone: (818) 393-2808

Fax:

(614) 458-6641

Sampled: 02/17/10 10:32

Received: 02/18/10

Extracted: 02/19/10 19:44 Analyzed: 02/19/10 19:44

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	R	eporting I	Limit		Compound	Concentration	Reporting Li	mit
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	µg/L
4	Chloroethane	ND		0.50	μg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	μg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	0.60		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	.ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBC	P) ND	2.5	μg/L
25	Trichloroethene	3.1		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	99	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	102	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

1.0

0.50

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/3/10

**Report Date** 



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#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave San Diego, CA 92110

Job:

G005862/JPL Groundwater Monitoring

Attn:

David Conner

Phone:

(818) 393-2808

Fax:

(614) 458-6641

Alpha Analytical Number: BMI10021802-10A

Client I.D. Number: EB-12-2/17/10

Sampled: 02/17/10 10:23

Received: 02/18/10

Extracted: 02/19/10 14:10 Analyzed: 02/19/10 14:10

#### Volatile Organics by GC/MS EPA Method SW8260B

	Compound	Concentration	Re	porting l	Limit		Compound	Concentration	Reporting Li	imit
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	μg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	ug/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	μg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	,	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	μg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	μg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (DBC)	P) ND	2.5	μg/L
25	Trichloroethene	ND		0.50	μg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	100	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	μg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	µg/L					
33	Dibromochloromethane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

1.0

0.50

μg/L.

μg/L

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

3/3/10

**Report Date** 



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

#### **ANALYTICAL REPORT**

**Battelle Memorial Institute** 

3990 Old Town Ave

San Diego, CA 92110

G005862/JPL Groundwater Monitoring

Alpha Analytical Number: BMI10021802-11A

Client I.D. Number: TB-12-2/17/10

Attn: David Conner

Phone: (818) 393-2808

(614) 458-6641 Fax:

Sampled: 02/17/10 00:00

Received: 02/18/10

Extracted: 02/19/10 13:48 Analyzed: 02/19/10 13:48

#### Volatile Organics by GC/MS EPA Method SW8260B

Compound (		Concentration	Reporting Limit			Compound	Concentration	Reporting Limit		
1	Dichlorodifluoromethane	ND		0.50	μg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	μg/L	37	Chlorobenzene	ND	0.50	μg/L
3	Vinyl chloride	ND		0.50	μg/L	38	Ethylbenzene	ND	0.50	μg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	μg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	μg/L
6	Trichlorofluoromethane	ND		0.50	μg/L	41	Styrene	ND	0.50	μg/L
7	1,1-Dichloroethene	ND		0.50	μg/L	42	o-Xylene	ND	0.50	μg/L
8	Dichloromethane	ND		1.0	μg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	μg/L
9	Freon-113	ND		0.50	μg/L	44	1,2,3-Trichloropropane	ND	1.0	μg/L
10	trans-1,2-Dichloroethene	ND		0.50	μg/L	45	Isopropylbenzene	ND	0.50	μg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	μg/L
12	1,1-Dichloroethane	ND		0.50	μg/L	47	n-Propylbenzene	ND	0.50	μg/L
13	2-Butanone (MEK)	ND		10	μg/L	48	4-Chlorotoluene	ND	0.50	μg/L
14	cis-1,2-Dichloroethene	ND		0.50	μg/L	49	2-Chlorotoluene	ND	0.50	μg/L
15	Bromochloromethane	ND		0.50	μg/L	50	1,3,5-Trimethylbenzene	ND	0.50	μg/L
16	Chloroform	ND		0.50	μg/L	51	tert-Butylbenzene	ND	0.50	μg/L
17	2,2-Dichloropropane	ND		0.50	μg/L	52	1,2,4-Trimethylbenzene	ND	0.50	μg/L
18	1,2-Dichloroethane	ND		0.50	μg/L	53	sec-Butylbenzene	ND	0.50	μg/L
19	1,1,1-Trichloroethane	ND		0.50	μg/L	54	1,3-Dichlorobenzene	ND	0.50	μg/L
20	1,1-Dichloropropene	ND		0.50	μg/L	55	1,4-Dichlorobenzene	ND	0.50	μg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	μg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichtorobenzene	ND	0.50	μg/L
23	Dibromomethane	ND		0.50	μg/L	58	n-Butylbenzene	ND	0.50	μg/L
24	1,2-Dichloropropane	ND		0.50	μg/L	59	1,2-Dibromo-3-chloropropane (DBCI	P) ND	2.5	µg/L
25	Trichloroethene	ND		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	μg/L
26	Bromodichloromethane	ND		0.50	μg/L	61	Naphthalene	ND	1.0	μg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	μg/L	62	Hexachlorobutadiene	ND	1.0	μg/L
28	cis-1,3-Dichloropropene	ND		0.50	μg/L	63	1,2,3-Trichlorobenzene	ND	1.0	μg/L
29	trans-1,3-Dichloropropene	ND		0.50	μg/L	64	Surr: 1,2-Dichloroethane-d4	102	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	μg/L	66	Surr: 4-Bromofluorobenzene	100	(70-130)	%REC
32	1,3-Dichloropropane	ND		0.50	μg/L					

Data flags are DOD specified with criteria that may differ from EPA or inhouse statistical criteria.

ND

ND

ND

Q = One or more quality control criteria failed.

ND = Not Detected

33 Dibromochloromethane

35 Tetrachloroethene

34 1,2-Dibromoethane (EDB)

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (310) 803-7761 / info@alpha-analytical.com

μg/L

μg/L

1.0

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

Alpha Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

**Report Date** 



255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778 (775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## **VOC Sample Preservation Report**

Work Order: BMI10021802

Job:

G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	рН	
10021802-01A	MW-8	Aqueous	2	
10021802-02A	MW-10	Aqueous	2	
10021802-03A	MW-26-2	Aqueous	2	
10021802-04A	MW-26-1	Aqueous	2	
10021802-05A	MW-25-5	Aqueous	2	
10021802-06A	MW-25-4	Aqueous	2	
10021802-07A	MW-25-3	Aqueous	2	
10021802-08A	MW-25-2	Aqueous	2	
10021802-09A	MW-25-1	Aqueous	2	
10021802-10A	EB-12-2/17/10	Aqueous	2	
10021802-11A	TB-12-2/17/10	Aqueous	2	

3/3/10



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<b>Date:</b> 03-Mar-10	QC Summary Report							<b>Work Order:</b> 10021802		
Method Blank		Type: M	BLK T	est Code: Ef	A Met	hod 300.0				
File ID: <b>20</b>			Ва	atch ID: <b>236</b> 2	25		Analysi	is Date:	02/18/2010 12:10	
Sample ID: MB-23625	Units : mg/L		Run ID: IC	_1_100218#			Prep D	ate:	02/18/2010 11:16	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) F	RPDRefV	al %RPD(Limit)	Qual
Chloride	ND	0.5								
Nitrite (NO2) - N	ND	0.25								
Nitrate (NO3) - N	ND	0.25								
Phosphate, ortho - P Sulfate (SO4)	ND ND	0.5 0.5								
Laboratory Fortified Blank		Type: LI	FB Te	est Code: El	A Met	hod 300.0				
File ID: 21		7,5		atch ID: 2362	25		Analysi	is Date:	02/18/2010 12:28	
Sample ID: LFB-23625	Units : mg/L			1_100218			Prep D		02/18/2010 11:16	
Analyte	Result	PQL				LCL(ME)	UCL(ME) F	RPDRefV	al %RPD(Limit)	Qual
Chloride	52.7	0.5		<u>'</u>	105	90	110			
Nitrite (NO2) - N	1.21	0.25			97	90	110			
Nitrate (NO3) - N	1.27	0.25	1.25		102	90	110			
Phosphate, ortho - P	1.04	0.5	1.25		83	90	110			L50
Sulfate (SO4)	106	0.5	100		106	90	110			
Sample Matrix Spike		Type: LF	FM T	est Code: El	A Met	hod 300.0				
File ID: <b>24</b>			Ва	atch ID: 2362	25		Analys	is Date:	02/18/2010 13:24	
Sample ID: 10021802-01ALFM	Units : mg/L		Run ID: IC	_1_100218	١		Prep D	ate:	02/18/2010 11:16	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) F	RPDRefV	/al %RPD(Limit)	Qual
Chloride	81	0.5	50	43.4	75	80	120			M2
Nitrite (NO2) - N	1.16	0.25	1.25	0	93	80	120			
Nitrate (NO3) - N	3.71	0.25	1.25	2.954	61	80	120			M2
Phosphate, ortho - P	1.14	0.5		0	91	80	120			
Sulfate (SO4)	144	0.5	100	68.71	75	80	120			M2
Sample Matrix Spike Duplicate	Type: LFMD Test Code: EPA Method 300.0									
File ID: <b>25</b>			Ва	atch ID: <b>236</b> 2	25		Analysi	is Date:	02/18/2010 13:42	
Sample ID: 10021802-01ALFMD	Units : mg/L			_1_100218			Prep D		02/18/2010 11:16	
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME) F	RPDRefV	/al %RPD(Limit)	Qual
Chloride	81.4	0.5	50	43.4	76	80	120	81.03	0.4(10)	M2
Nitrite (NO2) - N	1.21	0.25	1.25	0	97	80	120	1.161	- ' ' '	
Nitrate (NO3) - N	3.6	0.25	1.25	2.954	52	80	120	3.713	3.1(10)	M2
Phosphate, ortho - P	1.34	0.5	1.25	0	107	80	120	1.139		R5
Sulfate (SO4)	144	0.5	100	68.71	76	80	120	143.9	0.3(10)	M2

#### Comments

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

- L50 = Analyte recovery was below acceptance limits for the LCS, but was acceptable in the MS/MSD.
- M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.
- $R5 = MS/MSD \ RPD$  exceeded the laboratory control limit. Recovery met acceptance criteria.