

### **ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS**

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



# Alpha Analytical, Inc.

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

Date 28-Feb-11

David Conner  
Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
(619) 726-7311

Suite 1420

## CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring

Work Order: BMI11022305

Cooler Temp: 0 °C

Alpha's Sample ID	Client's Sample ID	Matrix
11022305-01A	MW-21-5	Aqueous
11022305-02A	MW-21-4	Aqueous
11022305-03A	MW-21-3	Aqueous
11022305-04A	MW-21-2	Aqueous
11022305-05A	MW-21-1	Aqueous
11022305-06A	DUPE-01-1Q11	Aqueous
11022305-07A	EB-01-02/22/11	Aqueous
11022305-08A	TB-01-02/22/11	Aqueous
11022305-09A	SB-01-02/22/11	Aqueous

### Manually Integrated Analytes

<u>Alpha's Sample ID</u>	<u>Test Reference</u>	<u>Analyte</u>
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*      *Randy Gardner*      *Walter Hinchman*

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 • (714) 386-2901 / 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  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 02/23/11

Job: G005862/JPL Groundwater Monitoring

### Perchlorate by Ion Chromatography EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-21-5</b> Lab ID: BMII1022305-01A Perchlorate Date Sampled 02/22/11 11:37	3.01	1.00 µg/L	02/22/11 10:40	02/23/11 12:56
Client ID: <b>MW-21-4</b> Lab ID: BMII1022305-02A Perchlorate Date Sampled 02/22/11 12:11	2.42	1.00 µg/L	02/22/11 10:40	02/23/11 13:14
Client ID: <b>MW-21-3</b> Lab ID: BMII1022305-03A Perchlorate Date Sampled 02/22/11 12:35	ND	1.00 µg/L	02/22/11 10:40	02/23/11 13:33
Client ID: <b>MW-21-2</b> Lab ID: BMII1022305-04A Perchlorate Date Sampled 02/22/11 13:00	1.91	1.00 µg/L	02/22/11 10:40	02/23/11 13:51
Client ID: <b>MW-21-1</b> Lab ID: BMII1022305-05A Perchlorate Date Sampled 02/22/11 13:37	2.90	1.00 µg/L	02/22/11 10:40	02/23/11 15:41
Client ID: <b>DUPE-01-1Q11</b> Lab ID: BMII1022305-06A Perchlorate Date Sampled 02/22/11 00:00	2.63	1.00 µg/L	02/22/11 10:40	02/23/11 14:28
Client ID: <b>EB-01-02/22/11</b> Lab ID: BMII1022305-07A Perchlorate Date Sampled 02/22/11 13:22	ND	1.00 µg/L	02/22/11 10:40	02/23/11 14:46
Client ID: <b>SB-01-02/22/11</b> Lab ID: BMII1022305-09A Perchlorate Date Sampled 02/22/11 13:26	ND	1.00 µg/L	02/22/11 10:40	02/23/11 15:05

ND = Not Detected

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3/7/11

Report Date



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
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Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 02/23/11

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-21-5</b> Lab ID : BMII1022305-01A Chromium (Cr) Date Sampled 02/22/11 11:37	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 13:54
Client ID: <b>MW-21-4</b> Lab ID : BMII1022305-02A Chromium (Cr) Date Sampled 02/22/11 12:11	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:00
Client ID: <b>MW-21-3</b> Lab ID : BMII1022305-03A Chromium (Cr) Date Sampled 02/22/11 12:35	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:06
Client ID: <b>MW-21-2</b> Lab ID : BMII1022305-04A Chromium (Cr) Date Sampled 02/22/11 13:00	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:11
Client ID: <b>MW-21-1</b> Lab ID : BMII1022305-05A Chromium (Cr) Date Sampled 02/22/11 13:37	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:17
Client ID: <b>DUPE-01-1Q11</b> Lab ID : BMII1022305-06A Chromium (Cr) Date Sampled 02/22/11 00:00	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:22
Client ID: <b>EB-01-02/22/11</b> Lab ID : BMII1022305-07A Chromium (Cr) Date Sampled 02/22/11 13:22	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:28
Client ID: <b>SB-01-02/22/11</b> Lab ID : BMII1022305-09A Chromium (Cr) Date Sampled 02/22/11 13:26	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:34

ND = Not Detected

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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

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

Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-21-5</b> Lab ID: BMII1022305-01A Date Received: 02/23/11 Date Sampled: 02/22/11 11:37	*** None Found ***	ND	2.0 µg/L	02/24/11 14:45 02/24/11 14:45
Client ID: <b>MW-21-4</b> Lab ID: BMII1022305-02A Date Received: 02/23/11 Date Sampled: 02/22/11 12:11	*** None Found ***	ND	2.0 µg/L	02/24/11 15:06 02/24/11 15:06
Client ID: <b>MW-21-3</b> Lab ID: BMII1022305-03A Date Received: 02/23/11 Date Sampled: 02/22/11 12:35	*** None Found ***	ND	2.0 µg/L	02/24/11 15:28 02/24/11 15:28
Client ID: <b>MW-21-2</b> Lab ID: BMII1022305-04A Date Received: 02/23/11 Date Sampled: 02/22/11 13:00	*** None Found ***	ND	2.0 µg/L	02/24/11 15:49 02/24/11 15:49
Client ID: <b>MW-21-1</b> Lab ID: BMII1022305-05A Date Received: 02/23/11 Date Sampled: 02/22/11 13:37	*** None Found ***	ND	2.0 µg/L	02/24/11 16:11 02/24/11 16:11
Client ID: <b>DUPE-01-1Q11</b> Lab ID: BMII1022305-06A Date Received: 02/23/11 Date Sampled: 02/22/11 00:00	*** None Found ***	ND	2.0 µg/L	02/24/11 16:32 02/24/11 16:32
Client ID: <b>EB-01-02/22/11</b> Lab ID: BMII1022305-07A Date Received: 02/23/11 Date Sampled: 02/22/11 13:22	*** None Found ***	ND	2.0 µg/L	02/24/11 12:57 02/24/11 12:57
Client ID: <b>TB-01-02/22/11</b> Lab ID: BMII1022305-08A Date Received: 02/23/11 Date Sampled: 02/22/11 07:00	*** None Found ***	ND	2.0 µg/L	02/24/11 12:35 02/24/11 12:35
Client ID: <b>SB-01-02/22/11</b> Lab ID: BMII1022305-09A Date Received: 02/23/11 Date Sampled: 02/22/11 13:26	*** None Found ***	ND	2.0 µg/L	02/24/11 13:19 02/24/11 13:19



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---

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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*RS*

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**Report Date**

Page 1 of 1



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-01A  
Client I.D. Number: MW-21-5

Sampled: 02/22/11 11:37  
Received: 02/23/11  
Extracted: 02/24/11 14:45  
Analyzed: 02/24/11 14:45

### 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	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	4.3	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 (DBCP)	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	112	(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			
35 Tetrachloroethene	1.8	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BM11022305-02A  
Client I.D. Number: MW-21-4

Sampled: 02/22/11 12:11  
Received: 02/23/11  
Extracted: 02/24/11 15:06  
Analyzed: 02/24/11 15:06

### Volatiles 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	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	5.8	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 (DBCP)	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	111	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	1.3	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-03A  
Client I.D. Number: MW-21-3

Sampled: 02/22/11 12:35  
Received: 02/23/11  
Extracted: 02/24/11 15:28  
Analyzed: 02/24/11 15:28

### 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	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	0.75	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	4.5	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 (DBCP)	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	101	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	114	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	5.5	0.50 µg/L			

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  
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Report Date

Page 1 of 1



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-04A  
Client I.D. Number: MW-21-2

Sampled: 02/22/11 13:00  
Received: 02/23/11  
Extracted: 02/24/11 15:49  
Analyzed: 02/24/11 15:49

### 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	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-Dichloroethane	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	0.61	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	4.9	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 (DBCP)	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	104	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	114	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	8.5	0.50 µg/L			

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  
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3/7/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-05A  
Client I.D. Number: MW-21-1

Sampled: 02/22/11 13:37  
Received: 02/23/11  
Extracted: 02/24/11 16:11  
Analyzed: 02/24/11 16:11

### 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	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	1.3	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 (DBCP)	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	104	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	112	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-06A  
Client I.D. Number: DUPE-01-1Q11

Sampled: 02/22/11 00:00  
Received: 02/23/11  
Extracted: 02/24/11 16:32  
Analyzed: 02/24/11 16:32

### 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	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	4.9	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 (DBCP)	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	105	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	112	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	1.1	0.50 µg/L			

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  
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3/7/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-07A  
Client I.D. Number: EB-01-02/22/11

Sampled: 02/22/11 13:22  
Received: 02/23/11  
Extracted: 02/24/11 12:57  
Analyzed: 02/24/11 12:57

### 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	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 (DBCP)	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	103	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/7/11

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-08A  
Client I.D. Number: TB-01-02/22/11

Sampled: 02/22/11 07:00  
Received: 02/23/11  
Extracted: 02/24/11 12:35  
Analyzed: 02/24/11 12:35

### 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	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 (DBCP)	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	103	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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 • (714) 386-2901 / 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.

3/7/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022305-09A  
Client I.D. Number: SB-01-02/22/11

Sampled: 02/22/11 13:26  
Received: 02/23/11  
Extracted: 02/24/11 13:19  
Analyzed: 02/24/11 13:19

### 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	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 (DBCP)	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	103	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/7/11

Report Date



# Alpha Analytical, Inc.

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: BMI11022305

Job: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
11022305-01A	MW-21-5	Aqueous	2
11022305-02A	MW-21-4	Aqueous	2
11022305-03A	MW-21-3	Aqueous	2
11022305-04A	MW-21-2	Aqueous	2
11022305-05A	MW-21-1	Aqueous	2
11022305-06A	DUPE-01-1Q11	Aqueous	2
11022305-07A	EB-01-02/22/11	Aqueous	2
11022305-08A	TB-01-02/22/11	Aqueous	2
11022305-09A	SB-01-02/22/11	Aqueous	2

3/7/11

Report Date

Page 1 of 1





# Alpha Analytical, Inc.

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## QC Summary Report

Date:  
25-Feb-11

Work Order:  
11022305

### Method Blank

File ID: 22	Type MBLK	Test Code: EPA Method 314.0								
Sample ID: MB-26041	Units : µg/L	Batch ID: 26041			Analysis Date: 02/22/2011 14:04					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	ND		1							

### Laboratory Fortified Blank

File ID: 23	Type LFB	Test Code: EPA Method 314.0								
Sample ID: LFB-26041	Units : µg/L	Batch ID: 26041			Analysis Date: 02/22/2011 14:22					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	24.8	2	25		99	85	115			

### Sample Matrix Spike

File ID: 25	Type LFM	Test Code: EPA Method 314.0								
Sample ID: 11022241-08ALFM	Units : µg/L	Batch ID: 26041			Analysis Date: 02/22/2011 14:59					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	3340	200	2500		859	99	80	120		

### Sample Matrix Spike Duplicate

File ID: 26	Type LFMD	Test Code: EPA Method 314.0								
Sample ID: 11022241-08ALFMD	Units : µg/L	Batch ID: 26041			Analysis Date: 02/22/2011 15:17					
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	3600	200	2500		859	110	80	120	3339	7.5(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.



# Alpha Analytical, Inc.

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Date:  
07-Mar-11

## QC Summary Report

Work Order:  
11022305

### Method Blank

File ID: 030211.B\021_M.D\	Type <b>MBLK</b>	Test Code: <b>EPA Method 200.8</b>	Batch ID: <b>26067</b>	Analysis Date: <b>03/02/2011 13:04</b>						
Sample ID: <b>MB-26067</b>	Units : <b>mg/L</b>	Run ID: <b>ICP/MS_110302A</b>	Prep Date: <b>02/28/2011 09:47</b>							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

File ID: 030211.B\022_M.D\	Type <b>LCS</b>	Test Code: <b>EPA Method 200.8</b>	Batch ID: <b>26067</b>	Analysis Date: <b>03/02/2011 13:09</b>						
Sample ID: <b>LCS-26067</b>	Units : <b>mg/L</b>	Run ID: <b>ICP/MS_110302A</b>	Prep Date: <b>02/28/2011 09:47</b>							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0472	0.005	0.05		94	85	115			

### Sample Matrix Spike

File ID: 030211.B\027_M.D\	Type <b>MS</b>	Test Code: <b>EPA Method 200.8</b>	Batch ID: <b>26067</b>	Analysis Date: <b>03/02/2011 13:37</b>						
Sample ID: <b>11022504-01AMS</b>	Units : <b>mg/L</b>	Run ID: <b>ICP/MS_110302A</b>	Prep Date: <b>02/28/2011 09:47</b>							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0541	0.005	0.05	0	108	70	130			

### Sample Matrix Spike Duplicate

File ID: 030211.B\028_M.D\	Type <b>MSD</b>	Test Code: <b>EPA Method 200.8</b>	Batch ID: <b>26067</b>	Analysis Date: <b>03/02/2011 13:43</b>						
Sample ID: <b>11022504-01AMSD</b>	Units : <b>mg/L</b>	Run ID: <b>ICP/MS_110302A</b>	Prep Date: <b>02/28/2011 09:47</b>							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0522	0.005	0.05	0	104	70	130	0.05408	3.6(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.



# Alpha Analytical, Inc.

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Date:  
28-Feb-11

## QC Summary Report

Work Order:  
11022305

### Method Blank

Type **MBLK** Test Code: **EPA Method SW8260B**

File ID: **11022406.D**

Batch ID: **MS15W0224M**

Analysis Date: **02/24/2011 09:42**

Sample ID: **MBLK MS15W0224M**

Units: **µg/L**

Run ID: **MSD\_15\_110224B**

Prep Date: **02/24/2011 09:42**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
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	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)	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								
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	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								
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	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	1								
Surr: 1,2-Dichloroethane-d4	9.79		10		98	70	130			
Surr: Toluene-d8	10.5		10		105	70	130			



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Date:  
28-Feb-11

## QC Summary Report

Work Order:  
11022305

Surr: 4-Bromofluorobenzene

9.7

10

97

70

130



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Date:  
28-Feb-11

## QC Summary Report

Work Order:  
11022305

### Laboratory Control Spike

Type LCS Test Code: EPA Method SW8260B

File ID: 11022403.D

Batch ID: MS15W0224M

Analysis Date: 02/24/2011 08:29

Sample ID: LCS MS15W0224M

Units: µg/L

Run ID: MSD\_15\_110224B

Prep Date: 02/24/2011 08:29

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	8.48	1	10		85	70	130			
Chloromethane	10.5	2	10		105	70	130			
Vinyl chloride	10.4	1	10		104	70	130			
Chloroethane	10.5	1	10		105	70	130			
Bromomethane	9.59	2	10		96	70	130			
Trichlorofluoromethane	9.98	1	10		99.8	70	130			
1,1-Dichloroethene	10.3	1	10		103	70	130			
Dichloromethane	9.5	2	10		95	70	130			
Freon-113	10.5	1	10		105	70	137			
trans-1,2-Dichloroethene	10.4	1	10		104	70	130			
Methyl tert-butyl ether (MTBE)	9.47	0.5	10		95	70	130			
1,1-Dichloroethane	10.3	1	10		103	70	130			
2-Butanone (MEK)	175	10	200		87	70	130			
cis-1,2-Dichloroethene	10.2	1	10		102	70	130			
Bromochloromethane	9.95	1	10		100	70	130			
Chloroform	9.37	1	10		94	70	130			
2,2-Dichloropropane	11	1	10		110	70	130			
1,2-Dichloroethane	9.36	1	10		94	70	130			
1,1,1-Trichloroethane	10.3	1	10		103	70	130			
1,1-Dichloropropene	10.6	1	10		106	70	130			
Carbon tetrachloride	9.17	1	10		92	70	130			
Benzene	9.62	0.5	10		96	70	130			
Dibromomethane	9.51	1	10		95	70	130			
1,2-Dichloropropane	9.86	1	10		99	70	130			
Trichloroethene	10.4	1	10		104	70	130			
Bromodichloromethane	9.81	1	10		98	70	130			
4-Methyl-2-pentanone (MIBK)	20.6	2.5	25		82	20	182			
cis-1,3-Dichloropropene	9.2	1	10		92	70	130			
trans-1,3-Dichloropropene	8.12	1	10		81	70	130			
1,1,2-Trichloroethane	8.99	1	10		90	70	130			
Toluene	10.7	0.5	10		107	70	130			
1,3-Dichloropropane	10	1	10		100	70	130			
Dibromochloromethane	9.7	1	10		97	70	130			
1,2-Dibromoethane (EDB)	20.5	2	20		102	70	130			
Tetrachloroethene	10.6	1	10		106	70	130			
1,1,1,2-Tetrachloroethane	10.6	1	10		106	70	130			
Chlorobenzene	10.2	1	10		102	70	130			
Ethylbenzene	10.2	0.5	10		102	70	130			
m,p-Xylene	10.4	0.5	10		104	70	130			
Bromoform	8.26	1	10		83	70	130			
Styrene	10.4	1	10		104	70	130			
o-Xylene	10.3	0.5	10		103	70	130			
1,1,2,2-Tetrachloroethane	8.94	1	10		89	70	130			
1,2,3-Trichloropropane	17.9	2	20		90	70	130			
Isopropylbenzene	10.3	1	10		103	70	130			
Bromobenzene	9.57	1	10		96	70	130			
n-Propylbenzene	10.4	1	10		104	70	130			
4-Chlorotoluene	10.5	1	10		105	70	130			
2-Chlorotoluene	10.2	1	10		102	70	130			
1,3,5-Trimethylbenzene	10.4	1	10		104	70	130			
tert-Butylbenzene	10.2	1	10		102	70	130			
1,2,4-Trimethylbenzene	10.5	1	10		105	70	130			
sec-Butylbenzene	10.3	1	10		103	70	130			
1,3-Dichlorobenzene	10.4	1	10		104	70	130			
1,4-Dichlorobenzene	9.81	1	10		98	70	130			
4-Isopropyltoluene	10.4	1	10		104	70	130			
1,2-Dichlorobenzene	9.51	1	10		95	70	130			
n-Butylbenzene	10.8	1	10		108	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	42.2	3	50		84	67	130			
1,2,4-Trichlorobenzene	10.8	2	10		108	70	130			
Naphthalene	8.69	2	10		87	70	130			
Hexachlorobutadiene	18.4	2	20		92	70	130			
1,2,3-Trichlorobenzene	10.5	2	10		105	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10		97	70	130			
Surr: Toluene-d8	10.5		10		105	70	130			



# Alpha Analytical, Inc.

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

**Date:**  
28-Feb-11

## QC Summary Report

**Work Order:**  
11022305

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Surr: 4-Bromofluorobenzene	9.57	10	96	70	130
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# Alpha Analytical, Inc.

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Date:  
28-Feb-11

## QC Summary Report

Work Order:  
11022305

### Sample Matrix Spike

Type MS Test Code: EPA Method SW8260B

File ID: 11022407.D

Batch ID: MS15W0224M

Analysis Date: 02/24/2011 10:04

Sample ID: 11021705-19AMS

Units: µg/L

Run ID: MSD\_15\_110224B

Prep Date: 02/24/2011 10:04

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	35.9	2.5	50	0	72	21	138			
Chloromethane	50	10	50	0	100	23	144			
Vinyl chloride	50	2.5	50	0	100	49	136			
Chloroethane	51.2	2.5	50	0	102	21	159			
Bromomethane	47.5	10	50	0	95	10	174			
Trichlorofluoromethane	50.5	2.5	50	0	101	32	154			
1,1-Dichloroethene	51.6	2.5	50	0	103	64	130			
Dichloromethane	46.2	10	50	0	92	69	130			
Freon-113	53.5	2.5	50	0	107	55	141			
trans-1,2-Dichloroethene	51	2.5	50	0	102	63	130			
Methyl tert-butyl ether (MTBE)	50	1.3	50	0	100	47	150			
1,1-Dichloroethane	51.5	2.5	50	0	103	66	130			
2-Butanone (MEK)	753	50	1000	0	75	23	182			
cis-1,2-Dichloroethene	51.5	2.5	50	0	103	70	130			
Bromochloromethane	51.6	2.5	50	0	103	70	132			
Chloroform	47.4	2.5	50	0	95	70	130			
2,2-Dichloropropane	55.2	2.5	50	0	110	38	154			
1,2-Dichloroethane	48.2	2.5	50	0	96	65	134			
1,1,1-Trichloroethane	51.7	2.5	50	0	103	65	136			
1,1-Dichloropropene	53.5	2.5	50	0	107	68	132			
Carbon tetrachloride	46.4	2.5	50	0	93	58	148			
Benzene	48.3	1.3	50	0	97	59	138			
Dibromomethane	49.1	2.5	50	0	98	70	130			
1,2-Dichloropropane	51.7	2.5	50	0	103	70	131			
Trichloroethene	51.6	2.5	50	0	103	65	144			
Bromodichloromethane	50	2.5	50	0	100	50	157			
4-Methyl-2-pentanone (MIBK)	105	13	125	0	84	20	182			
cis-1,3-Dichloropropene	45.9	2.5	50	0	92	63	131			
trans-1,3-Dichloropropene	41.8	2.5	50	0	84	65	136			
1,1,2-Trichloroethane	47.4	2.5	50	0	95	70	131			
Toluene	54.9	1.3	50	0	110	68	130			
1,3-Dichloropropane	54.4	2.5	50	0	109	70	130			
Dibromochloromethane	49.8	2.5	50	0	99.5	42	155			
1,2-Dibromoethane (EDB)	108	5	100	0	108	70	130			
Tetrachloroethene	55.3	2.5	50	0	111	65	130			
1,1,1,2-Tetrachloroethane	54.2	2.5	50	0	108	70	130			
Chlorobenzene	51.9	2.5	50	0	104	70	130			
Ethylbenzene	51.6	1.3	50	0	103	68	130			
m,p-Xylene	52.7	1.3	50	0	105	68	131			
Bromoform	42.9	2.5	50	0	86	65	143			
Styrene	52	2.5	50	0	104	59	153			
o-Xylene	52.3	1.3	50	0	105	70	130			
1,1,2,2-Tetrachloroethane	48.3	2.5	50	0	97	67	130			
1,2,3-Trichloropropane	93	10	100	0	93	70	130			
Isopropylbenzene	51.9	2.5	50	0	104	55	138			
Bromobenzene	48.8	2.5	50	0	98	70	130			
n-Propylbenzene	52.6	2.5	50	0	105	67	133			
4-Chlorotoluene	52.9	2.5	50	0	106	70	130			
2-Chlorotoluene	50.4	2.5	50	0	101	70	130			
1,3,5-Trimethylbenzene	52.1	2.5	50	0	104	67	134			
tert-Butylbenzene	51.3	2.5	50	0	103	55	147			
1,2,4-Trimethylbenzene	52.4	2.5	50	0	105	65	135			
sec-Butylbenzene	52.6	2.5	50	0	105	68	135			
1,3-Dichlorobenzene	51.8	2.5	50	0	104	70	130			
1,4-Dichlorobenzene	50.3	2.5	50	0	101	70	130			
4-Isopropyltoluene	53.2	2.5	50	0	106	68	132			
1,2-Dichlorobenzene	48.9	2.5	50	0	98	70	130			
n-Butylbenzene	55.8	2.5	50	0	112	62	134			
1,2-Dibromo-3-chloropropane (DBCP)	213	15	250	0	85	64	130			
1,2,4-Trichlorobenzene	55.7	10	50	0	111	62	133			
Naphthalene	44.4	10	50	0	89	32	166			
Hexachlorobutadiene	97.7	10	100	0	98	63	130			
1,2,3-Trichlorobenzene	56	10	50	0	112	55	138			
Surr: 1,2-Dichloroethane-d4	48.4		50		97	70	130			
Surr: Toluene-d8	54		50		108	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
28-Feb-11

## QC Summary Report

Work Order:  
11022305

Surr: 4-Bromofluorobenzene

48.6

50

97

70

130





# Alpha Analytical, Inc.

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

Date:  
28-Feb-11

## QC Summary Report

Work Order:  
11022305

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **11022408.D**

Batch ID: **MS15W0224M**

Analysis Date: **02/24/2011 10:26**

Sample ID: **11021705-19AMSD**

Units: **µg/L**

Run ID: **MSD\_15\_110224B**

Prep Date: **02/24/2011 10:26**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	34.7	2.5	50	0	69	21	138	35.85	3.3(33)	
Chloromethane	48.6	10	50	0	97	23	144	50.03	2.9(27)	
Vinyl chloride	49	2.5	50	0	98	49	136	49.98	2.1(21)	
Chloroethane	50.2	2.5	50	0	100	21	159	51.24	2.1(40)	
Bromomethane	47.6	10	50	0	95	10	174	47.52	0.2(40)	
Trichlorofluoromethane	49.2	2.5	50	0	98	32	154	50.53	2.6(37)	
1,1-Dichloroethane	49.8	2.5	50	0	99.6	64	130	51.56	3.5(21)	
Dichloromethane	46.2	10	50	0	92	69	130	46.19	0.1(20)	
Freon-113	50.4	2.5	50	0	101	55	141	53.54	6.0(40)	
trans-1,2-Dichloroethene	49.9	2.5	50	0	99.7	63	130	50.98	2.2(20)	
Methyl tert-butyl ether (MTBE)	51.8	1.3	50	0	104	47	150	50.02	3.4(40)	
1,1-Dichloroethane	50.9	2.5	50	0	102	66	130	51.52	1.2(20)	
2-Butanone (MEK)	762	50	1000	0	76	23	182	753.2	1.2(22)	
cis-1,2-Dichloroethene	50.3	2.5	50	0	101	70	130	51.53	2.3(20)	
Bromochloromethane	50.7	2.5	50	0	101	70	132	51.59	1.7(20)	
Chloroform	46.6	2.5	50	0	93	70	130	47.38	1.8(20)	
2,2-Dichloropropane	55.4	2.5	50	0	111	38	154	55.18	0.5(22)	
1,2-Dichloroethane	47.9	2.5	50	0	96	65	134	48.24	0.7(20)	
1,1,1-Trichloroethane	51.4	2.5	50	0	103	65	136	51.65	0.4(20)	
1,1-Dichloropropene	52	2.5	50	0	104	68	132	53.47	2.9(20)	
Carbon tetrachloride	46.7	2.5	50	0	93	58	148	46.39	0.6(20)	
Benzene	47.8	1.3	50	0	96	59	138	48.32	1.1(21)	
Dibromomethane	49.9	2.5	50	0	99.8	70	130	49.12	1.6(20)	
1,2-Dichloropropane	51.1	2.5	50	0	102	70	131	51.71	1.2(20)	
Trichloroethene	50.6	2.5	50	0	101	65	144	51.59	1.9(20)	
Bromodichloromethane	50.7	2.5	50	0	101	50	157	50	1.4(20)	
4-Methyl-2-pentanone (MIBK)	111	13	125	0	89	20	182	105.3	5.4(20)	
cis-1,3-Dichloropropene	47.3	2.5	50	0	95	63	131	45.85	3.0(20)	
trans-1,3-Dichloropropene	42.8	2.5	50	0	86	65	136	41.77	2.3(20)	
1,1,2-Trichloroethane	47.2	2.5	50	0	94	70	131	47.43	0.5(20)	
Toluene	52.7	1.3	50	0	105	68	130	54.94	4.2(20)	
1,3-Dichloropropane	54.2	2.5	50	0	108	70	130	54.4	0.4(20)	
Dibromochloromethane	51.1	2.5	50	0	102	42	155	49.77	2.6(20)	
1,2-Dibromoethane (EDB)	107	5	100	0	107	70	130	108.1	0.8(20)	
Tetrachloroethene	52.4	2.5	50	0	105	65	130	55.32	5.4(20)	
1,1,1,2-Tetrachloroethane	52.4	2.5	50	0	105	70	130	54.15	3.3(20)	
Chlorobenzene	49.7	2.5	50	0	99	70	130	51.91	4.4(20)	
Ethylbenzene	49.3	1.3	50	0	99	68	130	51.56	4.4(20)	
m,p-Xylene	50.5	1.3	50	0	101	68	131	52.74	4.4(20)	
Bromoform	43.9	2.5	50	0	88	65	143	42.89	2.4(20)	
Styrene	50.5	2.5	50	0	101	59	153	51.98	3.0(37)	
o-Xylene	50.3	1.3	50	0	101	70	130	52.33	3.9(20)	
1,1,2,2-Tetrachloroethane	47.6	2.5	50	0	95	67	130	48.33	1.6(20)	
1,2,3-Trichloropropane	94.6	10	100	0	95	70	130	93.03	1.7(20)	
Isopropylbenzene	50.1	2.5	50	0	100	55	138	51.92	3.5(20)	
Bromobenzene	48	2.5	50	0	96	70	130	48.84	1.8(20)	
n-Propylbenzene	50.8	2.5	50	0	102	67	133	52.62	3.6(30)	
4-Chlorotoluene	50.8	2.5	50	0	102	70	130	52.86	4.1(20)	
2-Chlorotoluene	49.3	2.5	50	0	99	70	130	50.37	2.2(20)	
1,3,5-Trimethylbenzene	50.1	2.5	50	0	100	67	134	52.12	4.0(21)	
tert-Butylbenzene	49.6	2.5	50	0	99	55	147	51.25	3.3(20)	
1,2,4-Trimethylbenzene	50.8	2.5	50	0	102	65	135	52.36	3.1(25)	
sec-Butylbenzene	50.5	2.5	50	0	101	68	135	52.56	4.0(20)	
1,3-Dichlorobenzene	51	2.5	50	0	102	70	130	51.76	1.5(20)	
1,4-Dichlorobenzene	49.1	2.5	50	0	98	70	130	50.27	2.3(20)	
4-Isopropyltoluene	51.5	2.5	50	0	103	68	132	53.16	3.1(20)	
1,2-Dichlorobenzene	48.5	2.5	50	0	97	70	130	48.94	1.0(20)	
n-Butylbenzene	54.1	2.5	50	0	108	62	134	55.81	3.1(21)	
1,2-Dibromo-3-chloropropane (DBCP)	232	15	250	0	93	64	130	212.9	8.7(20)	
1,2,4-Trichlorobenzene	56.6	10	50	0	113	62	133	55.71	1.5(29)	
Naphthalene	45	10	50	0	90	32	166	44.39	1.3(40)	
Hexachlorobutadiene	99	10	100	0	99	63	130	97.66	1.3(21)	
1,2,3-Trichlorobenzene	56.2	10	50	0	112	55	138	55.97	0.4(36)	
Surr: 1,2-Dichloroethane-d4	49.4		50		99	70	130			
Surr: Toluene-d8	52.3		50		105	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**  
28-Feb-11

## QC Summary Report

**Work Order:**  
11022305

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Surr: 4-Bromofluorobenzene	48.3	50	97	70	130
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**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

# CA

WorkOrder : BMIS11022305  
 Report Due By : 5:00 PM On : 08-Mar-2011

**Client:**  
 Battelle Memorial Institute  
 655 West Broadway  
 Suite 1420  
 San Diego, CA 92101  
 PO : 218013

**Report Attention**    **Phone Number**    **Email Address**  
 David Conner    (619) 726-7311    x    connerd@battelle.org  
 Betsy Cutie    (614) 424-4899    x    cutiec@battelle.org  
 Shane Walton    (614) 424-4117    x    waltonsh@battelle.org

EDD Required : Yes

Sampled by : Chase Brogdon

Cooler Temp

Samples Received

Date Printed

Client's COC # : 33409

Job : G005862/JPL Groundwater Monitoring

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

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles Alpha Sub	TAT	Requested Tests			Sample Remarks		
					314_W	METALS_D W	VOC_TIC_W			
BM11022305-01A	MW-21-5	AQ 02/22/11 11:37	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022305-02A	MW-21-4	AQ 02/22/11 12:11	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022305-03A	MW-21-3	AQ 02/22/11 12:35	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022305-04A	MW-21-2	AQ 02/22/11 13:00	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022305-05A	MW-21-1	AQ 02/22/11 13:37	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022305-06A	DUPE-01-1Q11	AQ 02/22/11 00:00	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022305-07A	EB-01-02/22/11	AQ 02/22/11 13:22	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022305-08A	TB-01-02/22/11	AQ 02/22/11 07:00	1	0	9					Reno Trip Blank 12/14/10
BM11022305-09A	SB-01-02/22/11	AQ 02/22/11 13:26	5	0	9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	

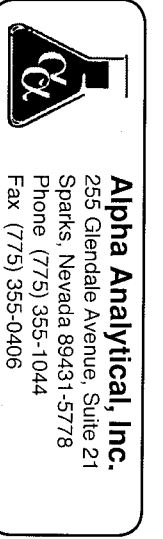
Comments: Security seals intact. Frozen ice. Temp Blank #5596 received @ 0°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E. MS/MSD).

Logged in by: Empbath    Adcox    Signature: Elizabeth Adcox    Print Name: Elizabeth Adcox    Company: Alpha Analytical, Inc.    Date/Time: 2-23-11 1206

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.  
 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:**

Company Name BATELLE  
 Attn: TERNS TRUCKERS  
 Address 505 KINE AVE.  
 City, State, Zip COLUMBUS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Samples Collected From Which States?**

AZ \_\_\_\_\_ CA  NV \_\_\_\_\_ WA \_\_\_\_\_  
 ID \_\_\_\_\_ OR \_\_\_\_\_ OTHER \_\_\_\_\_

DOD Site \_\_\_\_\_  
 Page # 1 of 1

33409

**Analyses Required**

Data Validation Level III or IV

EDP/EDF? YES  NO \_\_\_\_\_  
 Global ID # \_\_\_\_\_

**REMARKS**

Time Sampled	Date Sampled	Matrix* See Key Below	P.O. #	Lab ID Number (Use Only)	Office (Use Only)	Sample Description	TAT	Field Filtered	# Containers**	Analyses Required	REMARKS
1137	2/22/11	AR	BMT11022305-01			MW-21-5			3v 2p	X	
1211						MW-21-4			3v 2p	X	
1235						MW-21-3			3v 2p	X	
1300						MW-21-2			3v 2p	X	
1337						MW-21-1			3v 2p	X	
1322	2/22/11					Dupe - 01 - 1811			3v 2p	X	Duplicate
0700						ETB-01 - 02/22/11			3v 2p	X	EQM, PUREY BLANK
1326	2/22/11					SB-01 - 02/22/11			1v 2p	X	TRIP BLANK
									3v 2p	X	SOURCE BLANK

**ADDITIONAL INSTRUCTIONS:**

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action (NAC 445.0636 (c) (2)). Sampled By: TERNS TRUCKERS

Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date:	Time:
<u>[Signature]</u> / <u>TERNS TRUCKERS</u>	<u>[Signature]</u> / <u>Alpha Analytical</u>	<u>2/23/11</u>	<u>1500</u>
<u>[Signature]</u> / <u>Alpha Analytical</u>	<u>[Signature]</u> / <u>Alpha</u>	<u>2-23-11</u>	<u>1200</u>

\*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 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.



# Alpha Analytical, Inc.

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

Date 01-Mar-11

David Conner  
Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
(619) 726-7311

Suite 1420

## CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring

Work Order: BMI11022404

Cooler Temp: 0°C

Alpha's Sample ID	Client's Sample ID	Matrix
11022404-01A	MW-14-5	Aqueous
11022404-02A	MW-14-4	Aqueous
11022404-03A	MW-14-3	Aqueous
11022404-04A	MW-14-2	Aqueous
11022404-05A	MW-14-1	Aqueous
11022404-06A	DUPE-02-1Q11	Aqueous
11022404-07A	EB-02-02/23/11	Aqueous
11022404-08A	TB-02-02/23/11	Aqueous

### Manually Integrated Analytes

<u>Alpha's Sample ID</u>	<u>Test Reference</u>	<u>Analyte</u>
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*      *Randy Gardner*      *Walter Hinchman*

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 • (714) 386-2901 / 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.



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 02/24/11

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: BMII1022404-01A Perchlorate Date Sampled 02/23/11 09:40	ND	1.00 µg/L	02/25/11 10:30	02/25/11 12:22
Client ID: MW-14-4 Lab ID: BMII1022404-02A Perchlorate Date Sampled 02/23/11 10:08	4.03	1.00 µg/L	02/25/11 10:30	02/25/11 13:17
Client ID: MW-14-3 Lab ID: BMII1022404-03A Perchlorate Date Sampled 02/23/11 10:42	5.61	1.00 µg/L	02/25/11 10:30	02/25/11 13:35
Client ID: MW-14-2 Lab ID: BMII1022404-04A Perchlorate Date Sampled 02/23/11 11:20	3.61	1.00 µg/L	02/25/11 10:30	02/28/11 14:59
Client ID: MW-14-1 Lab ID: BMII1022404-05A Perchlorate Date Sampled 02/23/11 12:05	2.54	2.00 µg/L	02/25/11 10:30	02/25/11 14:12
Client ID: DUPE-02-1Q11 Lab ID: BMII1022404-06A Perchlorate Date Sampled 02/23/11 00:00	3.02	1.00 µg/L	02/25/11 10:30	02/25/11 14:30
Client ID: EB-02-02/23/11 Lab ID: BMII1022404-07A Perchlorate Date Sampled 02/23/11 11:46	ND	1.00 µg/L	02/25/11 10:30	02/25/11 14:49

ND = Not Detected

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

3/8/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 02/24/11

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-14-3</b> Lab ID : BM11022404-03A Chromium (Cr) Date Sampled 02/23/11 10:42	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 14:39
Client ID: <b>MW-14-2</b> Lab ID : BM11022404-04A Chromium (Cr) Date Sampled 02/23/11 11:20	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:08
Client ID: <b>MW-14-1</b> Lab ID : BM11022404-05A Chromium (Cr) Date Sampled 02/23/11 12:05	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:13
Client ID: <b>DUPE-02-1Q11</b> Lab ID : BM11022404-06A Chromium (Cr) Date Sampled 02/23/11 00:00	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:19
Client ID: <b>EB-02-02/23/11</b> Lab ID : BM11022404-07A Chromium (Cr) Date Sampled 02/23/11 11:46	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:24

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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3/8/11

Report Date



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

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

Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID : <b>MW-14-5</b> Lab ID : BMII1022404-01A Date Received : 02/24/11 Date Sampled : 02/23/11 09:40	Sulfur dioxide	2.8	02/28/11 15:18	02/28/11 15:18
Client ID : <b>MW-14-4</b> Lab ID : BMII1022404-02A Date Received : 02/24/11 Date Sampled : 02/23/11 10:08	*** None Found ***	ND	02/28/11 15:40	02/28/11 15:40
Client ID : <b>MW-14-3</b> Lab ID : BMII1022404-03A Date Received : 02/24/11 Date Sampled : 02/23/11 10:42	*** None Found ***	ND	02/28/11 16:01	02/28/11 16:01
Client ID : <b>MW-14-2</b> Lab ID : BMII1022404-04A Date Received : 02/24/11 Date Sampled : 02/23/11 11:20	*** None Found ***	ND	02/28/11 16:23	02/28/11 16:23
Client ID : <b>MW-14-1</b> Lab ID : BMII1022404-05A Date Received : 02/24/11 Date Sampled : 02/23/11 12:05	*** None Found ***	ND	02/28/11 16:44	02/28/11 16:44
Client ID : <b>DUPE-02-1Q11</b> Lab ID : BMII1022404-06A Date Received : 02/24/11 Date Sampled : 02/23/11 00:00	*** None Found ***	ND	02/28/11 17:06	02/28/11 17:06
Client ID : <b>EB-02-02/23/11</b> Lab ID : BMII1022404-07A Date Received : 02/24/11 Date Sampled : 02/23/11 11:46	*** None Found ***	ND	02/28/11 12:26	02/28/11 12:26
Client ID : <b>TB-02-02/23/11</b> Lab ID : BMII1022404-08A Date Received : 02/24/11 Date Sampled : 02/23/11 07:00	*** None Found ***	ND	02/28/11 12:04	02/28/11 12:04





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Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / [info@alpha-analytical.com](mailto:info@alpha-analytical.com)

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*PS*

3/8/11

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**Report Date**

Page 1 of 1



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-01A  
Client I.D. Number: MW-14-5

Sampled: 02/23/11 09:40  
Received: 02/24/11  
Extracted: 02/28/11 15:18  
Analyzed: 02/28/11 15:18

### 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	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-Dichloroethane	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	Q 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 (DBCP)	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	Q 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	107	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	111	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	95	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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3/8/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-02A  
Client I.D. Number: MW-14-4

Sampled: 02/23/11 10:08  
Received: 02/24/11  
Extracted: 02/28/11 15:40  
Analyzed: 02/28/11 15:40

### 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	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	Q 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 (DBCP)	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	Q 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	111	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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3/8/11

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-03A  
Client I.D. Number: MW-14-3

Sampled: 02/23/11 10:42  
Received: 02/24/11  
Extracted: 02/28/11 16:01  
Analyzed: 02/28/11 16:01

### 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	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	Q 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	0.59	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	2.3	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	Q 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	113	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	0.82	0.50 µg/L			

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

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



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-04A  
Client I.D. Number: MW-14-2

Sampled: 02/23/11 11:20  
Received: 02/24/11  
Extracted: 02/28/11 16:23  
Analyzed: 02/28/11 16:23

### 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	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	Q 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	0.59	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	7.3	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	Q 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	109	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	96	(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			
35 Tetrachloroethene	0.62	0.50 µg/L			

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

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 • (714) 386-2901 / 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.

3/8/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-05A  
Client I.D. Number: MW-14-1

Sampled: 02/23/11 12:05  
Received: 02/24/11  
Extracted: 02/28/11 16:44  
Analyzed: 02/28/11 16:44

### 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	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	Q 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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	2.7	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	Q 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	113	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer  
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3/8/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-06A  
Client I.D. Number: DUPE-02-1Q11

Sampled: 02/23/11 00:00  
Received: 02/24/11  
Extracted: 02/28/11 17:06  
Analyzed: 02/28/11 17:06

### 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	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	Q 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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	2.3	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	Q 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	111	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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

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3/8/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-07A  
Client I.D. Number: EB-02-02/23/11

Sampled: 02/23/11 11:46  
Received: 02/24/11  
Extracted: 02/28/11 12:26  
Analyzed: 02/28/11 12:26

### 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	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	Q 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 (DBCP)	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	Q 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	106	(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	96	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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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3/8/11

Report Date





# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022404-08A  
Client I.D. Number: TB-02-02/23/11

Sampled: 02/23/11 07:00  
Received: 02/24/11  
Extracted: 02/28/11 12:04  
Analyzed: 02/28/11 12:04

### 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	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-Dichloroethane	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	Q 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 (DBCP)	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	Q 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	104	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	103	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	95	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

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

3/8/11

Report Date



# Alpha Analytical, Inc.

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: BMI11022404

Job: G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
11022404-01A	MW-14-5	Aqueous	2
11022404-02A	MW-14-4	Aqueous	2
11022404-03A	MW-14-3	Aqueous	2
11022404-04A	MW-14-2	Aqueous	2
11022404-05A	MW-14-1	Aqueous	2
11022404-06A	DUPE-02-1Q11	Aqueous	2
11022404-07A	EB-02-02/23/11	Aqueous	2
11022404-08A	TB-02-02/23/11	Aqueous	2

3/8/11

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

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Date:  
01-Mar-11

## QC Summary Report

Work Order:  
11022404

### Method Blank

Type **MBLK** Test Code: **EPA Method 314.0**

File ID: 14			Batch ID: <b>26061</b>				Analysis Date: <b>02/25/2011 11:26</b>			
Sample ID: <b>MB-26061</b>	Units : <b>µg/L</b>		Run ID: <b>IC_3_110225A</b>				Prep Date: <b>02/25/2011 10:30</b>			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	ND		1							

### Laboratory Fortified Blank

Type **LFB** Test Code: **EPA Method 314.0**

File ID: 15			Batch ID: <b>26061</b>				Analysis Date: <b>02/25/2011 11:45</b>			
Sample ID: <b>LFB-26061</b>	Units : <b>µg/L</b>		Run ID: <b>IC_3_110225A</b>				Prep Date: <b>02/25/2011 10:30</b>			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	25.4	2	25		102	85	115			

### Sample Matrix Spike

Type **LFM** Test Code: **EPA Method 314.0**

File ID: 18			Batch ID: <b>26061</b>				Analysis Date: <b>02/25/2011 12:40</b>			
Sample ID: <b>11022404-01ALFM</b>	Units : <b>µg/L</b>		Run ID: <b>IC_3_110225A</b>				Prep Date: <b>02/25/2011 10:30</b>			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	24.3	2	25		0 97	80	120			

### Sample Matrix Spike Duplicate

Type **LFMD** Test Code: **EPA Method 314.0**

File ID: 19			Batch ID: <b>26061</b>				Analysis Date: <b>02/25/2011 12:58</b>			
Sample ID: <b>11022404-01ALFMD</b>	Units : <b>µg/L</b>		Run ID: <b>IC_3_110225A</b>				Prep Date: <b>02/25/2011 10:30</b>			
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	25	2	25		0 99.8	80	120	24.34	2.5(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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Date:  
08-Mar-11

## QC Summary Report

Work Order:  
11022404

### Method Blank

Type: **MBLK** Test Code: **EPA Method 200.8**

File ID: 030211.B\021\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:04

Sample ID: MB-26067

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

Type: **LCS** Test Code: **EPA Method 200.8**

File ID: 030211.B\022\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:09

Sample ID: LCS-26067

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0472	0.005	0.05		94	85	115			

### Sample Matrix Spike

Type: **MS** Test Code: **EPA Method 200.8**

File ID: 030211.B\027\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:37

Sample ID: 11022504-01AMS

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0541	0.005	0.05		0	108	70	130		

### Sample Matrix Spike Duplicate

Type: **MSD** Test Code: **EPA Method 200.8**

File ID: 030211.B\028\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:43

Sample ID: 11022504-01AMSD

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0522	0.005	0.05		0	104	70	130	0.05408	3.6(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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Date:  
01-Mar-11

## QC Summary Report

Work Order:  
11022404

### Method Blank

Type **MBLK** Test Code: **EPA Method SW8260B**

File ID: **11022807.D**

Batch ID: **MS15W0228M**

Analysis Date: **02/28/2011 10:38**

Sample ID: **MBLK MS15W0228M**

Units : **µg/L**

Run ID: **MSD\_15\_110228B**

Prep Date: **02/28/2011 10:38**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
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	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)	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								
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	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								
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	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	1								
Surr: 1,2-Dichloroethane-d4	10.5		10		105	70	130			
Surr: Toluene-d8	10.3		10		103	70	130			



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**Date:**

*01-Mar-11*

## QC Summary Report

**Work Order:**

11022404

Surr: 4-Bromofluorobenzene

9.52

10

95

70

130



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Date:  
01-Mar-11

## QC Summary Report

Work Order:  
11022404

### Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **11022803.D**

Batch ID: **MS15W0228M**

Analysis Date: **02/28/2011 09:01**

Sample ID: **LCS MS15W0228M**

Units : **µg/L**

Run ID: **MSD\_15\_110228B**

Prep Date: **02/28/2011 09:01**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	8.57	1	10		86	70	130			
Chloromethane	9.27	2	10		93	70	130			
Vinyl chloride	10.1	1	10		101	70	130			
Chloroethane	10.3	1	10		103	70	130			
Bromomethane	10.3	2	10		103	70	130			
Trichlorofluoromethane	10.8	1	10		108	70	130			
1,1-Dichloroethene	10.3	1	10		103	70	130			
Dichloromethane	9.03	2	10		90	70	130			
Freon-113	10.9	1	10		109	70	137			
trans-1,2-Dichloroethene	10.1	1	10		101	70	130			
Methyl tert-butyl ether (MTBE)	8.8	0.5	10		88	70	130			
1,1-Dichloroethane	10.2	1	10		102	70	130			
2-Butanone (MEK)	156	10	200		78	70	130			
cis-1,2-Dichloroethene	9.98	1	10		99.8	70	130			
Bromochloromethane	9.59	1	10		96	70	130			
Chloroform	9.95	1	10		100	70	130			
2,2-Dichloropropane	10.2	1	10		102	70	130			
1,2-Dichloroethane	9.99	1	10		99.9	70	130			
1,1,1-Trichloroethane	11.1	1	10		111	70	130			
1,1-Dichloropropene	10.9	1	10		109	70	130			
Carbon tetrachloride	9.73	1	10		97	70	130			
Benzene	9.45	0.5	10		95	70	130			
Dibromomethane	9.77	1	10		98	70	130			
1,2-Dichloropropane	9.59	1	10		96	70	130			
Trichloroethene	10.6	1	10		106	70	130			
Bromodichloromethane	10.5	1	10		105	70	130			
4-Methyl-2-pentanone (MIBK)	18.5	2.5	25		74	20	182			
cis-1,3-Dichloropropene	9.18	1	10		92	70	130			
trans-1,3-Dichloropropene	8.32	1	10		83	70	130			
1,1,2-Trichloroethane	8.98	1	10		90	70	130			
Toluene	9.85	0.5	10		99	70	130			
1,3-Dichloropropane	9.03	1	10		90	70	130			
Dibromochloromethane	9.45	1	10		95	70	130			
1,2-Dibromoethane (EDB)	18.6	2	20		93	70	130			
Tetrachloroethene	10.2	1	10		102	70	130			
1,1,1,2-Tetrachloroethane	10.5	1	10		105	70	130			
Chlorobenzene	9.84	1	10		98	70	130			
Ethylbenzene	10.2	0.5	10		102	70	130			
m,p-Xylene	10.2	0.5	10		102	70	130			
Bromoform	8.68	1	10		87	70	130			
Styrene	10.3	1	10		103	70	130			
o-Xylene	10.2	0.5	10		102	70	130			
1,1,2,2-Tetrachloroethane	8.69	1	10		87	70	130			
1,2,3-Trichloropropane	18.4	2	20		92	70	130			
Isopropylbenzene	10.3	1	10		103	70	130			
Bromobenzene	9.63	1	10		96	70	130			
n-Propylbenzene	10.3	1	10		103	70	130			
4-Chlorotoluene	10.5	1	10		105	70	130			
2-Chlorotoluene	10.2	1	10		102	70	130			
1,3,5-Trimethylbenzene	10.7	1	10		107	70	130			
tert-Butylbenzene	10.2	1	10		102	70	130			
1,2,4-Trimethylbenzene	10.7	1	10		107	70	130			
sec-Butylbenzene	10.3	1	10		103	70	130			
1,3-Dichlorobenzene	10.5	1	10		105	70	130			
1,4-Dichlorobenzene	9.83	1	10		98	70	130			
4-Isopropyltoluene	10.6	1	10		106	70	130			
1,2-Dichlorobenzene	9.42	1	10		94	70	130			
n-Butylbenzene	10.9	1	10		109	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	40.7	3	50		81	67	130			
1,2,4-Trichlorobenzene	10.1	2	10		101	70	130			
Naphthalene	7.88	2	10		79	70	130			
Hexachlorobutadiene	17.9	2	20		89	70	130			
1,2,3-Trichlorobenzene	9.7	2	10		97	70	130			
Surr: 1,2-Dichloroethane-d4	10.6		10		106	70	130			
Surr: Toluene-d8	9.76		10		98	70	130			



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**Date:**

01-Mar-11

## QC Summary Report

**Work Order:**

11022404

Surr: 4-Bromofluorobenzene

9.69

10

97

70

130





# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:

01-Mar-11

## QC Summary Report

Work Order:

11022404

### Sample Matrix Spike

File ID: 11022808.D

Sample ID: 11022404-01AMS

Type MS

Test Code: EPA Method SW8260B

Batch ID: MS15W0228M

Analysis Date: 02/28/2011 11:00

Units: µg/L

Run ID: MSD\_15\_110228B

Prep Date: 02/28/2011 11:00

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	36.1	2.5	50	0	72	21	138			
Chloromethane	44	10	50	0	88	23	144			
Vinyl chloride	47.5	2.5	50	0	95	49	136			
Chloroethane	49.8	2.5	50	0	99.6	21	159			
Bromomethane	41.1	10	50	0	82	10	174			
Trichlorofluoromethane	52.9	2.5	50	0	106	32	154			
1,1-Dichloroethene	47.7	2.5	50	0	95	64	130			
Dichloromethane	42.7	10	50	0	85	69	130			
Freon-113	49	2.5	50	0	98	55	141			
trans-1,2-Dichloroethene	45.7	2.5	50	0	91	63	130			
Methyl tert-butyl ether (MTBE)	46.5	1.3	50	0	93	47	150			
1,1-Dichloroethane	47.3	2.5	50	0	95	66	130			
2-Butanone (MEK)	685	50	1000	0	69	23	182			
cis-1,2-Dichloroethene	47.7	2.5	50	0	95	70	130			
Bromochloromethane	46.8	2.5	50	0	94	70	132			
Chloroform	44.9	2.5	50	0	90	70	130			
2,2-Dichloropropane	48.6	2.5	50	0	97	38	154			
1,2-Dichloroethane	47.6	2.5	50	0	95	65	134			
1,1,1-Trichloroethane	49.9	2.5	50	0	99.7	65	136			
1,1-Dichloropropene	49.4	2.5	50	0	99	68	132			
Carbon tetrachloride	44.8	2.5	50	0	90	58	148			
Benzene	43.4	1.3	50	0	87	59	138			
Dibromomethane	45.9	2.5	50	0	92	70	130			
1,2-Dichloropropane	44.8	2.5	50	0	90	70	131			
Trichloroethene	47.4	2.5	50	0	95	65	144			
Bromodichloromethane	48.1	2.5	50	0	96	50	157			
4-Methyl-2-pentanone (MIBK)	94.3	13	125	0	75	20	182			
cis-1,3-Dichloropropene	41.7	2.5	50	0	83	63	131			
trans-1,3-Dichloropropene	38.1	2.5	50	0	76	65	136			
1,1,2-Trichloroethane	42.9	2.5	50	0	86	70	131			
Toluene	47.5	1.3	50	0	95	68	130			
1,3-Dichloropropane	47.9	2.5	50	0	96	70	130			
Dibromochloromethane	46.9	2.5	50	0	94	42	155			
1,2-Dibromoethane (EDB)	96.3	5	100	0	96	70	130			
Tetrachloroethene	48.7	2.5	50	0	97	65	130			
1,1,1,2-Tetrachloroethane	48.8	2.5	50	0	98	70	130			
Chlorobenzene	46.2	2.5	50	0	92	70	130			
Ethylbenzene	45.9	1.3	50	0	92	68	130			
m,p-Xylene	46.8	1.3	50	0	94	68	131			
Bromoform	41.7	2.5	50	0	83	65	143			
Styrene	47	2.5	50	0	94	59	153			
o-Xylene	46.8	1.3	50	0	94	70	130			
1,1,2,2-Tetrachloroethane	43.1	2.5	50	0	86	67	130			
1,2,3-Trichloropropane	89	10	100	0	89	70	130			
Isopropylbenzene	47	2.5	50	0	94	55	138			
Bromobenzene	44.6	2.5	50	0	89	70	130			
n-Propylbenzene	47.3	2.5	50	0	95	67	133			
4-Chlorotoluene	48.6	2.5	50	0	97	70	130			
2-Chlorotoluene	46.1	2.5	50	0	92	70	130			
1,3,5-Trimethylbenzene	48	2.5	50	0	96	67	134			
tert-Butylbenzene	46.7	2.5	50	0	93	55	147			
1,2,4-Trimethylbenzene	48	2.5	50	0	96	65	135			
sec-Butylbenzene	47.9	2.5	50	0	96	68	135			
1,3-Dichlorobenzene	48.5	2.5	50	0	97	70	130			
1,4-Dichlorobenzene	45.7	2.5	50	0	91	70	130			
4-Isopropyltoluene	48.6	2.5	50	0	97	68	132			
1,2-Dichlorobenzene	44.5	2.5	50	0	89	70	130			
n-Butylbenzene	50.3	2.5	50	0	101	62	134			
1,2-Dibromo-3-chloropropane (DBCP)	207	15	250	0	83	64	130			
1,2,4-Trichlorobenzene	49.2	10	50	0	98	62	133			
Naphthalene	37.1	10	50	0	74	32	166			
Hexachlorobutadiene	86.2	10	100	0	86	63	130			
1,2,3-Trichlorobenzene	45	10	50	0	90	55	138			
Surr: 1,2-Dichloroethane-d4	51.6		50		103	70	130			
Surr: Toluene-d8	51.4		50		103	70	130			



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**

01-Mar-11

## QC Summary Report

**Work Order:**

11022404

Surr: 4-Bromofluorobenzene

47.4

50

95

70

130



# Alpha Analytical, Inc.

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Date:

01-Mar-11

## QC Summary Report

Work Order:

11022404

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **11022809.D**

Batch ID: **MS15W0228M**

Analysis Date: **02/28/2011 11:21**

Sample ID: **11022404-01AMSD**

Units : **µg/L**

Run ID: **MSD\_15\_110228B**

Prep Date: **02/28/2011 11:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	40.1	2.5	50	0	80	21	138	36.09	10.4(33)	
Chloromethane	47.9	10	50	0	96	23	144	44.04	8.3(27)	
Vinyl chloride	50.9	2.5	50	0	102	49	136	47.49	7.0(21)	
Chloroethane	54.7	2.5	50	0	109	21	159	49.78	9.4(40)	
Bromomethane	48.3	10	50	0	97	10	174	41.1	16.2(40)	
Trichlorofluoromethane	56.4	2.5	50	0	113	32	154	52.93	6.3(37)	
1,1-Dichloroethene	52.2	2.5	50	0	104	64	130	47.7	8.9(21)	
Dichloromethane	45.5	10	50	0	91	69	130	42.74	6.2(20)	
Freon-113	53.5	2.5	50	0	107	55	141	48.98	8.8(40)	
trans-1,2-Dichloroethene	50.1	2.5	50	0	100	63	130	45.65	9.3(20)	
Methyl tert-butyl ether (MTBE)	51.1	1.3	50	0	102	47	150	46.48	9.4(40)	
1,1-Dichloroethane	51.1	2.5	50	0	102	66	130	47.26	7.8(20)	
2-Butanone (MEK)	726	50	1000	0	73	23	182	685.2	5.8(22)	
cis-1,2-Dichloroethene	52.2	2.5	50	0	104	70	130	47.67	9.1(20)	
Bromochloromethane	51	2.5	50	0	102	70	132	46.84	8.5(20)	
Chloroform	48.6	2.5	50	0	97	70	130	44.86	8.0(20)	
2,2-Dichloropropane	55.9	2.5	50	0	112	38	154	48.61	14.0(22)	
1,2-Dichloroethane	51.2	2.5	50	0	102	65	134	47.62	7.2(20)	
1,1,1-Trichloroethane	54.7	2.5	50	0	109	65	136	49.86	9.2(20)	
1,1-Dichloropropene	54.1	2.5	50	0	108	68	132	49.4	9.0(20)	
Carbon tetrachloride	51	2.5	50	0	102	58	148	44.75	13.1(20)	
Benzene	47.7	1.3	50	0	95	59	138	43.39	9.6(21)	
Dibromomethane	50.4	2.5	50	0	101	70	130	45.9	9.3(20)	
1,2-Dichloropropane	50.1	2.5	50	0	100	70	131	44.75	11.2(20)	
Trichloroethene	51.5	2.5	50	0	103	65	144	47.37	8.4(20)	
Bromodichloromethane	53	2.5	50	0	106	50	157	48.05	9.8(20)	
4-Methyl-2-pentanone (MIBK)	106	13	125	0	85	20	182	94.33	11.8(20)	
cis-1,3-Dichloropropene	46.4	2.5	50	0	93	63	131	41.7	10.7(20)	
trans-1,3-Dichloropropene	43.5	2.5	50	0	87	65	136	38.1	13.1(20)	
1,1,2-Trichloroethane	47	2.5	50	0	94	70	131	42.94	9.1(20)	
Toluene	52.2	1.3	50	0	104	68	130	47.48	9.4(20)	
1,3-Dichloropropane	52.3	2.5	50	0	105	70	130	47.91	8.8(20)	
Dibromochloromethane	52.6	2.5	50	0	105	42	155	46.89	11.4(20)	
1,2-Dibromoethane (EDB)	104	5	100	0	104	70	130	96.32	7.8(20)	
Tetrachloroethene	52.4	2.5	50	0	105	65	130	48.67	7.3(20)	
1,1,1,2-Tetrachloroethane	53.8	2.5	50	0	108	70	130	48.81	9.8(20)	
Chlorobenzene	50	2.5	50	0	100	70	130	46.16	8.0(20)	
Ethylbenzene	49.4	1.3	50	0	99	68	130	45.93	7.3(20)	
m,p-Xylene	51	1.3	50	0	102	68	131	46.76	8.6(20)	
Bromoform	46.6	2.5	50	0	93	65	143	41.71	11.1(20)	
Styrene	50.2	2.5	50	0	100	59	153	47.01	6.6(37)	
o-Xylene	49.9	1.3	50	0	99.8	70	130	46.8	6.4(20)	
1,1,2,2-Tetrachloroethane	47.8	2.5	50	0	96	67	130	43.11	10.4(20)	
1,2,3-Trichloropropane	94.5	10	100	0	94	70	130	89.01	6.0(20)	
Isopropylbenzene	50.7	2.5	50	0	101	55	138	47	7.6(20)	
Bromobenzene	48.3	2.5	50	0	97	70	130	44.63	7.9(20)	
n-Propylbenzene	50.7	2.5	50	0	101	67	133	47.32	6.9(30)	
4-Chlorotoluene	51.8	2.5	50	0	104	70	130	48.64	6.4(20)	
2-Chlorotoluene	49.5	2.5	50	0	99	70	130	46.11	7.1(20)	
1,3,5-Trimethylbenzene	51.3	2.5	50	0	103	67	134	48.03	6.6(21)	
tert-Butylbenzene	50.5	2.5	50	0	101	55	147	46.68	7.8(20)	
1,2,4-Trimethylbenzene	51.5	2.5	50	0	103	65	135	47.98	7.1(25)	
sec-Butylbenzene	51.3	2.5	50	0	103	68	135	47.93	6.7(20)	
1,3-Dichlorobenzene	52	2.5	50	0	104	70	130	48.51	6.9(20)	
1,4-Dichlorobenzene	49.3	2.5	50	0	99	70	130	45.69	7.6(20)	
4-Isopropyltoluene	52.9	2.5	50	0	106	68	132	48.55	8.5(20)	
1,2-Dichlorobenzene	49	2.5	50	0	98	70	130	44.51	9.5(20)	
n-Butylbenzene	55.4	2.5	50	0	111	62	134	50.31	9.7(21)	
1,2-Dibromo-3-chloropropane (DBCP)	235	15	250	0	94	64	130	207	12.5(20)	
1,2,4-Trichlorobenzene	55.5	10	50	0	111	62	133	49.16	12.1(29)	
Naphthalene	42.1	10	50	0	84	32	166	37.05	12.8(40)	
Hexachlorobutadiene	99.6	10	100	0	99.6	63	130	86.2	14.4(21)	
1,2,3-Trichlorobenzene	51.8	10	50	0	104	55	138	45	14.1(36)	
Surr: 1,2-Dichloroethane-d4	51.8		50		104	70	130			
Surr: Toluene-d8	51.6		50		103	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

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**Date:**

01-Mar-11

## QC Summary Report

**Work Order:**

11022404

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Surr: 4-Bromofluorobenzene	47.4	50	95	70	130
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**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**

**CA**

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

**WorkOrder : BMIS11022404**  
**Report Due By : 5:00 PM On : 09-Mar-2011**

**Client:** Battelle Memorial Institute  
 655 West Broadway  
 Suite 1420  
 San Diego, CA 92101  
 PO : 218013  
 Client's COC # : 33407

**Report Attention** Phone Number Email Address  
 David Conner (619) 726-7311 x connerd@battelle.org  
 Betsy Cutie (614) 424-4899 x cutiee@battelle.org  
 Shane Walton (614) 424-4117 x waltons@battelle.org

Job : G005862/JPL Groundwater Monitoring  
 QC Level : DSA = DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates  
 EDD Required : Yes  
 Sampled by : Chase Brogdon  
 Cooler Temp 0 °C Samples Received 24-Feb-2011 Date Printed 24-Feb-2011

Alpha Sample ID	Client Sample ID	Collection Date	No. of Bottles Alpha Sub TAT	Requested Tests				Sample Remarks
				314_W	METALS_D W	VOC_TIC_W	VOC_W	
BMI11022404-01A	MW-14-5	02/23/11 09:40	4 0 9	Perchlorate		VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI11022404-02A	MW-14-4	02/23/11 10:08	4 0 9	Perchlorate		VOC by 524 Criteria	VOC by 524 Criteria	
BMI11022404-03A	MW-14-3	02/23/11 10:42	5 0 9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11022404-04A	MW-14-2	02/23/11 11:20	5 0 9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11022404-05A	MW-14-1	02/23/11 12:05	5 0 9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11022404-06A	DUPE-02-1Q11	02/23/11 00:00	5 0 9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11022404-07A	EB-02-02/23/11	02/23/11 11:46	5 0 9	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11022404-08A	TB-02-02/23/11	02/23/11 07:00	1 0 9			VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 12/14/10

**Comments:** Security seals intact. Frozen ice. Temp Blank #9004 received @ 0 °C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

Logged in by: Elizabeth Adcox Signature: [Signature] Print Name: Elizabeth Adcox Company: Alpha Analytical, Inc. Date/Time: 2-24-11 10:20

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. 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:**

Company Name BATTELLE  
 Attn: GEOFF TOMPKINS  
 Address 505 KINK AVE.  
 City, State, Zip COLUMBUS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406

Samples Collected From Which State?  
 AZ \_\_\_\_\_ CA  NV \_\_\_\_\_ WA \_\_\_\_\_  
 ID \_\_\_\_\_ OR \_\_\_\_\_ OTHER \_\_\_\_\_  
 Page # 1 of 1

33407

Analyses Required

Data Validation Level: III or IV

Consultant / Client Name: EDITELLE / DAVID CANNEN Job # 5005862 Job Name SPL GEN. MON. 1011  
 Address: 3990 OLD TOWN AVE C-205 Report Attention / Project Manager DAVID CANNEN  
 City, State, Zip: OH OH 92110 Name: DAVID CANNEN  
 Email: DAVID.CANNEN@BATTELLE.COM  
 P.O. # 218013 Fax: 614-458-6644 Mobile: 614-726-7311

Time Sampled	Date Sampled	Matrix* See Key Below	P.O. #	Lab ID Number (Use Only)	Office (Use Only)	Sample Description	TAT	Field Filtered	# Containers**	Analyses Required	REMARKS
0940	2/23/11	AA		BME110224401		MW-14-5			3v 1p	X	QC LEVEL IV
1008	1/1					MW-14-4			3v 1p	X	
1042	1/1					MW-14-3			3v 2p	X	
1120	1/1					MW-14-2				X	
1005/0424/11						MW-14-1				X	
+						Duplicate - 1011				X	Duplicate
1146	1/1					EB-02-02/23/11			3v 2p	X	Equip. Blank
0700	2/23/11	AA				EB-02-02/23/11			1v	X	TRIP. BLANK
ONLY											

**ADDITIONAL INSTRUCTIONS:**

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action (NAC 445.0636 (c) (2)). Sampled By: CHASE BLOOMER

Relinquished by: (Signature/Affiliation)	<u>[Signature]</u>	Received by: (Signature/Affiliation)	<u>[Signature]</u>	Date:	<u>2/23/11</u>	Time:	<u>1230</u>
Relinquished by: (Signature/Affiliation)	<u>[Signature]</u>	Received by: (Signature/Affiliation)	<u>[Signature]</u>	Date:	<u>2-24-11</u>	Time:	<u>1020</u>
Relinquished by: (Signature/Affiliation)	<u>[Signature]</u>	Received by: (Signature/Affiliation)	<u>[Signature]</u>	Date:		Time:	

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\* L-Liter V-Voa S-Soil Jar O-Ortho 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 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.



# Alpha Analytical, Inc.

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

Date 01-Mar-11

David Conner  
Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
(619) 726-7311

Suite 1420

## CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring

Work Order: BMI11022501

Cooler Temp: 1 °C

Alpha's Sample ID	Client's Sample ID	Matrix
11022501-01A	MW-18-5	Aqueous
11022501-02A	MW-18-4	Aqueous
11022501-03A	MW-18-3	Aqueous
11022501-04A	MW-18-2	Aqueous
11022501-05A	DUPE-03-1Q11	Aqueous
11022501-06A	EB-03-2/24/11	Aqueous
11022501-07A	TB-03-2/24/11	Aqueous

### 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*      *Randy Gardner*      *Walter Hinchman*

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 • (714) 386-2901 / 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.



# Alpha Analytical, Inc.

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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 02/25/11

Job: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography  
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-18-5</b> Lab ID : BMII1022501-01A Perchlorate Date Sampled 02/24/11 10:08	ND	1.00 µg/L	02/25/11 10:30	02/25/11 16:58
Client ID: <b>MW-18-4</b> Lab ID : BMII1022501-02A Perchlorate Date Sampled 02/24/11 10:45	46.8	1.00 µg/L	02/25/11 10:30	02/25/11 17:16
Client ID: <b>MW-18-3</b> Lab ID : BMII1022501-03A Perchlorate Date Sampled 02/24/11 11:26	53.5	1.00 µg/L	02/25/11 10:30	02/25/11 17:34
Client ID: <b>MW-18-2</b> Lab ID : BMII1022501-04A Perchlorate Date Sampled 02/24/11 12:04	ND	1.00 µg/L	02/25/11 10:30	02/25/11 17:53
Client ID: <b>DUPE-03-1Q11</b> Lab ID : BMII1022501-05A Perchlorate Date Sampled 02/24/11 00:00	54.2	1.00 µg/L	02/25/11 10:30	02/25/11 18:11
Client ID: <b>EB-03-2/24/11</b> Lab ID : BMII1022501-06A Perchlorate Date Sampled 02/24/11 11:47	ND	1.00 µg/L	02/25/11 10:30	02/25/11 18:30

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / info@alpha-analytical.com

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*PS*

3/9/11

Report Date





# Alpha Analytical, Inc.

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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 02/25/11

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-18-4</b>				
Lab ID : BMII1022501-02A Chromium (Cr)	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:30
Date Sampled 02/24/11 10:45				
Client ID: <b>MW-18-3</b>				
Lab ID : BMII1022501-03A Chromium (Cr)	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:36
Date Sampled 02/24/11 11:26				
Client ID: <b>MW-18-2</b>				
Lab ID : BMII1022501-04A Chromium (Cr)	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:42
Date Sampled 02/24/11 12:04				
Client ID: <b>DUPE-03-1Q11</b>				
Lab ID : BMII1022501-05A Chromium (Cr)	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:47
Date Sampled 02/24/11 00:00				
Client ID: <b>EB-03-2/24/11</b>				
Lab ID : BMII1022501-06A Chromium (Cr)	ND	0.0050 mg/L	02/28/11 09:47	03/02/11 15:53
Date Sampled 02/24/11 11:47				

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 • (714) 386-2901 / info@alpha-analytical.com

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3/9/11

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

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

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID : <b>MW-18-5</b>					
Lab ID : BM111022501-01A	Sulfur dioxide	5.0	2.0 µg/L	02/28/11 17:28	02/28/11 17:28
Date Received : 02/25/11					
Date Sampled : 02/24/11 10:08					
Client ID : <b>MW-18-4</b>					
Lab ID : BM111022501-02A	Sulfur dioxide	4.5	2.0 µg/L	02/28/11 17:49	02/28/11 17:49
Date Received : 02/25/11					
Date Sampled : 02/24/11 10:45					
Client ID : <b>MW-18-3</b>					
Lab ID : BM111022501-03A	Sulfur dioxide	3.8	2.0 µg/L	02/28/11 18:11	02/28/11 18:11
Date Received : 02/25/11					
Date Sampled : 02/24/11 11:26					
Client ID : <b>MW-18-2</b>					
Lab ID : BM111022501-04A	*** None Found ***	ND	2.0 µg/L	02/28/11 18:32	02/28/11 18:32
Date Received : 02/25/11					
Date Sampled : 02/24/11 12:04					
Client ID : <b>DUPE-03-1Q11</b>					
Lab ID : BM111022501-05A	Sulfur dioxide	2.6	2.0 µg/L	02/28/11 18:54	02/28/11 18:54
Date Received : 02/25/11					
Date Sampled : 02/24/11 00:00					
Client ID : <b>EB-03-2/24/11</b>					
Lab ID : BM111022501-06A	*** None Found ***	ND	2.0 µg/L	02/28/11 13:09	02/28/11 13:09
Date Received : 02/25/11					
Date Sampled : 02/24/11 11:47					
Client ID : <b>TB-03-2/24/11</b>					
Lab ID : BM111022501-07A	*** None Found ***	ND	2.0 µg/L	02/28/11 12:47	02/28/11 12:47
Date Received : 02/25/11					
Date Sampled : 02/24/11 07:00					



# Alpha Analytical, Inc.

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---

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer  
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Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

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*JAG*  
3/9/11

**Report Date**

Page 1 of 1



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022501-01A  
Client I.D. Number: MW-18-5

Sampled: 02/24/11 10:08  
Received: 02/25/11  
Extracted: 02/28/11 17:28  
Analyzed: 02/28/11 17:28

### 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	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	Q 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 (DBCP)	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	Q 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	110	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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

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 • (714) 386-2901 / 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.

3/9/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022501-02A  
Client I.D. Number: MW-18-4

Sampled: 02/24/11 10:45  
Received: 02/25/11  
Extracted: 02/28/11 17:49  
Analyzed: 02/28/11 17:49

### 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	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	Q 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	2.4	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	12	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	1.5	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	Q 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	99	(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			
35 Tetrachloroethene	0.64	0.50 µg/L			

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

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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3/9/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022501-03A  
Client I.D. Number: MW-18-3

Sampled: 02/24/11 11:26  
Received: 02/25/11  
Extracted: 02/28/11 18:11  
Analyzed: 02/28/11 18:11

### 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	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	Q 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	1.3	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	6.6	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.58	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	Q 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	112	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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

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

3/9/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022501-04A  
Client I.D. Number: MW-18-2

Sampled: 02/24/11 12:04  
Received: 02/25/11  
Extracted: 02/28/11 18:32  
Analyzed: 02/28/11 18:32

### 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	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	Q 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 (DBCP)	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	Q 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	110	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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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3/9/11

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022501-05A  
Client I.D. Number: DUPE-03-1Q11

Sampled: 02/24/11 00:00  
Received: 02/25/11  
Extracted: 02/28/11 18:54  
Analyzed: 02/28/11 18:54

### 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	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	Q 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	7.4	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.68	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	ND	0.50 µg/L	61 Naphthalene	ND	Q 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	112	(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	93	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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

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 • (714) 386-2901 / info@alpha-analytical.com

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

3/9/11

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.





# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022501-06A  
Client I.D. Number: EB-03-2/24/11

Sampled: 02/24/11 11:47  
Received: 02/25/11  
Extracted: 02/28/11 13:09  
Analyzed: 02/28/11 13:09

### 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	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	Q 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 (DBCP)	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	Q 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	107	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	103	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	95	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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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Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 736-7522 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com

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

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3/9/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11022501-07A  
Client I.D. Number: TB-03-2/24/11

Sampled: 02/24/11 07:00  
Received: 02/25/11  
Extracted: 02/28/11 12:47  
Analyzed: 02/28/11 12:47

### 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	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	Q 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 (DBCP)	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	Q 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	101	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	96	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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.

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3/9/11

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

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## VOC Sample Preservation Report

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**Work Order:** BMI11022501

**Job:** G005862/JPL Groundwater Monitoring

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Alpha's Sample ID	Client's Sample ID	Matrix	pH
11022501-01A	MW-18-5	Aqueous	2
11022501-02A	MW-18-4	Aqueous	2
11022501-03A	MW-18-3	Aqueous	2
11022501-04A	MW-18-2	Aqueous	2
11022501-05A	DUPE-03-1Q11	Aqueous	2
11022501-06A	EB-03-2/24/11	Aqueous	2
11022501-07A	TB-03-2/24/11	Aqueous	2

---

3/9/11  
**Report Date**



# Alpha Analytical, Inc.

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## QC Summary Report

Date:  
08-Mar-11

Work Order:  
11022501

### Method Blank

Type: MBLK Test Code: EPA Method 314.0

File ID: 14	Units : µg/L	Run ID: IC_3_110225A	Batch ID: 26061	Analysis Date: 02/25/2011 11:26
Sample ID: MB-26061	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Analyte	ND	1		
Perchlorate				

### Laboratory Fortified Blank

Type: LFB Test Code: EPA Method 314.0

File ID: 15	Units : µg/L	Run ID: IC_3_110225A	Batch ID: 26061	Analysis Date: 02/25/2011 11:45
Sample ID: LFB-26061	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Analyte	25.4	2	25	102 85 115
Perchlorate				

### Sample Matrix Spike

Type: LFM Test Code: EPA Method 314.0

File ID: 18	Units : µg/L	Run ID: IC_3_110225A	Batch ID: 26061	Analysis Date: 02/25/2011 12:40
Sample ID: 11022404-01ALFM	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Analyte	24.3	2	25	0 97 80 120
Perchlorate				

### Sample Matrix Spike Duplicate

Type: LFMD Test Code: EPA Method 314.0

File ID: 19	Units : µg/L	Run ID: IC_3_110225A	Batch ID: 26061	Analysis Date: 02/25/2011 12:58
Sample ID: 11022404-01ALFMD	Result	PQL	SpkVal	SpkRefVal %REC LCL(ME) UCL(ME) RPDRefVal %RPD(Limit) Qual
Analyte	25	2	25	0 99.8 80 120 24.34 2.5(15)
Perchlorate				

### 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 Analytical, Inc.

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Date:  
07-Mar-11

## QC Summary Report

Work Order:  
11022501

### Method Blank

Type **MBLK** Test Code: **EPA Method 200.8**

File ID: 030211.B\021\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:04

Sample ID: MB-26067

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

Type **LCS** Test Code: **EPA Method 200.8**

File ID: 030211.B\022\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:09

Sample ID: LCS-26067

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0472	0.005	0.05		94	85	115			

### Sample Matrix Spike

Type **MS** Test Code: **EPA Method 200.8**

File ID: 030211.B\027\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:37

Sample ID: 11022504-01AMS

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0541	0.005	0.05		0	108	70	130		

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method 200.8**

File ID: 030211.B\028\_M.D\

Batch ID: 26067

Analysis Date: 03/02/2011 13:43

Sample ID: 11022504-01AMSD

Units : mg/L

Run ID: ICP/MS\_110302A

Prep Date: 02/28/2011 09:47

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0522	0.005	0.05		0	104	70	130	0.05408	3.6(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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Date:  
01-Mar-11

## QC Summary Report

Work Order:  
11022501

### Method Blank

Type **MBLK** Test Code: **EPA Method SW8260B**

File ID: **11022807.D**

Batch ID: **MS15W0228M**

Analysis Date: **02/28/2011 10:38**

Sample ID: **MBLK MS15W0228M**

Units: **µg/L**

Run ID: **MSD\_15\_110228B**

Prep Date: **02/28/2011 10:38**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
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	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)	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								
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	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								
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	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	1								
Surr: 1,2-Dichloroethane-d4	10.5		10		105	70	130			
Surr: Toluene-d8	10.3		10		103	70	130			



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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
01-Mar-11

## QC Summary Report

Work Order:  
11022501

Surr: 4-Bromofluorobenzene

9.52

10

95

70

130



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:

01-Mar-11

## QC Summary Report

Work Order:

11022501

### Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **11022803.D**

Batch ID: **MS15W0228M**

Analysis Date: **02/28/2011 09:01**

Sample ID: **LCS MS15W0228M**

Units: **µg/L**

Run ID: **MSD\_15\_110228B**

Prep Date: **02/28/2011 09:01**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	8.57	1	10		86	70	130			
Chloromethane	9.27	2	10		93	70	130			
Vinyl chloride	10.1	1	10		101	70	130			
Chloroethane	10.3	1	10		103	70	130			
Bromomethane	10.3	2	10		103	70	130			
Trichlorofluoromethane	10.8	1	10		108	70	130			
1,1-Dichloroethene	10.3	1	10		103	70	130			
Dichloromethane	9.03	2	10		90	70	130			
Freon-113	10.9	1	10		109	70	137			
trans-1,2-Dichloroethene	10.1	1	10		101	70	130			
Methyl tert-butyl ether (MTBE)	8.8	0.5	10		88	70	130			
1,1-Dichloroethane	10.2	1	10		102	70	130			
2-Butanone (MEK)	156	10	200		78	70	130			
cis-1,2-Dichloroethene	9.98	1	10		99.8	70	130			
Bromochloromethane	9.59	1	10		96	70	130			
Chloroform	9.95	1	10		100	70	130			
2,2-Dichloropropane	10.2	1	10		102	70	130			
1,2-Dichloroethane	9.99	1	10		99.9	70	130			
1,1,1-Trichloroethane	11.1	1	10		111	70	130			
1,1-Dichloropropene	10.9	1	10		109	70	130			
Carbon tetrachloride	9.73	1	10		97	70	130			
Benzene	9.45	0.5	10		95	70	130			
Dibromomethane	9.77	1	10		98	70	130			
1,2-Dichloropropane	9.59	1	10		96	70	130			
Trichloroethene	10.6	1	10		106	70	130			
Bromodichloromethane	10.5	1	10		105	70	130			
4-Methyl-2-pentanone (MIBK)	18.5	2.5	25		74	20	182			
cis-1,3-Dichloropropene	9.18	1	10		92	70	130			
trans-1,3-Dichloropropene	8.32	1	10		83	70	130			
1,1,2-Trichloroethane	8.98	1	10		90	70	130			
Toluene	9.85	0.5	10		99	70	130			
1,3-Dichloropropane	9.03	1	10		90	70	130			
Dibromochloromethane	9.45	1	10		95	70	130			
1,2-Dibromoethane (EDB)	18.6	2	20		93	70	130			
Tetrachloroethene	10.2	1	10		102	70	130			
1,1,1,2-Tetrachloroethane	10.5	1	10		105	70	130			
Chlorobenzene	9.84	1	10		98	70	130			
Ethylbenzene	10.2	0.5	10		102	70	130			
m,p-Xylene	10.2	0.5	10		102	70	130			
Bromoform	8.68	1	10		87	70	130			
Styrene	10.3	1	10		103	70	130			
o-Xylene	10.2	0.5	10		102	70	130			
1,1,2,2-Tetrachloroethane	8.69	1	10		87	70	130			
1,2,3-Trichloropropane	18.4	2	20		92	70	130			
Isopropylbenzene	10.3	1	10		103	70	130			
Bromobenzene	9.63	1	10		96	70	130			
n-Propylbenzene	10.3	1	10		103	70	130			
4-Chlorotoluene	10.5	1	10		105	70	130			
2-Chlorotoluene	10.2	1	10		102	70	130			
1,3,5-Trimethylbenzene	10.7	1	10		107	70	130			
tert-Butylbenzene	10.2	1	10		102	70	130			
1,2,4-Trimethylbenzene	10.7	1	10		107	70	130			
sec-Butylbenzene	10.3	1	10		103	70	130			
1,3-Dichlorobenzene	10.5	1	10		105	70	130			
1,4-Dichlorobenzene	9.83	1	10		98	70	130			
4-Isopropyltoluene	10.6	1	10		106	70	130			
1,2-Dichlorobenzene	9.42	1	10		94	70	130			
n-Butylbenzene	10.9	1	10		109	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	40.7	3	50		81	67	130			
1,2,4-Trichlorobenzene	10.1	2	10		101	70	130			
Naphthalene	7.88	2	10		79	70	130			
Hexachlorobutadiene	17.9	2	20		89	70	130			
1,2,3-Trichlorobenzene	9.7	2	10		97	70	130			
Surr: 1,2-Dichloroethane-d4	10.6		10		106	70	130			
Surr: Toluene-d8	9.76		10		98	70	130			





# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**

01-Mar-11

## QC Summary Report

**Work Order:**

11022501

Surr: 4-Bromofluorobenzene

9.69

10

97

70

130



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:

01-Mar-11

## QC Summary Report

Work Order:

11022501

### Sample Matrix Spike

File ID: 11022808.D

Type MS

Test Code: EPA Method SW8260B

Sample ID: 11022404-01AMS

Units: µg/L

Batch ID: MS15W0228M

Analysis Date: 02/28/2011 11:00

Run ID: MSD\_15\_110228B

Prep Date: 02/28/2011 11:00

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	36.1	2.5	50	0	72	21	138			
Chloromethane	44	10	50	0	88	23	144			
Vinyl chloride	47.5	2.5	50	0	95	49	136			
Chloroethane	49.8	2.5	50	0	99.6	21	159			
Bromomethane	41.1	10	50	0	82	10	174			
Trichlorofluoromethane	52.9	2.5	50	0	106	32	154			
1,1-Dichloroethene	47.7	2.5	50	0	95	64	130			
Dichloromethane	42.7	10	50	0	85	69	130			
Freon-113	49	2.5	50	0	98	55	141			
trans-1,2-Dichloroethene	45.7	2.5	50	0	91	63	130			
Methyl tert-butyl ether (MTBE)	46.5	1.3	50	0	93	47	150			
1,1-Dichloroethane	47.3	2.5	50	0	95	66	130			
2-Butanone (MEK)	685	50	1000	0	69	23	182			
cis-1,2-Dichloroethene	47.7	2.5	50	0	95	70	130			
Bromochloromethane	46.8	2.5	50	0	94	70	132			
Chloroform	44.9	2.5	50	0	90	70	130			
2,2-Dichloropropane	48.6	2.5	50	0	97	38	154			
1,2-Dichloroethane	47.6	2.5	50	0	95	65	134			
1,1,1-Trichloroethane	49.9	2.5	50	0	99.7	65	136			
1,1-Dichloropropene	49.4	2.5	50	0	99	68	132			
Carbon tetrachloride	44.8	2.5	50	0	90	58	148			
Benzene	43.4	1.3	50	0	87	59	138			
Dibromomethane	45.9	2.5	50	0	92	70	130			
1,2-Dichloropropane	44.8	2.5	50	0	90	70	131			
Trichloroethene	47.4	2.5	50	0	95	65	144			
Bromodichloromethane	48.1	2.5	50	0	96	50	157			
4-Methyl-2-pentanone (MIBK)	94.3	13	125	0	75	20	182			
cis-1,3-Dichloropropene	41.7	2.5	50	0	83	63	131			
trans-1,3-Dichloropropene	38.1	2.5	50	0	76	65	136			
1,1,2-Trichloroethane	42.9	2.5	50	0	86	70	131			
Toluene	47.5	1.3	50	0	95	68	130			
1,3-Dichloropropane	47.9	2.5	50	0	96	70	130			
Dibromochloromethane	46.9	2.5	50	0	94	42	155			
1,2-Dibromoethane (EDB)	96.3	5	100	0	96	70	130			
Tetrachloroethene	48.7	2.5	50	0	97	65	130			
1,1,1,2-Tetrachloroethane	48.8	2.5	50	0	98	70	130			
Chlorobenzene	46.2	2.5	50	0	92	70	130			
Ethylbenzene	45.9	1.3	50	0	92	68	130			
m,p-Xylene	46.8	1.3	50	0	94	68	131			
Bromoform	41.7	2.5	50	0	83	65	143			
Styrene	47	2.5	50	0	94	59	153			
o-Xylene	46.8	1.3	50	0	94	70	130			
1,1,2,2-Tetrachloroethane	43.1	2.5	50	0	86	67	130			
1,2,3-Trichloropropane	89	10	100	0	89	70	130			
Isopropylbenzene	47	2.5	50	0	94	55	138			
Bromobenzene	44.6	2.5	50	0	89	70	130			
n-Propylbenzene	47.3	2.5	50	0	95	67	133			
4-Chlorotoluene	48.6	2.5	50	0	97	70	130			
2-Chlorotoluene	46.1	2.5	50	0	92	70	130			
1,3,5-Trimethylbenzene	48	2.5	50	0	96	67	134			
tert-Butylbenzene	46.7	2.5	50	0	93	55	147			
1,2,4-Trimethylbenzene	48	2.5	50	0	96	65	135			
sec-Butylbenzene	47.9	2.5	50	0	96	68	135			
1,3-Dichlorobenzene	48.5	2.5	50	0	97	70	130			
1,4-Dichlorobenzene	45.7	2.5	50	0	91	70	130			
4-Isopropyltoluene	48.6	2.5	50	0	97	68	132			
1,2-Dichlorobenzene	44.5	2.5	50	0	89	70	130			
n-Butylbenzene	50.3	2.5	50	0	101	62	134			
1,2-Dibromo-3-chloropropane (DBCP)	207	15	250	0	83	64	130			
1,2,4-Trichlorobenzene	49.2	10	50	0	98	62	133			
Naphthalene	37.1	10	50	0	74	32	166			
Hexachlorobutadiene	86.2	10	100	0	86	63	130			
1,2,3-Trichlorobenzene	45	10	50	0	90	55	138			
Surr: 1,2-Dichloroethane-d4	51.6		50		103	70	130			
Surr: Toluene-d8	51.4		50		103	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**

01-Mar-11

## QC Summary Report

**Work Order:**

11022501

Surr: 4-Bromofluorobenzene

47.4

50

95

70

130



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
01-Mar-11

## QC Summary Report

Work Order:  
11022501

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **11022809.D**

Batch ID: **MS15W0228M**

Analysis Date: **02/28/2011 11:21**

Sample ID: **11022404-01AMSD**

Units: **µg/L**

Run ID: **MSD\_15\_110228B**

Prep Date: **02/28/2011 11:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	40.1	2.5	50	0	80	21	138	36.09	10.4(33)	
Chloromethane	47.9	10	50	0	96	23	144	44.04	8.3(27)	
Vinyl chloride	50.9	2.5	50	0	102	49	136	47.49	7.0(21)	
Chloroethane	54.7	2.5	50	0	109	21	159	49.78	9.4(40)	
Bromomethane	48.3	10	50	0	97	10	174	41.1	16.2(40)	
Trichlorofluoromethane	56.4	2.5	50	0	113	32	154	52.93	6.3(37)	
1,1-Dichloroethene	52.2	2.5	50	0	104	64	130	47.7	8.9(21)	
Dichloromethane	45.5	10	50	0	91	69	130	42.74	6.2(20)	
Freon-113	53.5	2.5	50	0	107	55	141	48.98	8.8(40)	
trans-1,2-Dichloroethene	50.1	2.5	50	0	100	63	130	45.65	9.3(20)	
Methyl tert-butyl ether (MTBE)	51.1	1.3	50	0	102	47	150	46.48	9.4(40)	
1,1-Dichloroethane	51.1	2.5	50	0	102	66	130	47.26	7.8(20)	
2-Butanone (MEK)	726	50	1000	0	73	23	182	685.2	5.8(22)	
cis-1,2-Dichloroethene	52.2	2.5	50	0	104	70	130	47.67	9.1(20)	
Bromochloromethane	51	2.5	50	0	102	70	132	46.84	8.5(20)	
Chloroform	48.6	2.5	50	0	97	70	130	44.86	8.0(20)	
2,2-Dichloropropane	55.9	2.5	50	0	112	38	154	48.61	14.0(22)	
1,2-Dichloroethane	51.2	2.5	50	0	102	65	134	47.62	7.2(20)	
1,1,1-Trichloroethane	54.7	2.5	50	0	109	65	136	49.86	9.2(20)	
1,1-Dichloropropene	54.1	2.5	50	0	108	68	132	49.4	9.0(20)	
Carbon tetrachloride	51	2.5	50	0	102	58	148	44.75	13.1(20)	
Benzene	47.7	1.3	50	0	95	59	138	43.39	9.6(21)	
Dibromomethane	50.4	2.5	50	0	101	70	130	45.9	9.3(20)	
1,2-Dichloropropane	50.1	2.5	50	0	100	70	131	44.75	11.2(20)	
Trichloroethene	51.5	2.5	50	0	103	65	144	47.37	8.4(20)	
Bromodichloromethane	53	2.5	50	0	106	50	157	48.05	9.8(20)	
4-Methyl-2-pentanone (MIBK)	106	13	125	0	85	20	182	94.33	11.8(20)	
cis-1,3-Dichloropropene	46.4	2.5	50	0	93	63	131	41.7	10.7(20)	
trans-1,3-Dichloropropene	43.5	2.5	50	0	87	65	136	38.1	13.1(20)	
1,1,2-Trichloroethane	47	2.5	50	0	94	70	131	42.94	9.1(20)	
Toluene	52.2	1.3	50	0	104	68	130	47.48	9.4(20)	
1,3-Dichloropropane	52.3	2.5	50	0	105	70	130	47.91	8.8(20)	
Dibromochloromethane	52.6	2.5	50	0	105	42	155	46.89	11.4(20)	
1,2-Dibromoethane (EDB)	104	5	100	0	104	70	130	96.32	7.8(20)	
Tetrachloroethene	52.4	2.5	50	0	105	65	130	48.67	7.3(20)	
1,1,1,2-Tetrachloroethane	53.8	2.5	50	0	108	70	130	48.81	9.8(20)	
Chlorobenzene	50	2.5	50	0	100	70	130	46.16	8.0(20)	
Ethylbenzene	49.4	1.3	50	0	99	68	130	45.93	7.3(20)	
m,p-Xylene	51	1.3	50	0	102	68	131	46.76	8.6(20)	
Bromoform	46.6	2.5	50	0	93	65	143	41.71	11.1(20)	
Styrene	50.2	2.5	50	0	100	59	153	47.01	6.6(37)	
o-Xylene	49.9	1.3	50	0	99.8	70	130	46.8	6.4(20)	
1,1,2,2-Tetrachloroethane	47.8	2.5	50	0	96	67	130	43.11	10.4(20)	
1,2,3-Trichloropropane	94.5	10	100	0	94	70	130	89.01	6.0(20)	
Isopropylbenzene	50.7	2.5	50	0	101	55	138	47	7.6(20)	
Bromobenzene	48.3	2.5	50	0	97	70	130	44.63	7.9(20)	
n-Propylbenzene	50.7	2.5	50	0	101	67	133	47.32	6.9(30)	
4-Chlorotoluene	51.8	2.5	50	0	104	70	130	48.64	6.4(20)	
2-Chlorotoluene	49.5	2.5	50	0	99	70	130	46.11	7.1(20)	
1,3,5-Trimethylbenzene	51.3	2.5	50	0	103	67	134	48.03	6.6(21)	
tert-Butylbenzene	50.5	2.5	50	0	101	55	147	46.68	7.8(20)	
1,2,4-Trimethylbenzene	51.5	2.5	50	0	103	65	135	47.98	7.1(25)	
sec-Butylbenzene	51.3	2.5	50	0	103	68	135	47.93	6.7(20)	
1,3-Dichlorobenzene	52	2.5	50	0	104	70	130	48.51	6.9(20)	
1,4-Dichlorobenzene	49.3	2.5	50	0	99	70	130	45.69	7.6(20)	
4-Isopropyltoluene	52.9	2.5	50	0	106	68	132	48.55	8.5(20)	
1,2-Dichlorobenzene	49	2.5	50	0	98	70	130	44.51	9.5(20)	
n-Butylbenzene	55.4	2.5	50	0	111	62	134	50.31	9.7(21)	
1,2-Dibromo-3-chloropropane (DBCP)	235	15	250	0	94	64	130	207	12.5(20)	
1,2,4-Trichlorobenzene	55.5	10	50	0	111	62	133	49.16	12.1(29)	
Naphthalene	42.1	10	50	0	84	32	166	37.05	12.8(40)	
Hexachlorobutadiene	99.6	10	100	0	99.6	63	130	86.2	14.4(21)	
1,2,3-Trichlorobenzene	51.8	10	50	0	104	55	138	45	14.1(36)	
Surr: 1,2-Dichloroethane-d4	51.8		50		104	70	130			
Surr: Toluene-d8	51.6		50		103	70	130			



# Alpha Analytical, Inc.

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

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## QC Summary Report

Date:  
01-Mar-11

Work Order:  
11022501

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Surr: 4-Bromofluorobenzene	47.4	50	95	70	130
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**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**

**CA**

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

**WorkOrder : BMIS11022501**  
**Report Due By : 5:00 PM On : 10-Mar-2011**

**Client:** Battelle Memorial Institute  
 655 West Broadway  
 Suite 1420  
 San Diego, CA 92101  
 PO : 218013  
 Client's COC # : 33406

**Report Attention** Phone Number Email Address  
 David Conner (619) 726-7311 x connerd@battelle.org  
 Betsy Cutie (614) 424-4899 x cutiee@battelle.org  
 Shane Walton (614) 424-4117 x waltonsb@battelle.org

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

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles			Requested Tests		Sample Remarks	
			Alpha	Sub	TAT	314_W	METALS_D W		VOC_TIC_W
BM11022501-01A	MW-18-5	AQ 02/24/11 10:08	4	0	9	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BM11022501-02A	MW-18-4	AQ 02/24/11 10:45	5	0	9	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022501-03A	MW-18-3	AQ 02/24/11 11:26	5	0	9	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022501-04A	MW-18-2	AQ 02/24/11 12:04	5	0	9	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022501-05A	DUPE-03-1Q11	AQ 02/24/11 00:00	5	0	9	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022501-06A	EB-03-2/24/11	AQ 02/24/11 11:47	5	0	9	Perchlorate	VOC by 524 Criteria	VOC by 524 Criteria	
BM11022501-07A	TB-03-2/24/11	AQ 02/24/11 07:00	1	0	9		VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 12/14/10

**Comments:** Security seals intact. Frozen ice. Temp Blank #8648 received @ 1°C. Level IV QC. Samples should be used as the control spike sample if possible (IE. MS/MSD).

Logged in by: Elizabeth Aldcox Signature: Elizabeth Aldcox Print Name: Elizabeth Aldcox Company: Alpha Analytical, Inc. Date/Time: 2-25-11 12:14

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.  
 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:** BATTELLE

Company Name OSWALD TOMPKINS  
 Attn: SOS KINL AVE  
 Address COLUMBUS OT, 43201  
 City, State, Zip COLUMBUS OH, 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406

**Samples Collected From Which State?**  
 AZ \_\_\_\_\_ CA  NV \_\_\_\_\_ WA \_\_\_\_\_  
 ID \_\_\_\_\_ OR \_\_\_\_\_ OTHER \_\_\_\_\_

**DOD Site**  
 Page # 1 of 1

33406

Analyses Required

Data Validation  
 Level: III or IV

EDP/EDF? YES  NO \_\_\_\_\_  
 Global ID # \_\_\_\_\_

REMARKS

Sampled	Date Sampled	Matrix* See Key Below	P.O. #	Lab ID Number (Use Only)	Office (Use Only)	Sample Description	TAT	Field Filtered	# Containers**	Analyses Required	REMARKS
1008	3/24/11	NR	218013	BMT11D22501-01		MW-18-5			3v 1p	<input checked="" type="checkbox"/>	DELETED TL
1095	1/12/11					MW-18-4			3v 2p	<input checked="" type="checkbox"/>	
1126	1/12/11					MW-18-3			3v 2p	<input checked="" type="checkbox"/>	
1204	1/12/11					MW-18-2			3v 2p	<input checked="" type="checkbox"/>	
1142	1/14/11					DUPE - 03-1811			3v 2p	<input checked="" type="checkbox"/>	DUPLICATE
0700	7/24/11	AQ				07-TR-03-2/24/11			1v	<input checked="" type="checkbox"/>	EQUIP. BLANK TRAP BLANK
ONLY											

**ADDITIONAL INSTRUCTIONS:**

1. (field sampler), attest to the validity and authenticity of this sample. Be aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action (NAC 445.0636 (c) (2)). Sampled By: DAVID CONNER

Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date:	Time:
<u>[Signature]</u>	<u>[Signature]</u>	2/24/11	1305
<u>[Signature]</u>	<u>[Signature]</u>	2-25-11	1214

\*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 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.



# Alpha Analytical, Inc.

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

Date 04-Mar-11

David Conner  
Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
(619) 726-7311

Suite 1420

## CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring

Work Order: BMI11030145

Cooler Temp: 1 °C

Alpha's Sample ID	Client's Sample ID	Matrix
11030145-01A	MW-17-4	Aqueous
11030145-02A	MW-17-3	Aqueous
11030145-03A	MW-17-2	Aqueous
11030145-04A	EB-04-02/25/11	Aqueous
11030145-05A	TB-04-02/25/11	Aqueous
11030145-06A	MW-24-4	Aqueous
11030145-07A	MW-24-3	Aqueous
11030145-08A	MW-24-2	Aqueous
11030145-09A	MW-24-1	Aqueous
11030145-10A	EB-05-02/28/11	Aqueous
11030145-11A	TB-05-02/28/11	Aqueous

### Manually Integrated Analytes

<u>Alpha's Sample ID</u>	<u>Test Reference</u>	<u>Analyte</u>
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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*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / 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.





# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/01/11

Job: G005862/JPL Groundwater Monitoring

Anions by IC  
EPA Method 300.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-24-1				
Lab ID: BM11030145-09A Chloride	74	50 mg/L	03/02/11 09:55	03/02/11 14:53
Date Sampled 02/28/11 10:44 Nitrite (NO2) - N	ND	0.25 mg/L	03/02/11 09:55	03/02/11 10:34
Nitrate (NO3) - N	1.3	0.25 mg/L	03/02/11 09:55	03/02/11 10:34
Phosphate, ortho - P	ND	0.50 mg/L	03/02/11 09:55	03/02/11 10:34
Sulfate (SO4)	51	0.50 mg/L	03/02/11 09:55	03/02/11 10:34

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

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3/1/11

Report Date



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/01/11

Job: G005862/JPL Groundwater Monitoring

### Perchlorate by Ion Chromatography EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-17-4</b> Lab ID : BMII1030145-01A Perchlorate Date Sampled 02/25/11 09:15	3.82	1.00 µg/L	03/02/11 12:21	03/02/11 12:34
Client ID: <b>MW-17-3</b> Lab ID : BMII1030145-02A Perchlorate Date Sampled 02/25/11 09:48	8.48	1.00 µg/L	03/02/11 12:21	03/02/11 12:52
Client ID: <b>MW-17-2</b> Lab ID : BMII1030145-03A Perchlorate Date Sampled 02/25/11 10:34	24.1	1.00 µg/L	03/02/11 12:21	03/02/11 13:11
Client ID: <b>EB-04-02/25/11</b> Lab ID : BMII1030145-04A Perchlorate Date Sampled 02/25/11 10:14	ND	1.00 µg/L	03/02/11 12:21	03/02/11 14:06
Client ID: <b>MW-24-3</b> Lab ID : BMII1030145-07A Perchlorate Date Sampled 02/28/11 09:29	ND	1.00 µg/L	03/02/11 12:21	03/02/11 14:25
Client ID: <b>MW-24-2</b> Lab ID : BMII1030145-08A Perchlorate Date Sampled 02/28/11 09:57	14.0	1.00 µg/L	03/02/11 12:21	03/02/11 14:43
Client ID: <b>MW-24-1</b> Lab ID : BMII1030145-09A Perchlorate Date Sampled 02/28/11 10:44	14.3	1.00 µg/L	03/02/11 12:21	03/02/11 15:01
Client ID: <b>EB-05-02/28/11</b> Lab ID : BMII1030145-10A Perchlorate Date Sampled 02/28/11 10:29	ND	1.00 µg/L	03/02/11 12:21	03/02/11 15:20

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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

3/11/11

Report Date



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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/01/11

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-17-4</b> Lab ID : BMII1030145-01A Chromium (Cr) Date Sampled 02/25/11 09:15	ND	0.0050 mg/L	03/02/11 09:08	03/16/11 16:52
Client ID: <b>MW-17-3</b> Lab ID : BMII1030145-02A Chromium (Cr) Date Sampled 02/25/11 09:48	ND	0.0050 mg/L	03/02/11 09:08	03/16/11 16:57
Client ID: <b>MW-17-2</b> Lab ID : BMII1030145-03A Chromium (Cr) Date Sampled 02/25/11 10:34	ND	0.0050 mg/L	03/02/11 09:08	03/16/11 16:29
Client ID: <b>EB-04-02/25/11</b> Lab ID : BMII1030145-04A Chromium (Cr) Date Sampled 02/25/11 10:14	ND	0.0050 mg/L	03/02/11 09:08	03/16/11 17:03
Client ID: <b>MW-24-4</b> Lab ID : BMII1030145-06A Chromium (Cr) Date Sampled 02/28/11 08:56	ND	0.0050 mg/L	03/02/11 09:08	03/16/11 17:09
Client ID: <b>MW-24-3</b> Lab ID : BMII1030145-07A Chromium (Cr) Date Sampled 02/28/11 09:29	ND	0.0050 mg/L	03/02/11 09:08	03/17/11 09:03
Client ID: <b>MW-24-2</b> Lab ID : BMII1030145-08A Chromium (Cr) Date Sampled 02/28/11 09:57	ND	0.0050 mg/L	03/02/11 09:08	03/17/11 09:09
Client ID: <b>MW-24-1</b> Lab ID : BMII1030145-09A Chromium (Cr) Date Sampled 02/28/11 10:44	ND	0.0050 mg/L	03/02/11 09:08	03/17/11 09:15
Client ID: <b>EB-05-02/28/11</b> Lab ID : BMII1030145-10A Chromium (Cr) Date Sampled 02/28/11 10:29	ND	0.0050 mg/L	03/02/11 09:08	03/17/11 09:21



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---

This replaces the report signed 3/11/11. Samples were re-analyzed, due to lab error.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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*P*  
3/18/11

**Report Date**



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

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

Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-17-4</b>				
Lab ID: BMII1030145-01A	*** None Found ***	ND	2.0 µg/L	03/03/11 14:31 03/03/11 14:31
Date Received: 03/01/11				
Date Sampled: 02/25/11 09:15				
Client ID: <b>MW-17-3</b>				
Lab ID: BMII1030145-02A	*** None Found ***	ND	2.0 µg/L	03/03/11 14:52 03/03/11 14:52
Date Received: 03/01/11				
Date Sampled: 02/25/11 09:48				
Client ID: <b>MW-17-2</b>				
Lab ID: BMII1030145-03A	*** None Found ***	ND	2.0 µg/L	03/03/11 15:14 03/03/11 15:14
Date Received: 03/01/11				
Date Sampled: 02/25/11 10:34				
Client ID: <b>EB-04-02/25/11</b>				
Lab ID: BMII1030145-04A	*** None Found ***	ND	2.0 µg/L	03/03/11 13:26 03/03/11 13:26
Date Received: 03/01/11				
Date Sampled: 02/25/11 10:14				
Client ID: <b>TB-04-02/25/11</b>				
Lab ID: BMII1030145-05A	*** None Found ***	ND	2.0 µg/L	03/03/11 13:04 03/03/11 13:04
Date Received: 03/01/11				
Date Sampled: 02/25/11 07:00				
Client ID: <b>MW-24-3</b>				
Lab ID: BMII1030145-07A	Sulfur dioxide	3.7	2.0 µg/L	03/03/11 15:35 03/03/11 15:35
Date Received: 03/01/11				
Date Sampled: 02/28/11 09:29				
Client ID: <b>MW-24-2</b>				
Lab ID: BMII1030145-08A	Sulfur dioxide	4.2	2.0 µg/L	03/03/11 15:57 03/03/11 15:57
Date Received: 03/01/11				
Date Sampled: 02/28/11 09:57				
Client ID: <b>MW-24-1</b>				
Lab ID: BMII1030145-09A	Sulfur dioxide	5.7	2.0 µg/L	03/03/11 16:18 03/03/11 16:18
Date Received: 03/01/11				
Date Sampled: 02/28/11 10:44				
Client ID: <b>EB-05-02/28/11</b>				
Lab ID: BMII1030145-10A	*** None Found ***	ND	2.0 µg/L	03/03/11 14:09 03/03/11 14:09
Date Received: 03/01/11				
Date Sampled: 02/28/11 10:29				



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Client ID : **TB-05-02/28/11**  
Lab ID : BM111030145-11A    \*\*\* None Found \*\*\*    ND    2.0 µg/L    03/03/11 13:48    03/03/11 13:48  
Date Received : 03/01/11  
Date Sampled : 02/28/11 07:00

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  
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3/11/11

**Report Date**

Page 1 of 1



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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-01A  
Client I.D. Number: MW-17-4

Sampled: 02/25/11 09:15  
Received: 03/01/11  
Extracted: 03/03/11 14:31  
Analyzed: 03/03/11 14:31

### 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	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 (DBCP)	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	111	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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Report Date



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-02A  
Client I.D. Number: MW-17-3

Sampled: 02/25/11 09:48  
Received: 03/01/11  
Extracted: 03/03/11 14:52  
Analyzed: 03/03/11 14:52

### 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	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 (DBCP)	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	111	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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## ANALYTICAL REPORT

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655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-03A  
Client I.D. Number: MW-17-2

Sampled: 02/25/11 10:34  
Received: 03/01/11  
Extracted: 03/03/11 15:14  
Analyzed: 03/03/11 15:14

### 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	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 (DBCP)	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	111	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	109	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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 • (714) 386-2901 / info@alpha-analytical.com

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

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3/11/11

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-04A  
Client I.D. Number: EB-04-02/25/11

Sampled: 02/25/11 10:14  
Received: 03/01/11  
Extracted: 03/03/11 13:26  
Analyzed: 03/03/11 13:26

### 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	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 (DBCP)	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	104	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / info@alpha-analytical.com

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

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*PS*

3/11/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-05A  
Client I.D. Number: TB-04-02/25/11

Sampled: 02/25/11 07:00  
Received: 03/01/11  
Extracted: 03/03/11 13:04  
Analyzed: 03/03/11 13:04

### 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	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 (DBCP)	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	104	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / 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.

*PS*

3/11/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-07A  
Client I.D. Number: MW-24-3

Sampled: 02/28/11 09:29  
Received: 03/01/11  
Extracted: 03/03/11 15:35  
Analyzed: 03/03/11 15:35

### 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	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 (DBCP)	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	109	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	109	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/11/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-08A  
Client I.D. Number: MW-24-2

Sampled: 02/28/11 09:57  
Received: 03/01/11  
Extracted: 03/03/11 15:57  
Analyzed: 03/03/11 15:57

### 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	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 (DBCP)	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	111	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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 • (714) 386-2901 / 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.

3/11/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-09A  
Client I.D. Number: MW-24-1

Sampled: 02/28/11 10:44  
Received: 03/01/11  
Extracted: 03/03/11 16:18  
Analyzed: 03/03/11 16:18

### 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	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	5.4	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 (DBCP)	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	111	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / info@alpha-analytical.com

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*[Signature]*

3/11/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-10A  
Client I.D. Number: EB-05-02/28/11

Sampled: 02/28/11 10:29  
Received: 03/01/11  
Extracted: 03/03/11 14:09  
Analyzed: 03/03/11 14:09

### 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	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 (DBCP)	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	108	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	96	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/11/11

Report Date

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.  
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# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030145-11A  
Client I.D. Number: TB-05-02/28/11

Sampled: 02/28/11 07:00  
Received: 03/01/11  
Extracted: 03/03/11 13:48  
Analyzed: 03/03/11 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	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 (DBCP)	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	106	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/11/11

Report Date

Page 1 of 1





# Alpha Analytical, Inc.

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## VOC Sample Preservation Report

**Work Order:** BMI11030145

**Job:** G005862/JPL Groundwater Monitoring

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Alpha's Sample ID	Client's Sample ID	Matrix	pH
11030145-01A	MW-17-4	Aqueous	2
11030145-02A	MW-17-3	Aqueous	2
11030145-03A	MW-17-2	Aqueous	2
11030145-04A	EB-04-02/25/11	Aqueous	2
11030145-05A	TB-04-02/25/11	Aqueous	2
11030145-07A	MW-24-3	Aqueous	2
11030145-08A	MW-24-2	Aqueous	2
11030145-09A	MW-24-1	Aqueous	2
11030145-10A	EB-05-02/28/11	Aqueous	2
11030145-11A	TB-05-02/28/11	Aqueous	2

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3/11/11  
**Report Date**



# Alpha Analytical, Inc.

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

Date:  
10-Mar-11

## QC Summary Report

Work Order:  
11030145

### Method Blank

Method Blank		Type: MBLK	Test Code: EPA Method 300.0							
File ID: 25			Batch ID: 26084					Analysis Date: 03/02/2011 12:25		
Sample ID: MB-26084	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	ND	0.5								
Nitrite (NO2) - N	ND	0.25								
Nitrate (NO3) - N	ND	0.25								
Phosphate, ortho - P	ND	0.5								
Sulfate (SO4)	ND	0.5								

### Laboratory Fortified Blank

Laboratory Fortified Blank		Type: LFB	Test Code: EPA Method 300.0							
File ID: 26			Batch ID: 26084					Analysis Date: 03/02/2011 12:44		
Sample ID: LFB-26084	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	52.9	0.5	50		106	90	110			
Nitrite (NO2) - N	4.82	0.25	5		96	90	110			
Nitrate (NO3) - N	5.47	0.25	5		109	90	110			
Phosphate, ortho - P	4.77	0.5	5		95	90	110			
Sulfate (SO4)	109	0.5	100		109	90	110			

### Sample Matrix Spike

Sample Matrix Spike		Type: LFM	Test Code: EPA Method 300.0							
File ID: 35			Batch ID: 26084					Analysis Date: 03/02/2011 15:30		
Sample ID: 11030204-08ALFM	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	165	0.5	100	74.73	91	80	120			
Nitrite (NO2) - N	9.99	0.25	10	0	99.9	80	120			
Nitrate (NO3) - N	12.1	0.25	10	1.128	110	80	120			
Phosphate, ortho - P	9.91	0.5	10	0	99	80	120			
Sulfate (SO4)	231	0.5	200	52.63	89	80	120			

### Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type: LFMD	Test Code: EPA Method 300.0							
File ID: 36			Batch ID: 26084					Analysis Date: 03/02/2011 15:49		
Sample ID: 11030204-08ALFMD	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	169	0.5	100	74.73	94	80	120	165.4	2.1(15)	
Nitrite (NO2) - N	10	0.25	10	0	100	80	120	9.993	0.3(15)	
Nitrate (NO3) - N	12.1	0.25	10	1.128	110	80	120	12.08	0.2(15)	
Phosphate, ortho - P	10.3	0.5	10	0	103	80	120	9.915	3.9(15)	
Sulfate (SO4)	233	0.5	200	52.63	90	80	120	230.7	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.



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778  
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Date:  
07-Mar-11

## QC Summary Report

Work Order:  
11030145

### Method Blank

Type **MBLK** Test Code: **EPA Method 314.0**

File ID: **14**

Batch ID: **26092**

Analysis Date: **03/02/2011 11:39**

Sample ID: **MB-26092**

Units : **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	ND		1							

### Laboratory Fortified Blank

Type **LFB** Test Code: **EPA Method 314.0**

File ID: **15**

Batch ID: **26092**

Analysis Date: **03/02/2011 11:57**

Sample ID: **LFB-26092**

Units : **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	25.4	2	25		102	85	115			

### Sample Matrix Spike

Type **LFM** Test Code: **EPA Method 314.0**

File ID: **20**

Batch ID: **26092**

Analysis Date: **03/02/2011 13:29**

Sample ID: **11030145-03ALFM**

Units : **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	50.3	2	25	24.07	105	80	120			

### Sample Matrix Spike Duplicate

Type **LFMD** Test Code: **EPA Method 314.0**

File ID: **21**

Batch ID: **26092**

Analysis Date: **03/02/2011 13:48**

Sample ID: **11030145-03ALFMD**

Units : **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	52.1	2	25	24.07	112	80	120	50.28	3.6(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 Analytical, Inc.

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

Date:  
08-Mar-11

## QC Summary Report

Work Order:  
11030145

### Method Blank

Type **MBLK** Test Code: **EPA Method 200.8**

File ID: 030211.B\059\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 16:41

Sample ID: MB-26081

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

Type **LCS** Test Code: **EPA Method 200.8**

File ID: 030211.B\060\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 16:47

Sample ID: LCS-26081

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0542	0.005	0.05		108	85	115			

### Sample Matrix Spike

Type **MS** Test Code: **EPA Method 200.8**

File ID: 030211.B\065\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 17:15

Sample ID: 11030145-03AMS

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0532	0.005	0.05	0	106	70	130			

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method 200.8**

File ID: 030211.B\066\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 17:21

Sample ID: 11030145-03AMSD

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0529	0.005	0.05	0	106	70	130	0.0532	0.6(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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Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

### Method Blank

Type **MBLK** Test Code: **EPA Method SW8260B**

File ID: **11030307.D**

Batch ID: **MS15W0303M**

Analysis Date: **03/03/2011 10:34**

Sample ID: **MBLK MS15W0303M**

Units : **µg/L**

Run ID: **MSD\_15\_110303B**

Prep Date: **03/03/2011 10:34**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
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	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)	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								
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	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								
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	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	1								
Surr: 1,2-Dichloroethane-d4	9.5		10		95	70	130			
Surr: Toluene-d8	10.5		10		105	70	130			



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Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

Surr: 4-Bromofluorobenzene

9.7

10

97

70

130



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Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

### Laboratory Control Spike

File ID: 11030303.D

Type LCS

Test Code: EPA Method SW8260B

Sample ID: LCS MS15W0303M

Units : µg/L

Batch ID: MS15W0303M

Analysis Date: 03/03/2011 08:59

Run ID: MSD\_15\_110303B

Prep Date: 03/03/2011 08:59

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	7.18	1	10		72	70	130			
Chloromethane	9.97	2	10		99.7	70	130			
Vinyl chloride	9.54	1	10		95	70	130			
Chloroethane	9.97	1	10		99.7	70	130			
Bromomethane	7.97	2	10		80	70	130			
Trichlorofluoromethane	9.51	1	10		95	70	130			
1,1-Dichloroethene	10.2	1	10		102	70	130			
Dichloromethane	9.5	2	10		95	70	130			
Freon-113	10.4	1	10		104	70	137			
trans-1,2-Dichloroethene	10.3	1	10		103	70	130			
Methyl tert-butyl ether (MTBE)	8.96	0.5	10		90	70	130			
1,1-Dichloroethane	10.4	1	10		104	70	130			
2-Butanone (MEK)	182	10	200		91	70	130			
cis-1,2-Dichloroethene	10.7	1	10		107	70	130			
Bromochloromethane	9.76	1	10		98	70	130			
Chloroform	9.34	1	10		93	70	130			
2,2-Dichloropropane	10.4	1	10		104	70	130			
1,2-Dichloroethane	9.21	1	10		92	70	130			
1,1,1-Trichloroethane	10.3	1	10		103	70	130			
1,1-Dichloropropene	10.8	1	10		108	70	130			
Carbon tetrachloride	9.46	1	10		95	70	130			
Benzene	10	0.5	10		100	70	130			
Dibromomethane	9.9	1	10		99	70	130			
1,2-Dichloropropane	10.6	1	10		106	70	130			
Trichloroethene	10.6	1	10		106	70	130			
Bromodichloromethane	10.3	1	10		103	70	130			
4-Methyl-2-pentanone (MIBK)	22.1	2.5	25		88	20	182			
cis-1,3-Dichloropropene	9.75	1	10		98	70	130			
trans-1,3-Dichloropropene	8.57	1	10		86	70	130			
1,1,2-Trichloroethane	9.76	1	10		98	70	130			
Toluene	10.7	0.5	10		107	70	130			
1,3-Dichloropropane	10	1	10		100	70	130			
Dibromochloromethane	9.94	1	10		99	70	130			
1,2-Dibromoethane (EDB)	20.4	2	20		102	70	130			
Tetrachloroethene	10.5	1	10		105	70	130			
1,1,1,2-Tetrachloroethane	10.8	1	10		108	70	130			
Chlorobenzene	10.5	1	10		105	70	130			
Ethylbenzene	10.6	0.5	10		106	70	130			
m,p-Xylene	10.8	0.5	10		108	70	130			
Bromoform	9.14	1	10		91	70	130			
Styrene	11	1	10		110	70	130			
o-Xylene	11	0.5	10		110	70	130			
1,1,2,2-Tetrachloroethane	9.82	1	10		98	70	130			
1,2,3-Trichloropropane	18.6	2	20		93	70	130			
Isopropylbenzene	10.9	1	10		109	70	130			
Bromobenzene	10.4	1	10		104	70	130			
n-Propylbenzene	11	1	10		110	70	130			
4-Chlorotoluene	11.4	1	10		114	70	130			
2-Chlorotoluene	11.1	1	10		111	70	130			
1,3,5-Trimethylbenzene	11.1	1	10		111	70	130			
tert-Butylbenzene	10.6	1	10		106	70	130			
1,2,4-Trimethylbenzene	11.1	1	10		111	70	130			
sec-Butylbenzene	10.9	1	10		109	70	130			
1,3-Dichlorobenzene	11.1	1	10		111	70	130			
1,4-Dichlorobenzene	10.4	1	10		104	70	130			
4-Isopropyltoluene	11	1	10		110	70	130			
1,2-Dichlorobenzene	9.94	1	10		99	70	130			
n-Butylbenzene	11.5	1	10		115	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	43.2	3	50		86	67	130			
1,2,4-Trichlorobenzene	10.3	2	10		103	70	130			
Naphthalene	8.48	2	10		85	70	130			
Hexachlorobutadiene	18.4	2	20		92	70	130			
1,2,3-Trichlorobenzene	9.84	2	10		98	70	130			
Surr: 1,2-Dichloroethane-d4	9.23		10		92	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			



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Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

Surr: 4-Bromofluorobenzene

10.3

10

103

70

130





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Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

### Sample Matrix Spike

File ID: 11030308.D

Sample ID: 11030145-03AMS

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	34.5	2.5	50	0	69	21	138			
Chloromethane	44	10	50	0	88	23	144			
Vinyl chloride	47.3	2.5	50	0	95	49	136			
Chloroethane	46.2	2.5	50	0	92	21	159			
Bromomethane	34.6	10	50	0	69	10	174			
Trichlorofluoromethane	44.6	2.5	50	0	89	32	154			
1,1-Dichloroethene	47.2	2.5	50	0	94	64	130			
Dichloromethane	44.4	10	50	0	89	69	130			
Freon-113	48.3	2.5	50	0	97	55	141			
trans-1,2-Dichloroethene	46.3	2.5	50	0	93	63	130			
Methyl tert-butyl ether (MTBE)	47.1	1.3	50	0	94	47	150			
1,1-Dichloroethane	48	2.5	50	0	96	66	130			
2-Butanone (MEK)	745	50	1000	0	75	23	182			
cis-1,2-Dichloroethene	47.1	2.5	50	0	94	70	130			
Bromochloromethane	46.6	2.5	50	0	93	70	132			
Chloroform	43.8	2.5	50	0	88	70	130			
2,2-Dichloropropane	47	2.5	50	0	94	38	154			
1,2-Dichloroethane	45	2.5	50	0	90	65	134			
1,1,1-Trichloroethane	46.5	2.5	50	0	93	65	136			
1,1-Dichloropropene	48.7	2.5	50	0	97	68	132			
Carbon tetrachloride	40.5	2.5	50	0	81	58	148			
Benzene	45.5	1.3	50	0	91	59	138			
Dibromomethane	47.3	2.5	50	0	95	70	130			
1,2-Dichloropropane	49.3	2.5	50	0	99	70	131			
Trichloroethene	47	2.5	50	0	94	65	144			
Bromodichloromethane	47.6	2.5	50	0	95	50	157			
4-Methyl-2-pentanone (MIBK)	110	13	125	0	88	20	182			
cis-1,3-Dichloropropene	44.8	2.5	50	0	90	63	131			
trans-1,3-Dichloropropene	40.2	2.5	50	0	80	65	136			
1,1,2-Trichloroethane	48.1	2.5	50	0	96	70	131			
Toluene	48.9	1.3	50	0	98	68	130			
1,3-Dichloropropane	51.2	2.5	50	0	102	70	130			
Dibromochloromethane	47.4	2.5	50	0	95	42	155			
1,2-Dibromoethane (EDB)	101	5	100	0	101	70	130			
Tetrachloroethene	48	2.5	50	0	96	65	130			
1,1,1,2-Tetrachloroethane	48.1	2.5	50	0	96	70	130			
Chlorobenzene	46.7	2.5	50	0	93	70	130			
Ethylbenzene	46.6	1.3	50	0	93	68	130			
m,p-Xylene	47.1	1.3	50	0	94	68	131			
Bromoform	42.3	2.5	50	0	85	65	143			
Styrene	47.4	2.5	50	0	95	59	153			
o-Xylene	47.1	1.3	50	0	94	70	130			
1,1,2,2-Tetrachloroethane	46.9	2.5	50	0	94	67	130			
1,2,3-Trichloropropane	89.5	10	100	0	89	70	130			
Isopropylbenzene	48.9	2.5	50	0	98	55	138			
Bromobenzene	46.9	2.5	50	0	94	70	130			
n-Propylbenzene	48.9	2.5	50	0	98	67	133			
4-Chlorotoluene	49.9	2.5	50	0	99.7	70	130			
2-Chlorotoluene	48.1	2.5	50	0	96	70	130			
1,3,5-Trimethylbenzene	48.4	2.5	50	0	97	67	134			
tert-Butylbenzene	47.3	2.5	50	0	95	55	147			
1,2,4-Trimethylbenzene	48.9	2.5	50	0	98	65	135			
sec-Butylbenzene	48.5	2.5	50	0	97	68	135			
1,3-Dichlorobenzene	49.1	2.5	50	0	98	70	130			
1,4-Dichlorobenzene	47.5	2.5	50	0	95	70	130			
4-Isopropyltoluene	49.3	2.5	50	0	99	68	132			
1,2-Dichlorobenzene	46.7	2.5	50	0	93	70	130			
n-Butylbenzene	52.3	2.5	50	0	105	62	134			
1,2-Dibromo-3-chloropropane (DBCP)	219	15	250	0	88	64	130			
1,2,4-Trichlorobenzene	51	10	50	0	102	62	133			
Naphthalene	43.9	10	50	0	88	32	166			
Hexachlorobutadiene	88.1	10	100	0	88	63	130			
1,2,3-Trichlorobenzene	50.6	10	50	0	101	55	138			
Surr: 1,2-Dichloroethane-d4	47.9		50		96	70	130			
Surr: Toluene-d8	51.3		50		103	70	130			



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Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

Surr: 4-Bromofluorobenzene

49.9

50

99.7

70

130



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Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

### Sample Matrix Spike

Type **MS** Test Code: **EPA Method SW8260B**

File ID: **11030310.D**

Batch ID: **MS15W0303M**

Analysis Date: **03/03/2011 11:38**

Sample ID: **11030145-07AMS**

Units : **µg/L**

Run ID: **MSD\_15\_110303B**

Prep Date: **03/03/2011 11:38**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	32.2	2.5	50	0	64	21	138			
Chloromethane	42.8	10	50	0	86	23	144			
Vinyl chloride	44.6	2.5	50	0	89	49	136			
Chloroethane	45.6	2.5	50	0	91	21	159			
Bromomethane	37.5	10	50	0	75	10	174			
Trichlorofluoromethane	42.5	2.5	50	0	85	32	154			
1,1-Dichloroethene	44.4	2.5	50	0	89	64	130			
Dichloromethane	43.4	10	50	0	87	69	130			
Freon-113	45.7	2.5	50	0	91	55	141			
trans-1,2-Dichloroethene	44.6	2.5	50	0	89	63	130			
Methyl tert-butyl ether (MTBE)	47.8	1.3	50	0	96	47	150			
1,1-Dichloroethane	46.4	2.5	50	0	93	66	130			
2-Butanone (MEK)	765	50	1000	0	77	23	182			
cis-1,2-Dichloroethene	47.8	2.5	50	0	96	70	130			
Bromochloromethane	48.1	2.5	50	0	96	70	132			
Chloroform	42.2	2.5	50	0	84	70	130			
2,2-Dichloropropane	47.9	2.5	50	0	96	38	154			
1,2-Dichloroethane	44.5	2.5	50	0	89	65	134			
1,1,1-Trichloroethane	45.2	2.5	50	0	90	65	136			
1,1-Dichloropropene	47.1	2.5	50	0	94	68	132			
Carbon tetrachloride	41.4	2.5	50	0	83	58	148			
Benzene	44.4	1.3	50	0	89	59	138			
Dibromomethane	47.6	2.5	50	0	95	70	130			
1,2-Dichloropropane	48.7	2.5	50	0	97	70	131			
Trichloroethene	45.3	2.5	50	0	91	65	144			
Bromodichloromethane	47.3	2.5	50	0	95	50	157			
4-Methyl-2-pentanone (MIBK)	115	13	125	0	92	20	182			
cis-1,3-Dichloropropene	45.1	2.5	50	0	90	63	131			
trans-1,3-Dichloropropene	41.7	2.5	50	0	83	65	136			
1,1,2-Trichloroethane	47.9	2.5	50	0	96	70	131			
Toluene	48.2	1.3	50	0	96	68	130			
1,3-Dichloropropane	51.7	2.5	50	0	103	70	130			
Dibromochloromethane	49.5	2.5	50	0	99	42	155			
1,2-Dibromoethane (EDB)	104	5	100	0	104	70	130			
Tetrachloroethene	46	2.5	50	0	92	65	130			
1,1,1,2-Tetrachloroethane	49.1	2.5	50	0	98	70	130			
Chlorobenzene	46.6	2.5	50	0	93	70	130			
Ethylbenzene	45.3	1.3	50	0	91	68	130			
m,p-Xylene	45.8	1.3	50	0	92	68	131			
Bromoform	44	2.5	50	0	88	65	143			
Styrene	47.1	2.5	50	0	94	59	153			
o-Xylene	46.2	1.3	50	0	92	70	130			
1,1,2,2-Tetrachloroethane	47.7	2.5	50	0	95	67	130			
1,2,3-Trichloropropane	91.1	10	100	0	91	70	130			
Isopropylbenzene	47.2	2.5	50	0	94	55	138			
Bromobenzene	46.3	2.5	50	0	93	70	130			
n-Propylbenzene	47.8	2.5	50	0	96	67	133			
4-Chlorotoluene	49.5	2.5	50	0	99	70	130			
2-Chlorotoluene	46.9	2.5	50	0	94	70	130			
1,3,5-Trimethylbenzene	47.2	2.5	50	0	94	67	134			
tert-Butylbenzene	45.7	2.5	50	0	91	55	147			
1,2,4-Trimethylbenzene	47.4	2.5	50	0	95	65	135			
sec-Butylbenzene	46.9	2.5	50	0	94	68	135			
1,3-Dichlorobenzene	48.8	2.5	50	0	98	70	130			
1,4-Dichlorobenzene	46.7	2.5	50	0	93	70	130			
4-Isopropyltoluene	47.3	2.5	50	0	95	68	132			
1,2-Dichlorobenzene	46.5	2.5	50	0	93	70	130			
n-Butylbenzene	50.8	2.5	50	0	102	62	134			
1,2-Dibromo-3-chloropropane (DBCP)	235	15	250	0	94	64	130			
1,2,4-Trichlorobenzene	52.6	10	50	0	105	62	133			
Naphthalene	46.6	10	50	0	93	32	166			
Hexachlorobutadiene	90.2	10	100	0	90	63	130			
1,2,3-Trichlorobenzene	52.2	10	50	0	104	55	138			
Surr: 1,2-Dichloroethane-d4	46.4		50		93	70	130			
Surr: Toluene-d8	52.6		50		105	70	130			



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

---

**Date:**

04-Mar-11

## QC Summary Report

**Work Order:**

11030145

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Surr: 4-Bromofluorobenzene

49.9

50

99.8

70

130



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
04-Mar-11

## QC Summary Report

Work Order:  
11030145

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **11030309.D**

Batch ID: **MS15W0303M**

Analysis Date: **03/03/2011 11:17**

Sample ID: **11030145-03AMSD**

Units: **µg/L**

Run ID: **MSD\_15\_110303B**

Prep Date: **03/03/2011 11:17**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	34.5	2.5	50	0	69	21	138	34.46	0.2(33)	
Chloromethane	45.3	10	50	0	91	23	144	43.96	3.0(27)	
Vinyl chloride	47.9	2.5	50	0	96	49	136	47.29	1.3(21)	
Chloroethane	47.9	2.5	50	0	96	21	159	46.16	3.6(40)	
Bromomethane	38.9	10	50	0	78	10	174	34.6	11.6(40)	
Trichlorofluoromethane	47.5	2.5	50	0	95	32	154	44.57	6.3(37)	
1,1-Dichloroethene	48.1	2.5	50	0	96	64	130	47.23	1.9(21)	
Dichloromethane	44.5	10	50	0	89	69	130	44.39	0.3(20)	
Freon-113	49.6	2.5	50	0	99	55	141	48.26	2.8(40)	
trans-1,2-Dichloroethene	47.1	2.5	50	0	94	63	130	46.26	1.9(20)	
Methyl tert-butyl ether (MTBE)	47.5	1.3	50	0	95	47	150	47.1	0.7(40)	
1,1-Dichloroethane	48.9	2.5	50	0	98	66	130	48	1.8(20)	
2-Butanone (MEK)	751	50	1000	0	75	23	182	745.1	0.7(22)	
cis-1,2-Dichloroethene	49.7	2.5	50	0	99	70	130	47.09	5.4(20)	
Bromochloromethane	47.9	2.5	50	0	96	70	132	46.58	2.8(20)	
Chloroform	43.9	2.5	50	0	88	70	130	43.84	0.2(20)	
2,2-Dichloropropane	50.2	2.5	50	0	100	38	154	47.03	6.5(22)	
1,2-Dichloroethane	44.8	2.5	50	0	90	65	134	44.99	0.4(20)	
1,1,1-Trichloroethane	47.6	2.5	50	0	95	65	136	46.54	2.3(20)	
1,1-Dichloropropene	50.3	2.5	50	0	101	68	132	48.66	3.3(20)	
Carbon tetrachloride	44.4	2.5	50	0	89	58	148	40.47	9.3(20)	
Benzene	46.4	1.3	50	0	93	59	138	45.47	2.0(21)	
Dibromomethane	47.6	2.5	50	0	95	70	130	47.25	0.8(20)	
1,2-Dichloropropane	50.6	2.5	50	0	101	70	131	49.25	2.7(20)	
Trichloroethene	48.7	2.5	50	0	97	65	144	47.02	3.6(20)	
Bromodichloromethane	49.5	2.5	50	0	99	50	157	47.58	3.9(20)	
4-Methyl-2-pentanone (MIBK)	110	13	125	0	88	20	182	110.1	0.1(20)	
cis-1,3-Dichloropropene	46.9	2.5	50	0	94	63	131	44.77	4.7(20)	
trans-1,3-Dichloropropene	42.5	2.5	50	0	85	65	136	40.16	5.6(20)	
1,1,2-Trichloroethane	48.7	2.5	50	0	97	70	131	48.05	1.2(20)	
Toluene	51	1.3	50	0	102	68	130	48.91	4.2(20)	
1,3-Dichloropropane	51.9	2.5	50	0	104	70	130	51.19	1.4(20)	
Dibromochloromethane	49.2	2.5	50	0	98	42	155	47.41	3.6(20)	
1,2-Dibromoethane (EDB)	102	5	100	0	102	70	130	100.9	1.0(20)	
Tetrachloroethene	49.7	2.5	50	0	99	65	130	48.04	3.4(20)	
1,1,1,2-Tetrachloroethane	50.7	2.5	50	0	101	70	130	48.1	5.3(20)	
Chlorobenzene	48.9	2.5	50	0	98	70	130	46.73	4.5(20)	
Ethylbenzene	48.3	1.3	50	0	97	68	130	46.59	3.7(20)	
m,p-Xylene	49	1.3	50	0	98	68	131	47.07	4.1(20)	
Bromoform	43.9	2.5	50	0	88	65	143	42.34	3.5(20)	
Styrene	48.9	2.5	50	0	98	59	153	47.44	3.1(37)	
o-Xylene	48.9	1.3	50	0	98	70	130	47.13	3.7(20)	
1,1,2,2-Tetrachloroethane	46.1	2.5	50	0	92	67	130	46.86	1.7(20)	
1,2,3-Trichloropropane	86.1	10	100	0	86	70	130	89.46	3.8(20)	
Isopropylbenzene	51.4	2.5	50	0	103	55	138	48.86	5.0(20)	
Bromobenzene	48.9	2.5	50	0	98	70	130	46.87	4.3(20)	
n-Propylbenzene	52.4	2.5	50	0	105	67	133	48.85	7.1(30)	
4-Chlorotoluene	52.3	2.5	50	0	105	70	130	49.87	4.7(20)	
2-Chlorotoluene	50.8	2.5	50	0	102	70	130	48.11	5.3(20)	
1,3,5-Trimethylbenzene	50.8	2.5	50	0	102	67	134	48.44	4.7(21)	
tert-Butylbenzene	49.6	2.5	50	0	99	55	147	47.32	4.7(20)	
1,2,4-Trimethylbenzene	50.7	2.5	50	0	101	65	135	48.94	3.6(25)	
sec-Butylbenzene	50.8	2.5	50	0	102	68	135	48.54	4.5(20)	
1,3-Dichlorobenzene	50.8	2.5	50	0	102	70	130	49.12	3.3(20)	
1,4-Dichlorobenzene	48.6	2.5	50	0	97	70	130	47.49	2.4(20)	
4-Isopropyltoluene	50.9	2.5	50	0	102	68	132	49.29	3.3(20)	
1,2-Dichlorobenzene	48	2.5	50	0	96	70	130	46.72	2.7(20)	
n-Butylbenzene	54.8	2.5	50	0	110	62	134	52.31	4.6(21)	
1,2-Dibromo-3-chloropropane (DBCP)	227	15	250	0	91	64	130	219.1	3.5(20)	
1,2,4-Trichlorobenzene	53.4	10	50	0	107	62	133	51	4.5(29)	
Naphthalene	44	10	50	0	88	32	166	43.88	0.2(40)	
Hexachlorobutadiene	94.9	10	100	0	95	63	130	88.11	7.4(21)	
1,2,3-Trichlorobenzene	50.3	10	50	0	101	55	138	50.59	0.5(36)	
Surr: 1,2-Dichloroethane-d4	45.4		50		91	70	130			
Surr: Toluene-d8	52.3		50		105	70	130			



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

**Date:**

04-Mar-11

## QC Summary Report

**Work Order:**

11030145

Surr: 4-Bromofluorobenzene

51

50

102

70

130



# Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:

04-Mar-11

## QC Summary Report

Work Order:

11030145

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **11030311.D**

Batch ID: **MS15W0303M**

Analysis Date: **03/03/2011 12:00**

Sample ID: **11030145-07AMSD**

Units : **µg/L**

Run ID: **MSD\_15\_110303B**

Prep Date: **03/03/2011 12:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	30.9	2.5	50	0	62	21	138	32.18	4.1(33)	
Chloromethane	41.7	10	50	0	83	23	144	42.76	2.6(27)	
Vinyl chloride	44	2.5	50	0	88	49	136	44.64	1.5(21)	
Chloroethane	43.7	2.5	50	0	87	21	159	45.59	4.2(40)	
Bromomethane	39.3	10	50	0	79	10	174	37.54	4.6(40)	
Trichlorofluoromethane	41.5	2.5	50	0	83	32	154	42.48	2.4(37)	
1,1-Dichloroethene	43.2	2.5	50	0	86	64	130	44.38	2.7(21)	
Dichloromethane	42.4	10	50	0	85	69	130	43.43	2.4(20)	
Freon-113	44.6	2.5	50	0	89	55	141	45.67	2.3(40)	
trans-1,2-Dichloroethene	43.7	2.5	50	0	87	63	130	44.6	2.0(20)	
Methyl tert-butyl ether (MTBE)	48.7	1.3	50	0	97	47	150	47.81	1.8(40)	
1,1-Dichloroethane	45.5	2.5	50	0	91	66	130	46.41	2.0(20)	
2-Butanone (MEK)	773	50	1000	0	77	23	182	765.4	1.1(22)	
cis-1,2-Dichloroethene	46.5	2.5	50	0	93	70	130	47.76	2.7(20)	
Bromochloromethane	46.8	2.5	50	0	94	70	132	48.1	2.7(20)	
Chloroform	40.7	2.5	50	0	81	70	130	42.15	3.5(20)	
2,2-Dichloropropane	46.7	2.5	50	0	93	38	154	47.9	2.6(22)	
1,2-Dichloroethane	43.8	2.5	50	0	88	65	134	44.49	1.6(20)	
1,1,1-Trichloroethane	44.2	2.5	50	0	88	65	136	45.16	2.1(20)	
1,1-Dichloropropene	45.3	2.5	50	0	91	68	132	47.13	3.9(20)	
Carbon tetrachloride	41.5	2.5	50	0	83	58	148	41.42	0.2(20)	
Benzene	43.4	1.3	50	0	87	59	138	44.35	2.2(21)	
Dibromomethane	47.1	2.5	50	0	94	70	130	47.59	1.0(20)	
1,2-Dichloropropane	48.2	2.5	50	0	96	70	131	48.68	0.9(20)	
Trichloroethene	44.6	2.5	50	0	89	65	144	45.34	1.7(20)	
Bromodichloromethane	46.9	2.5	50	0	94	50	157	47.29	0.9(20)	
4-Methyl-2-pentanone (MIBK)	115	13	125	0	92	20	182	114.7	0.1(20)	
cis-1,3-Dichloropropene	44.3	2.5	50	0	89	63	131	45.14	1.8(20)	
trans-1,3-Dichloropropene	41.8	2.5	50	0	84	65	136	41.66	0.2(20)	
1,1,2-Trichloroethane	47.9	2.5	50	0	96	70	131	47.94	0.1(20)	
Toluene	48.2	1.3	50	0	96	68	130	48.2	0.0(20)	
1,3-Dichloropropane	52.2	2.5	50	0	104	70	130	51.71	0.9(20)	
Dibromochloromethane	49.3	2.5	50	0	99	42	155	49.54	0.4(20)	
1,2-Dibromoethane (EDB)	105	5	100	0	105	70	130	103.8	1.4(20)	
Tetrachloroethene	45.8	2.5	50	0	92	65	130	46.02	0.6(20)	
1,1,1,2-Tetrachloroethane	49.2	2.5	50	0	98	70	130	49.11	0.2(20)	
Chlorobenzene	46.5	2.5	50	0	93	70	130	46.63	0.2(20)	
Ethylbenzene	45.1	1.3	50	0	90	68	130	45.33	0.5(20)	
m,p-Xylene	45.7	1.3	50	0	91	68	131	45.83	0.2(20)	
Bromoform	44	2.5	50	0	88	65	143	43.97	0.0(20)	
Styrene	46.6	2.5	50	0	93	59	153	47.07	0.9(37)	
o-Xylene	46.1	1.3	50	0	92	70	130	46.2	0.3(20)	
1,1,1,2-Tetrachloroethane	48.4	2.5	50	0	97	67	130	47.68	1.5(20)	
1,2,3-Trichloropropane	91.5	10	100	0	92	70	130	91.11	0.4(20)	
Isopropylbenzene	46.8	2.5	50	0	94	55	138	47.17	0.9(20)	
Bromobenzene	46.3	2.5	50	0	93	70	130	46.34	0.0(20)	
n-Propylbenzene	47.6	2.5	50	0	95	67	133	47.78	0.4(30)	
4-Chlorotoluene	48.8	2.5	50	0	98	70	130	49.52	1.4(20)	
2-Chlorotoluene	47	2.5	50	0	94	70	130	46.88	0.3(20)	
1,3,5-Trimethylbenzene	46.4	2.5	50	0	93	67	134	47.2	1.8(21)	
tert-Butylbenzene	45.2	2.5	50	0	90	55	147	45.74	1.2(20)	
1,2,4-Trimethylbenzene	47.6	2.5	50	0	95	65	135	47.44	0.3(25)	
sec-Butylbenzene	46.3	2.5	50	0	93	68	135	46.9	1.2(20)	
1,3-Dichlorobenzene	48.7	2.5	50	0	97	70	130	48.81	0.2(20)	
1,4-Dichlorobenzene	46.7	2.5	50	0	93	70	130	46.68	0.0(20)	
4-Isopropyltoluene	47.4	2.5	50	0	95	68	132	47.34	0.1(20)	
1,2-Dichlorobenzene	46.3	2.5	50	0	93	70	130	46.51	0.6(20)	
n-Butylbenzene	50.9	2.5	50	0	102	62	134	50.78	0.1(21)	
1,2-Dibromo-3-chloropropane (DBCP)	236	15	250	0	94	64	130	234.8	0.3(20)	
1,2,4-Trichlorobenzene	53.7	10	50	0	107	62	133	52.6	2.0(29)	
Naphthalene	46.1	10	50	0	92	32	166	46.56	1.1(40)	
Hexachlorobutadiene	91.7	10	100	0	92	63	130	90.2	1.6(21)	
1,2,3-Trichlorobenzene	51.8	10	50	0	104	55	138	52.18	0.8(36)	
Surr: 1,2-Dichloroethane-d4	46.6		50		93	70	130			
Surr: Toluene-d8	53		50		106	70	130			



# Alpha Analytical, Inc.

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---

**Date:**

04-Mar-11

## QC Summary Report

**Work Order:**

11030145

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Surr: 4-Bromofluorobenzene

50.6

50

101

70

130

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**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

# CA

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

**WorkOrder : BMIS11030145**  
**Report Due By : 5:00 PM On : 14-Mar-11**

**Client:** Battelle Memorial Institute  
 655 West Broadway  
 Suite 1420  
 San Diego, CA 92101

**Report Attention** Phone Number **Email Address**  
 David Corner (619) 726-7311 x commrd@battelle.org  
 Betsy Cutie (614) 424-4899 x cutiee@battelle.org  
 Shane Walton (614) 424-4117 x waltons@battelle.org

EDD Required : Yes

Sampled by : Chase Brogdon

PO : 218013

Cooler Temp 1 °C

Samples Received 01-Mar-11

Date Printed 01-Mar-11

Client's COC # : 33408, 33399

Job : G005862/JPL Groundwater Monitoring

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

Alpha Sample ID	Client Sample ID	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests				Sample Remarks
						300_0_W	314_W	METALS_D W	VOC_TIC_W	
BMI11030145-01A	MW-17-4	02/25/11 09:15	5	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11030145-02A	MW-17-3	02/25/11 09:48	5	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11030145-03A	MW-17-2	02/25/11 10:34	10	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD
BMI11030145-04A	EB-04-02/25/11	02/25/11 10:14	5	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11030145-05A	TB-04-02/25/11	02/25/11 07:00	1	0	9			VOC by 524 Criteria	VOC by 524 Criteria	Reno TB, 12/14/10
BMI11030145-06A	MW-24-4	02/28/11 08:56	1	0	9		Cr			
BMI11030145-07A	MW-24-3	02/28/11 09:29	10	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD
BMI11030145-08A	MW-24-2	02/28/11 09:57	5	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11030145-09A	MW-24-1	02/28/11 10:44	5	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	
BMI11030145-10A	EB-05-02/28/11	02/28/11 10:29	5	0	9	Pechlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria	

**Comments:** Security seals intact. Frozen ice. Temp Blank #8391 received @ 1°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD).

**Logged in by:** Deva Johnson Tara Johnson **Signature** **Print Name**  
**Company** Alpha Analytical, Inc. **Date/Time** 3/11/11 12:13

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. 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-Orto T-Tedlar B-Brass P-Plastic OT-Other

# CHAIN-OF-CUSTODY RECORD

# CA

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

**WorkOrder : BMIS11030145**  
**Report Due By : 5:00 PM On : 14-Mar-11**

**Client:**

Battelle Memorial Institute  
 655 West Broadway  
 Suite 1420  
 San Diego, CA 92101

**Report Attention**

Report Attention	Phone Number	Email Address
David Conner	(619) 726-7311 x	connerd@battelle.org
Betsy Cuite	(614) 424-4899 x	cuitee@battelle.org
Shane Walton	(614) 424-4117 x	waltonsh@battelle.org

EDD Required : Yes

Sampled by : Chase Brogdon

Cooler Temp 1 °C

Samples Received 01-Mar-11

Date Printed 01-Mar-11

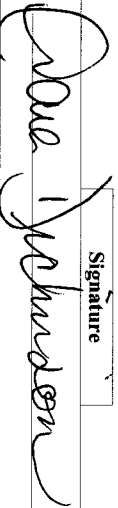
Client's COC # : 33408, 33399

Job : G005862/JPL Groundwater Monitoring

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

Alpha Sample ID	Client Sample ID	Collection Matrix Date	No. of Bottles			TAT	Requested Tests				Sample Remarks	
			Alpha	Sub	Alpha		300_0_W	314_W	METALS_D W	VOC_TIC_W		VOC_W
BM111030145-11A	TB-05-02/28/11	AQ 02/28/11 07:00	1	0	9	VOC by 524 Criteria	VOC by 524 Criteria					Reno TB, 12/14/10

Comments: Security seals intact. Frozen ice. Temp Blank #8391 received @ 1°C. Level IV QC. Samples should be used as the control spike sample if possible. (L.E.: MS/MSD).

Logged in by: 	Signature: _____
Print Name: <u>Chase Brogdon</u>	Company: Alpha Analytical, Inc.
Date/Time: <u>3/11/11 12:17</u>	

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. 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-Orho T-Tedlar B-Brass P-Plastic OT-Other

**Billing Information:** BATTLE

Company Name GENERALS TAMPKINS  
 Attn: 505 KINDS AVE.  
 Address 505 KINDS AVE.  
 City, State, Zip COLUMBUS, OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Alpha Analytical, Inc.**  
 255 Glendale Avenue, Suite 21  
 Sparks, Nevada 89431-5778  
 Phone (775) 355-1044  
 Fax (775) 355-0406

**Samples Collected From Which State?**  
 AZ \_\_\_\_\_ CA  NV \_\_\_\_\_ WA \_\_\_\_\_  
 ID \_\_\_\_\_ OR \_\_\_\_\_ OTHER \_\_\_\_\_  
 Page # 1 of 1

**33408**

Analyses Required

Data Validation Level: III or IV

EDP/EDF? YES  NO \_\_\_\_\_

REMARKS

Time Sampled	Date Sampled	Matrix* See Key Blow	P.O. #	Lab ID Number (Use Only)	Office (Use Only)	Name: Report Attention / Project Manager	Job #	Job Name	TAT	Field Filled	# Containers**	Remarks
0948	1/25/11	AR	BMC11030145-01			DAVID CONVEN	6005862	JPL Gw. Mon. 1011			3v 2p	
1034	1/25/11	OB				DAVID CONVEN					3v 2p	
1014	1/25/11	OB				DAVID CONVEN					6v 4p	
0700	2/25/11	AA				DAVID CONVEN					3v 2p	
						DAVID CONVEN					1v	

**ADDITIONAL INSTRUCTIONS:**

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action (MAC 445-0636 (C)(2)). Sampled By: [Signature]

Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date:	Time:
<u>[Signature]</u>	<u>[Signature]</u>	02/28/11	1:00
<u>[Signature]</u>	<u>[Signature]</u>	3/1/11	12:25

\*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 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.

**Billing Information:**

Company Name: BATTELLE  
Attn: CORNELIUS THOMPkins  
Address: 505 KINL- AVE.  
City, State, Zip: COLUMBUS OH, 43220  
Phone Number: \_\_\_\_\_ Fax: \_\_\_\_\_



Alpha Analytical, Inc.  
255 Glendale Avenue, Suite 21  
Sparks, Nevada 89431-5778  
Phone (775) 355-1044  
Fax (775) 355-0406

**Samples Collected From Which State?**

AZ \_\_\_\_\_ CA  OR \_\_\_\_\_ NV \_\_\_\_\_ WA \_\_\_\_\_  
ID \_\_\_\_\_ OTHER \_\_\_\_\_

DOD Site # \_\_\_\_\_  
Page # 1 of 1

**Analyses Required**

VOLs (624.2)  
TOTAL Cr (2008)  
Clay (314.0)  
Cl-SM, NS, NW, P-3 (300.0)

Data Validation  
Level: III or IV

EDP/EDF? YES  NO \_\_\_\_\_  
Global ID # \_\_\_\_\_

REMARKS

Time Sampled	Date Sampled	Matrix* See Key Below	P.O. #	Lab ID Number	Office (Use Only)	Sample Description	TAT	Field Filtered	# Containers**	Analysis	REMARKS
0856	4/28/11	AQ	BMT11030145-10			MW-24-4			1P	X	
0929						MW-24-3			6V 4P	X	
0957						MW-24-2			3V 2P	X	
1044						MW-24-1			3V 2P	X	
1029						EB-05-02/28/11			3V 2P	X	
0700/1041		AQ				TR-05-02/28/11			1V	X	Equip Blank Trip Blank
USE ONLY											

**ADDITIONAL INSTRUCTIONS:**

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action (NAC 445.0636-4c) (2)). Sampled By: CHRIS BLOCH

Relinquished by: (Signature/Affiliation) <u>[Signature]</u>	Received by: (Signature/Affiliation) <u>INSIGHT</u>	Received by: (Signature/Affiliation) <u>[Signature]</u>	Date: <u>02/25/11</u>	Time: <u>1500</u>
Relinquished by: (Signature/Affiliation) <u>[Signature]</u>	Received by: (Signature/Affiliation) <u>ADD. ANALYST</u>	Received by: (Signature/Affiliation) <u>[Signature]</u>	Date: <u>3/1/11</u>	Time: <u>1225</u>
Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date: _____	Time: _____

\*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 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.



# Alpha Analytical, Inc.

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

Date: 07-Mar-2011

David Conner  
Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
(619) 726-7311

Suite 1420

## CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring

Work Order: BMI11030203

Cooler Temp: 2 °C

Alpha's Sample ID	Client's Sample ID	Matrix
11030203-01A	MW-16	Aqueous
11030203-02A	Trip Blank	Aqueous

### Manually Integrated Analytes

<u>Alpha's Sample ID</u>	<u>Test Reference</u>	<u>Analyte</u>
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*      *Randy Gardner*      *Walter Hinchman*

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 • (714) 386-2901 / 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  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/02/11

Job: G005862/JPL Groundwater Monitoring

Anions by IC  
EPA Method 300.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-16				
Lab ID: BMI11030203-01A Chloride	69	50 mg/L	03/02/11 09:55	03/02/11 13:21
Date Sampled 03/01/11 17:15 Nitrite (NO2) - N	ND	0.25 mg/L	03/02/11 09:55	03/02/11 13:21
Nitrate (NO3) - N	0.99	0.25 mg/L	03/02/11 09:55	03/02/11 13:21
Phosphate, ortho - P	ND	0.50 mg/L	03/02/11 09:55	03/02/11 13:21
Sulfate (SO4)	53	0.50 mg/L	03/02/11 09:55	03/02/11 13:21

ND = Not Detected

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*e*  
3/15/11

**Report Date**



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/02/11

Job: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography  
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-16				
Lab ID : BMI11030203-01A Perchlorate	ND	1.00 µg/L	03/02/11 12:21	03/02/11 18:24
Date Sampled 03/01/11 17:15				

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

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✓  
3/15/11

**Report Date**



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/02/11

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-16				
Lab ID: BM111030203-01A Chromium (Cr)	0.029	0.0050 mg/L	03/02/11 09:08	03/15/11 10:28
Date Sampled 03/01/11 17:15				

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3/15/11

Report Date





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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

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

Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID: <b>MW-16</b>				
Lab ID: BMI11030203-01A	*** None Found ***	ND	2.0 µg/L	03/04/11 14:21 03/04/11 14:21
Date Received: 03/02/11				
Date Sampled: 03/01/11 17:15				
Client ID: <b>Trip Blank</b>				
Lab ID: BMI11030203-02A	*** None Found ***	ND	2.0 µg/L	03/04/11 12:55 03/04/11 12:55
Date Received: 03/02/11				
Date Sampled: 03/01/11 00:00				

Note: Analysis conducted using EPA Method 524.2 criteria.  
ND = Not Detected

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3/15/11

**Report Date**

Page 1 of 1



# Alpha Analytical, Inc.

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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030203-01A  
Client I.D. Number: MW-16

Sampled: 03/01/11 17:15  
Received: 03/02/11  
Extracted: 03/04/11 14:21  
Analyzed: 03/04/11 14:21

### 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	1.0 µg/L	40 Bromoform	5.0	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	10	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	16	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	111	(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	17	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / info@alpha-analytical.com

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*PS*

3/15/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030203-02A  
Client I.D. Number: Trip Blank

Sampled: 03/01/11 00:00  
Received: 03/02/11  
Extracted: 03/04/11 12:55  
Analyzed: 03/04/11 12:55

### 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	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 (DBCP)	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	103	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/15/11

Report Date



# Alpha Analytical, Inc.

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:** BMI11030203

**Job:** G005862/JPL Groundwater Monitoring

---

Alpha's Sample ID	Client's Sample ID	Matrix	pH
11030203-01A	MW-16	Aqueous	2
11030203-02A	Trip Blank	Aqueous	2

---

3/15/11  
**Report Date**



# Alpha Analytical, Inc.

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

Date:  
15-Mar-11

## QC Summary Report

Work Order:  
11030203

### Method Blank

Type: **MBLK** Test Code: **EPA Method 300.0**

File ID: **25**

Batch ID: **26084**

Analysis Date: **03/02/2011 12:25**

Sample ID: **MB-26084**

Units : **mg/L**

Run ID: **IC\_2\_110302A**

Prep Date: **03/02/2011 09:55**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	ND	0.5								
Nitrite (NO2) - N	ND	0.25								
Nitrate (NO3) - N	ND	0.25								
Phosphate, ortho - P	ND	0.5								
Sulfate (SO4)	ND	0.5								

### Laboratory Fortified Blank

Type: **LFB** Test Code: **EPA Method 300.0**

File ID: **26**

Batch ID: **26084**

Analysis Date: **03/02/2011 12:44**

Sample ID: **LFB-26084**

Units : **mg/L**

Run ID: **IC\_2\_110302A**

Prep Date: **03/02/2011 09:55**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	52.9	0.5	50		106	90	110			
Nitrite (NO2) - N	4.82	0.25	5		96	90	110			
Nitrate (NO3) - N	5.47	0.25	5		109	90	110			
Phosphate, ortho - P	4.77	0.5	5		95	90	110			
Sulfate (SO4)	109	0.5	100		109	90	110			

### Sample Matrix Spike

Type: **LFM** Test Code: **EPA Method 300.0**

File ID: **35**

Batch ID: **26084**

Analysis Date: **03/02/2011 15:30**

Sample ID: **11030204-08ALFM**

Units : **mg/L**

Run ID: **IC\_2\_110302A**

Prep Date: **03/02/2011 09:55**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	165	0.5	100	74.73	91	80	120			
Nitrite (NO2) - N	9.99	0.25	10	0	99.9	80	120			
Nitrate (NO3) - N	12.1	0.25	10	1.128	110	80	120			
Phosphate, ortho - P	9.91	0.5	10	0	99	80	120			
Sulfate (SO4)	231	0.5	200	52.63	89	80	120			

### Sample Matrix Spike Duplicate

Type: **LFMD** Test Code: **EPA Method 300.0**

File ID: **36**

Batch ID: **26084**

Analysis Date: **03/02/2011 15:49**

Sample ID: **11030204-08ALFMD**

Units : **mg/L**

Run ID: **IC\_2\_110302A**

Prep Date: **03/02/2011 09:55**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	169	0.5	100	74.73	94	80	120	165.4	2.1(15)	
Nitrite (NO2) - N	10	0.25	10	0	100	80	120	9.993	0.3(15)	
Nitrate (NO3) - N	12.1	0.25	10	1.128	110	80	120	12.08	0.2(15)	
Phosphate, ortho - P	10.3	0.5	10	0	103	80	120	9.915	3.9(15)	
Sulfate (SO4)	233	0.5	200	52.63	90	80	120	230.7	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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Date:  
07-Mar-11

## QC Summary Report

Work Order:  
11030203

### Method Blank

Type **MBLK** Test Code: **EPA Method 314.0**

File ID: **14**

Batch ID: **26092**

Analysis Date: **03/02/2011 11:39**

Sample ID: **MB-26092**

Units: **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	ND		1							

### Laboratory Fortified Blank

Type **LFB** Test Code: **EPA Method 314.0**

File ID: **15**

Batch ID: **26092**

Analysis Date: **03/02/2011 11:57**

Sample ID: **LFB-26092**

Units: **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	25.4	2	25		102	85	115			

### Sample Matrix Spike

Type **LFM** Test Code: **EPA Method 314.0**

File ID: **20**

Batch ID: **26092**

Analysis Date: **03/02/2011 13:29**

Sample ID: **11030145-03ALFM**

Units: **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	50.3	2	25	24.07	105	80	120			

### Sample Matrix Spike Duplicate

Type **LFMD** Test Code: **EPA Method 314.0**

File ID: **21**

Batch ID: **26092**

Analysis Date: **03/02/2011 13:48**

Sample ID: **11030145-03ALFMD**

Units: **µg/L**

Run ID: **IC\_3\_110302A**

Prep Date: **03/02/2011 12:21**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	52.1	2	25	24.07	112	80	120	50.28	3.6(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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Date:  
07-Mar-11

## QC Summary Report

Work Order:  
11030203

### Method Blank

Type **MBLK** Test Code: **EPA Method 200.8**

File ID: 030211.B\059\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 16:41

Sample ID: MB-26081

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

Type **LCS** Test Code: **EPA Method 200.8**

File ID: 030211.B\060\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 16:47

Sample ID: LCS-26081

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0542	0.005	0.05		108	85	115			

### Sample Matrix Spike

Type **MS** Test Code: **EPA Method 200.8**

File ID: 030211.B\065\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 17:15

Sample ID: 11030145-03AMS

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0532	0.005	0.05	0	106	70	130			

### Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method 200.8**

File ID: 030211.B\066\_M.D\

Batch ID: 26081

Analysis Date: 03/02/2011 17:21

Sample ID: 11030145-03AMSD

Units : mg/L

Run ID: ICP/MS\_110302B

Prep Date: 03/02/2011 09:08

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0529	0.005	0.05	0	106	70	130	0.0532	0.6(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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Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030203

### Method Blank

File ID: 11030406.D

Sample ID: MBLK MS15W0304M

Analyte

Type MBLK Test Code: EPA Method SW8260B

Batch ID: MS15W0304M

Analysis Date: 03/04/2011 10:46

Units : µg/L

Run ID: MSD\_15\_110304B

Prep Date: 03/04/2011 10:46

Result

PQL

SpkVal

SpkRefVal

%REC

LCL(ME)

UCL(ME)

RPDRefVal

%RPD(Limit)

Qual

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	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)	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								
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	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								
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	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	1								
Surr: 1,2-Dichloroethane-d4	9.72			10		97	70	130		
Surr: Toluene-d8	10.6			10		106	70	130		





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Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030203

Surr: 4-Bromofluorobenzene

10.1

10

101

70

130



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Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030203

### Laboratory Control Spike

Type LCS Test Code: EPA Method SW8260B

File ID: 11030403.D

Batch ID: MS15W0304M

Analysis Date: 03/04/2011 09:31

Sample ID: LCS MS15W0304M

Units : µg/L

Run ID: MSD\_15\_110304B

Prep Date: 03/04/2011 09:31

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	6.7	1	10		67	70(70)	130			L50
Chloromethane	9	2	10		90	70	130			
Vinyl chloride	9.16	1	10		92	70	130			
Chloroethane	9.57	1	10		96	70	130			
Bromomethane	7.02	2	10		70	70	130			
Trichlorofluoromethane	9.16	1	10		92	70	130			
1,1-Dichloroethene	10.3	1	10		103	70	130			
Dichloromethane	9.45	2	10		95	70	130			
Freon-113	10.1	1	10		101	70	137			
trans-1,2-Dichloroethene	10.3	1	10		103	70	130			
Methyl tert-butyl ether (MTBE)	8.87	0.5	10		89	70	130			
1,1-Dichloroethane	10.4	1	10		104	70	130			
2-Butanone (MEK)	176	10	200		88	70	130			
cis-1,2-Dichloroethene	10.4	1	10		104	70	130			
Bromochloromethane	9.74	1	10		97	70	130			
Chloroform	9.37	1	10		94	70	130			
2,2-Dichloropropane	10.2	1	10		102	70	130			
1,2-Dichloroethane	9.03	1	10		90	70	130			
1,1,1-Trichloroethane	10.2	1	10		102	70	130			
1,1-Dichloropropene	10.6	1	10		106	70	130			
Carbon tetrachloride	9.05	1	10		91	70	130			
Benzene	9.88	0.5	10		99	70	130			
Dibromomethane	9.56	1	10		96	70	130			
1,2-Dichloropropane	10.6	1	10		106	70	130			
Trichloroethene	10.5	1	10		105	70	130			
Bromodichloromethane	10.2	1	10		102	70	130			
4-Methyl-2-pentanone (MIBK)	22.2	2.5	25		89	20	182			
cis-1,3-Dichloropropene	9.61	1	10		96	70	130			
trans-1,3-Dichloropropene	8.36	1	10		84	70	130			
1,1,2-Trichloroethane	9.55	1	10		96	70	130			
Toluene	10.7	0.5	10		107	70	130			
1,3-Dichloropropane	10	1	10		100	70	130			
Dibromochloromethane	9.83	1	10		98	70	130			
1,2-Dibromoethane (EDB)	20.2	2	20		101	70	130			
Tetrachloroethene	10.5	1	10		105	70	130			
1,1,1,2-Tetrachloroethane	10.7	1	10		107	70	130			
Chlorobenzene	10.5	1	10		105	70	130			
Ethylbenzene	10.6	0.5	10		106	70	130			
m,p-Xylene	10.8	0.5	10		108	70	130			
Bromoform	9.01	1	10		90	70	130			
Styrene	10.9	1	10		109	70	130			
o-Xylene	10.9	0.5	10		109	70	130			
1,1,2,2-Tetrachloroethane	9.58	1	10		96	70	130			
1,2,3-Trichloropropane	18.4	2	20		92	70	130			
Isopropylbenzene	11	1	10		110	70	130			
Bromobenzene	10.3	1	10		103	70	130			
n-Propylbenzene	11.3	1	10		113	70	130			
4-Chlorotoluene	11.4	1	10		114	70	130			
2-Chlorotoluene	10.9	1	10		109	70	130			
1,3,5-Trimethylbenzene	11	1	10		110	70	130			
tert-Butylbenzene	10.7	1	10		107	70	130			
1,2,4-Trimethylbenzene	11.1	1	10		111	70	130			
sec-Butylbenzene	10.8	1	10		108	70	130			
1,3-Dichlorobenzene	10.9	1	10		109	70	130			
1,4-Dichlorobenzene	10.3	1	10		103	70	130			
4-Isopropyltoluene	10.9	1	10		109	70	130			
1,2-Dichlorobenzene	9.91	1	10		99	70	130			
n-Butylbenzene	11.5	1	10		115	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	43.3	3	50		87	67	130			
1,2,4-Trichlorobenzene	10.7	2	10		107	70	130			
Naphthalene	9.22	2	10		92	70	130			
Hexachlorobutadiene	18.7	2	20		93	70	130			
1,2,3-Trichlorobenzene	10.5	2	10		105	70	130			
Surr: 1,2-Dichloroethane-d4	9.26		10		93	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			



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**Date:**  
08-Mar-2011

## QC Summary Report

**Work Order:**  
11030203

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Surr: 4-Bromofluorobenzene	10.2	10	102	70	130
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Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030203

### Sample Matrix Spike

Type MS Test Code: EPA Method SW8260B

File ID: 11030409.D

Batch ID: MS15W0304M

Analysis Date: 03/04/2011 11:50

Sample ID: 11030203-01AMS

Units: µg/L

Run ID: MSD\_15\_110304B

Prep Date: 03/04/2011 11:50

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	40.6	2.5	50	0	81	21	138			
Chloromethane	50.9	10	50	0	102	23	144			
Vinyl chloride	51.5	2.5	50	0	103	49	136			
Chloroethane	52.4	2.5	50	0	105	21	159			
Bromomethane	33.6	10	50	0	67	10	174			
Trichlorofluoromethane	50.2	2.5	50	0	100	32	154			
1,1-Dichloroethene	53.1	2.5	50	0	106	64	130			
Dichloromethane	48.5	10	50	0	97	69	130			
Freon-113	54	2.5	50	0	108	55	141			
trans-1,2-Dichloroethene	52.5	2.5	50	0	105	63	130			
Methyl tert-butyl ether (MTBE)	51.5	1.3	50	0	103	47	150			
1,1-Dichloroethane	52.7	2.5	50	0	105	66	130			
2-Butanone (MEK)	814	50	1000	0	81	23	182			
cis-1,2-Dichloroethene	53.4	2.5	50	0	107	70	130			
Bromochloromethane	51.7	2.5	50	0	103	70	132			
Chloroform	58.6	2.5	50	10.36	96	70	130			
2,2-Dichloropropane	52.4	2.5	50	0	105	38	154			
1,2-Dichloroethane	49	2.5	50	0	98	65	134			
1,1,1-Trichloroethane	51.3	2.5	50	0	103	65	136			
1,1-Dichloropropene	53.9	2.5	50	0	108	68	132			
Carbon tetrachloride	46.7	2.5	50	0	93	58	148			
Benzene	50.3	1.3	50	0	101	59	138			
Dibromomethane	53	2.5	50	0	106	70	130			
1,2-Dichloropropane	55.8	2.5	50	0	112	70	131			
Trichloroethene	52.4	2.5	50	0	105	65	144			
Bromodichloromethane	69	2.5	50	15.75	106	50	157			
4-Methyl-2-pentanone (MIBK)	124	13	125	0	99	20	182			
cis-1,3-Dichloropropene	47.7	2.5	50	0	95	63	131			
trans-1,3-Dichloropropene	42.6	2.5	50	0	85	65	136			
1,1,2-Trichloroethane	52.6	2.5	50	0	105	70	131			
Toluene	54.9	1.3	50	0	110	68	130			
1,3-Dichloropropane	57.1	2.5	50	0	114	70	130			
Dibromochloromethane	69.2	2.5	50	16.65	105	42	155			
1,2-Dibromoethane (EDB)	112	5	100	0	112	70	130			
Tetrachloroethene	53.5	2.5	50	0	107	65	130			
1,1,1,2-Tetrachloroethane	54.3	2.5	50	0	109	70	130			
Chlorobenzene	52.6	2.5	50	0	105	70	130			
Ethylbenzene	52.3	1.3	50	0	105	68	130			
m,p-Xylene	52.6	1.3	50	0	105	68	131			
Bromoform	51.6	2.5	50	5.01	93	65	143			
Styrene	48.2	2.5	50	0	96	59	153			
o-Xylene	52.9	1.3	50	0	106	70	130			
1,1,2,2-Tetrachloroethane	53.4	2.5	50	0	107	67	130			
1,2,3-Trichloropropane	99	10	100	0	99	70	130			
Isopropylbenzene	52.7	2.5	50	0	105	55	138			
Bromobenzene	50.4	2.5	50	0	101	70	130			
n-Propylbenzene	53.5	2.5	50	0	107	67	133			
4-Chlorotoluene	54.1	2.5	50	0	108	70	130			
2-Chlorotoluene	53.1	2.5	50	0	106	70	130			
1,3,5-Trimethylbenzene	53.2	2.5	50	0	106	67	134			
tert-Butylbenzene	51.6	2.5	50	0	103	55	147			
1,2,4-Trimethylbenzene	53.5	2.5	50	0	107	65	135			
sec-Butylbenzene	53.2	2.5	50	0	106	68	135			
1,3-Dichlorobenzene	53.5	2.5	50	0	107	70	130			
1,4-Dichlorobenzene	51.3	2.5	50	0	103	70	130			
4-Isopropyltoluene	53.5	2.5	50	0	107	68	132			
1,2-Dichlorobenzene	50.4	2.5	50	0	101	70	130			
n-Butylbenzene	56.6	2.5	50	0	113	62	134			
1,2-Dibromo-3-chloropropane (DBCP)	247	15	250	0	99	64	130			
1,2,4-Trichlorobenzene	58.8	10	50	0	118	62	133			
Naphthalene	50.2	10	50	0	100	32	166			
Hexachlorobutadiene	98.7	10	100	0	99	63	130			
1,2,3-Trichlorobenzene	58.3	10	50	0	117	55	138			
Surr: 1,2-Dichloroethane-d4	47.6		50		95	70	130			
Surr: Toluene-d8	51.9		50		104	70	130			



# Alpha Analytical, Inc.

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

Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030203

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Surr: 4-Bromofluorobenzene	49.1	50	98	70	130
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Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030203

### Sample Matrix Spike Duplicate

Type MSD Test Code: EPA Method SW8260B

File ID: 11030410.D

Batch ID: MS15W0304M

Analysis Date: 03/04/2011 12:12

Sample ID: 11030203-01AMSD

Units: µg/L

Run ID: MSD\_15\_110304B

Prep Date: 03/04/2011 12:12

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	39.3	2.5	50	0	79	21	138	40.63	3.3(33)	
Chloromethane	49	10	50	0	98	23	144	50.86	3.8(27)	
Vinyl chloride	49.5	2.5	50	0	99	49	136	51.46	3.8(21)	
Chloroethane	50.3	2.5	50	0	101	21	159	52.44	4.3(40)	
Bromomethane	37	10	50	0	74	10	174	33.64	9.6(40)	
Trichlorofluoromethane	48.9	2.5	50	0	98	32	154	50.18	2.6(37)	
1,1-Dichloroethene	50.7	2.5	50	0	101	64	130	53.11	4.7(21)	
Dichloromethane	46.5	10	50	0	93	69	130	48.5	4.2(20)	
Freon-113	51.5	2.5	50	0	103	55	141	54.01	4.7(40)	
trans-1,2-Dichloroethene	50.2	2.5	50	0	100	63	130	52.51	4.5(20)	
Methyl tert-butyl ether (MTBE)	49.2	1.3	50	0	98	47	150	51.49	4.5(40)	
1,1-Dichloroethane	51.3	2.5	50	0	103	66	130	52.73	2.8(20)	
2-Butanone (MEK)	764	50	1000	0	76	23	182	814.1	6.3(22)	
cis-1,2-Dichloroethene	51.8	2.5	50	0	104	70	130	53.42	3.1(20)	
Bromochloromethane	49	2.5	50	0	98	70	132	51.73	5.4(20)	
Chloroform	57.3	2.5	50	10.36	94	70	130	58.56	2.2(20)	
2,2-Dichloropropane	52.1	2.5	50	0	104	38	154	52.39	0.5(22)	
1,2-Dichloroethane	46.5	2.5	50	0	93	65	134	49.02	5.4(20)	
1,1,1-Trichloroethane	50.1	2.5	50	0	100	65	136	51.27	2.4(20)	
1,1-Dichloropropene	52.1	2.5	50	0	104	68	132	53.91	3.5(20)	
Carbon tetrachloride	46.9	2.5	50	0	94	58	148	46.65	0.5(20)	
Benzene	48.7	1.3	50	0	97	59	138	50.26	3.2(21)	
Dibromomethane	49.9	2.5	50	0	99.7	70	130	52.96	6.0(20)	
1,2-Dichloropropane	53.3	2.5	50	0	107	70	131	55.8	4.6(20)	
Trichloroethene	50	2.5	50	0	100	65	144	52.42	4.7(20)	
Bromodichloromethane	67.7	2.5	50	15.75	104	50	157	68.95	1.8(20)	
4-Methyl-2-pentanone (MIBK)	115	13	125	0	92	20	182	123.7	7.7(20)	
cis-1,3-Dichloropropene	46.1	2.5	50	0	92	63	131	47.73	3.5(20)	
trans-1,3-Dichloropropene	41.9	2.5	50	0	84	65	136	42.55	1.5(20)	
1,1,2-Trichloroethane	48.8	2.5	50	0	98	70	131	52.58	7.5(20)	
Toluene	53.7	1.3	50	0	107	68	130	54.94	2.2(20)	
1,3-Dichloropropane	54.3	2.5	50	0	109	70	130	57.09	5.0(20)	
Dibromochloromethane	68.1	2.5	50	16.65	103	42	155	69.21	1.6(20)	
1,2-Dibromoethane (EDB)	107	5	100	0	107	70	130	112.1	4.5(20)	
Tetrachloroethene	51.9	2.5	50	0	104	65	130	53.5	3.0(20)	
1,1,1,2-Tetrachloroethane	53.9	2.5	50	0	108	70	130	54.25	0.7(20)	
Chlorobenzene	51.2	2.5	50	0	102	70	130	52.57	2.6(20)	
Ethylbenzene	50.7	1.3	50	0	101	68	130	52.27	3.0(20)	
m,p-Xylene	51.8	1.3	50	0	104	68	131	52.63	1.5(20)	
Bromoform	51.6	2.5	50	5.01	93	65	143	51.56	0.1(20)	
Styrene	48.7	2.5	50	0	97	59	153	48.24	0.9(37)	
o-Xylene	51	1.3	50	0	102	70	130	52.94	3.8(20)	
1,1,2,2-Tetrachloroethane	49.2	2.5	50	0	98	67	130	53.42	8.2(20)	
1,2,3-Trichloropropane	93.2	10	100	0	93	70	130	98.96	6.0(20)	
Isopropylbenzene	52.6	2.5	50	0	105	55	138	52.74	0.4(20)	
Bromobenzene	49.9	2.5	50	0	99.7	70	130	50.36	1.0(20)	
n-Propylbenzene	54.2	2.5	50	0	108	67	133	53.48	1.3(30)	
4-Chlorotoluene	53.9	2.5	50	0	108	70	130	54.05	0.3(20)	
2-Chlorotoluene	51.4	2.5	50	0	103	70	130	53.11	3.2(20)	
1,3,5-Trimethylbenzene	52.9	2.5	50	0	106	67	134	53.17	0.4(21)	
tert-Butylbenzene	51.9	2.5	50	0	104	55	147	51.55	0.7(20)	
1,2,4-Trimethylbenzene	52.9	2.5	50	0	106	65	135	53.48	1.2(25)	
sec-Butylbenzene	53.2	2.5	50	0	106	68	135	53.21	0.0(20)	
1,3-Dichlorobenzene	54	2.5	50	0	108	70	130	53.51	0.8(20)	
1,4-Dichlorobenzene	51.1	2.5	50	0	102	70	130	51.26	0.3(20)	
4-Isopropyltoluene	53.8	2.5	50	0	108	68	132	53.53	0.6(20)	
1,2-Dichlorobenzene	50.4	2.5	50	0	101	70	130	50.35	0.2(20)	
n-Butylbenzene	58.1	2.5	50	0	116	62	134	56.6	2.6(21)	
1,2-Dibromo-3-chloropropane (DBCP)	241	15	250	0	96	64	130	246.6	2.3(20)	
1,2,4-Trichlorobenzene	57.4	10	50	0	115	62	133	58.81	2.4(29)	
Naphthalene	48.7	10	50	0	97	32	166	50.18	3.1(40)	
Hexachlorobutadiene	104	10	100	0	104	63	130	98.71	5.6(21)	
1,2,3-Trichlorobenzene	56	10	50	0	112	55	138	58.26	3.9(36)	
Surr: 1,2-Dichloroethane-d4	46.8		50		94	70	130			
Surr: Toluene-d8	52.2		50		104	70	130			



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Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030203

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Surr: 4-Bromofluorobenzene	50.2	50	100	70	130
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### 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.

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

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

**Billing Information :**

**CHAIN-OF-CUSTODY RECORD**

**CA**

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

**WorkOrder : BMIS11030203**  
**Report Due By : 5:00 PM On : 16-Mar-2011**

**Client:**  
 Battelle Memorial Institute  
 655 West Broadway  
 Suite 1420  
 San Diego, CA 92101  
 PO : 218013

**Report Attention**    **Phone Number**    **Email Address**  
 David Conner    (619) 726-7311 x    connerd@battelle.org  
 Betsy Cuite    (614) 424-4899 x    cuitsee@battelle.org  
 Shane Walton    (614) 424-4117 x    waltonss@battelle.org

EDD Required : Yes

Sampled by : David Loera

Cooler Temp    Samples Received    Date Printed  
 2 °C    02-Mar-2011    02-Mar-2011

Client's COC # : 53567    Job : G005862/JPL Groundwater Monitoring  
 QC Level : DS4    = DOD QC Required : Final Rpt, MBLK, InitCal/ConCal data, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Collection Date	No. of Bottles		Requested Tests			Sample Remarks				
			Alpha	Sub	300_0_W	314_W	METALS_D W		VOC_TIC_W	VOC_W		
BM11030203-01A	MW-16	AQ 03/01/11 17:15	9	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Cr	VOC by 524 Criteria	VOC by 524 Criteria		
BM11030203-02A	Trip Blank	AQ 03/01/11 00:00	1	0	10				VOC by 524 Criteria	VOC by 524 Criteria		Reno Trip Blank 1/19/11

**Comments:** No security seals. Frozen ice. Temp Blank #6908 received @ 2°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). Trip blank unmarked for analysis per client notes added VOCs.:

Logged in by: Empbuth    Signature: Adcox    Print Name: Elizabeth Adcox    Company: Alpha Analytical, Inc.    Date/Time: 3:21 1029

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. 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:**

Company Name Battelle  
 Attn: SOS King's Ave  
 Address Columbus OH 43201  
 City, State, Zip OH 43201  
 Phone Number \_\_\_\_\_ Fax \_\_\_\_\_



**Samples Collected From Which State?**  
 AZ  CA  NV  WA   
 ID  OR  OTHER   
**DOD Site** \_\_\_\_\_ Page # \_\_\_\_\_ of \_\_\_\_\_

53567

Consultant / Client Name <u>David Loner</u>		Job # <u>6005862/5PL 6UM</u>	Job Name <u>3PL-6UD-1811</u>
Address		Report Attention / Project Manager <u>David Loner</u>	
City, State, Zip		Name: <u>David Loner</u>	Email: <u>loner@battelle.com</u>
		Phone: <u>(619) 726-7311</u>	Mobile: <u>(619) 726-7311</u>
Time Sampled	Date Sampled	Matrix* See Key Below	P.O. # <u>218013</u>
			Lab ID Number (Use Only) <u>BMI103020301</u>
			Office (Use Only) <u>02</u>
			Sample Description <u>MUD-16</u>
			TAT <u>15</u>
			Field Filtered <u>15</u>
			# Containers** <u>14</u>
			VOCs (524.2)
			Total Cr (200.8)
			Perchlorate (314.0)
			*300
			REMARKS
			Global ID #
			EDD / EDF? YES ___ NO ___
			Data Validation Level: III or IV

**ADDITIONAL INSTRUCTIONS:** \* Chloride, Nitrate, Nitrite, Orthophosphate, Sulfate

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled By: David Loner

Relinquished by: (Signature/Affiliation) <u>David Loner</u>	Received by: (Signature/Affiliation) <u>Emerson</u>	Date:	Time:
Relinquished by: (Signature/Affiliation) <u>David Loner</u>	Received by: (Signature/Affiliation) <u>Emerson</u>	Date: <u>3.2.11</u>	Time: <u>10:29</u>
Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date:	Time:

\*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air \*\* L-Liter V-Voa S-Soil Jar O-Orbo T-Teclat 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 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: 08-Mar-2011

David Conner  
Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
(619) 726-7311

Suite 1420

## CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring

Work Order: BMI11030204

Cooler Temp: 0 °C

Alpha's Sample ID	Client's Sample ID	Matrix
11030204-01A	MW-20-5	Aqueous
11030204-02A	MW-20-4	Aqueous
11030204-03A	MW-20-3	Aqueous
11030204-04A	MW-20-2	Aqueous
11030204-05A	MW-20-1	Aqueous
11030204-06A	EB-06-03/01/11	Aqueous
11030204-07A	TB-06-03/01/11	Aqueous
11030204-08A	MW-7	Aqueous

### Manually Integrated Analytes

<u>Alpha's Sample ID</u>	<u>Test Reference</u>	<u>Analyte</u>
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*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / 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  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/02/11

Job: G005862/JPL Groundwater Monitoring

Anions by IC  
EPA Method 300.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-7				
Lab ID: BMI11030204-08A Chloride	75	50 mg/L	03/02/11 09:55	03/02/11 13:39
Date Sampled 03/01/11 14:40 Nitrite (NO2) - N	ND	0.25 mg/L	03/02/11 09:55	03/02/11 13:39
Nitrate (NO3) - N	1.1	0.25 mg/L	03/02/11 09:55	03/02/11 13:39
Phosphate, ortho - P	ND	0.50 mg/L	03/02/11 09:55	03/02/11 13:39
Sulfate (SO4)	53	0.50 mg/L	03/02/11 09:55	03/02/11 13:39

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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*e*  
3/14/11

**Report Date**



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## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/02/11

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 : BMI11030204-01A Perchlorate	ND	1.00 µg/L	03/02/11 12:21	03/02/11 15:38
Date Sampled 03/01/11 08:29				
Client ID: MW-20-4				
Lab ID : BMI11030204-02A Perchlorate	ND	1.00 µg/L	03/02/11 12:21	03/08/11 14:05
Date Sampled 03/01/11 09:00				
Client ID: MW-20-3				
Lab ID : BMI11030204-03A Perchlorate	ND	1.00 µg/L	03/02/11 12:21	03/08/11 14:48
Date Sampled 03/01/11 09:25				
Client ID: MW-20-2				
Lab ID : BMI11030204-04A Perchlorate	3.82	1.00 µg/L	03/02/11 12:21	03/02/11 17:10
Date Sampled 03/01/11 09:49				
Client ID: MW-20-1				
Lab ID : BMI11030204-05A Perchlorate	ND	1.00 µg/L	03/02/11 12:21	03/02/11 17:29
Date Sampled 03/01/11 10:23				
Client ID: EB-06-03/01/11				
Lab ID : BMI11030204-06A Perchlorate	ND	1.00 µg/L	03/02/11 12:21	03/02/11 17:47
Date Sampled 03/01/11 10:03				
Client ID: MW-7				
Lab ID : BMI11030204-08A Perchlorate	3.11	1.00 µg/L	03/02/11 12:21	03/02/11 18:05
Date Sampled 03/01/11 14:40				

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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3/14/11

**Report Date**



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San Diego, CA 92101

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641  
Date Received : 03/02/11

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS  
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: MW-20-5				
Lab ID : BM111030204-01A Chromium (Cr)	0.028	0.0050 mg/L	03/02/11 09:08	03/02/11 18:18
Date Sampled 03/01/11 08:29				
Client ID: MW-20-4				
Lab ID : BM111030204-02A Chromium (Cr)	ND	0.0050 mg/L	03/02/11 09:08	03/02/11 18:46
Date Sampled 03/01/11 09:00				
Client ID: MW-20-3				
Lab ID : BM111030204-03A Chromium (Cr)	ND	0.0050 mg/L	03/02/11 09:08	03/02/11 18:52
Date Sampled 03/01/11 09:25				
Client ID: MW-20-2				
Lab ID : BM111030204-04A Chromium (Cr)	ND	0.0050 mg/L	03/02/11 09:08	03/02/11 18:57
Date Sampled 03/01/11 09:49				
Client ID: MW-20-1				
Lab ID : BM111030204-05A Chromium (Cr)	ND	0.0050 mg/L	03/02/11 09:08	03/02/11 19:03
Date Sampled 03/01/11 10:23				
Client ID: EB-06-03/01/11				
Lab ID : BM111030204-06A Chromium (Cr)	ND	0.0050 mg/L	03/02/11 09:08	03/02/11 19:09
Date Sampled 03/01/11 10:03				
Client ID: MW-7				
Lab ID : BM111030204-08A Chromium (Cr)	0.015	0.0050 mg/L	03/02/11 09:08	03/02/11 19:15
Date Sampled 03/01/11 14:40				

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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✓  
3/14/11

Report Date



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## ANALYTICAL REPORT

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655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

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

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID : <b>MW-20-5</b> Lab ID : BMI11030204-01A Date Received : 03/02/11 Date Sampled : 03/01/11 08:29	Sulfur dioxide	10	2.0 µg/L	03/04/11 14:43	03/04/11 14:43
Client ID : <b>MW-20-4</b> Lab ID : BMI11030204-02A Date Received : 03/02/11 Date Sampled : 03/01/11 09:00	Sulfur dioxide	14	2.0 µg/L	03/04/11 15:04	03/04/11 15:04
Client ID : <b>MW-20-3</b> Lab ID : BMI11030204-03A Date Received : 03/02/11 Date Sampled : 03/01/11 09:25	Sulfur dioxide	9.1	2.0 µg/L	03/04/11 15:26	03/04/11 15:26
Client ID : <b>MW-20-2</b> Lab ID : BMI11030204-04A Date Received : 03/02/11 Date Sampled : 03/01/11 09:49	Sulfur dioxide	3.8	2.0 µg/L	03/04/11 15:48	03/04/11 15:48
Client ID : <b>MW-20-1</b> Lab ID : BMI11030204-05A Date Received : 03/02/11 Date Sampled : 03/01/11 10:23	Sulfur dioxide	3.5	2.0 µg/L	03/04/11 16:09	03/04/11 16:09
Client ID : <b>EB-06-03/01/11</b> Lab ID : BMI11030204-06A Date Received : 03/02/11 Date Sampled : 03/01/11 10:03	*** None Found ***	ND	2.0 µg/L	03/04/11 13:38	03/04/11 13:38
Client ID : <b>TB-06-03/01/11</b> Lab ID : BMI11030204-07A Date Received : 03/02/11 Date Sampled : 03/01/11 07:00	*** None Found ***	ND	2.0 µg/L	03/04/11 13:17	03/04/11 13:17
Client ID : <b>MW-7</b> Lab ID : BMI11030204-08A Date Received : 03/02/11 Date Sampled : 03/01/11 14:40	*** None Found ***	ND	2.0 µg/L	03/04/11 16:31	03/04/11 16:31



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

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Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*

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 • (714) 386-2901 / info@alpha-analytical.com

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

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*WJG*

3/14/11

**Report Date**

Page 1 of 1



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-01A  
Client I.D. Number: MW-20-5

Sampled: 03/01/11 08:29  
Received: 03/02/11  
Extracted: 03/04/11 14:43  
Analyzed: 03/04/11 14:43

### 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	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 (DBCP)	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	109	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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 • (714) 386-2901 / info@alpha-analytical.com

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3/14/11

Report Date





# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-02A  
Client I.D. Number: MW-20-4

Sampled: 03/01/11 09:00  
Received: 03/02/11  
Extracted: 03/04/11 15:04  
Analyzed: 03/04/11 15:04

### 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	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 (DBCP)	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	111	(70-130) %REC
31 Toluene	ND	0.50 µg/L	66 Surr: 4-Bromofluorobenzene	96	(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			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/14/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-03A  
Client I.D. Number: MW-20-3

Sampled: 03/01/11 09:25  
Received: 03/02/11  
Extracted: 03/04/11 15:26  
Analyzed: 03/04/11 15:26

### 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	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	0.55	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	111	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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Page 1 of 1



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-04A  
Client I.D. Number: MW-20-2

Sampled: 03/01/11 09:49  
Received: 03/02/11  
Extracted: 03/04/11 15:48  
Analyzed: 03/04/11 15:48

### 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	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 (DBCP)	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	99	(70-130) %REC
30 1,1,2-Trichloroethane	ND	0.50 µg/L	65 Surr: Toluene-d8	111	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.  
ND = Not Detected

*Roger Scholl*      *Randy Gardner*      *Walter Hinchman*  
Roger L. Scholl, Ph.D., Laboratory Director • Randy Gardner, Laboratory Manager • Walter Hinchman, Quality Assurance Officer  
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3/14/11

Report Date



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

## ANALYTICAL REPORT

Battelle Memorial Institute  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-05A  
Client I.D. Number: MW-20-1

Sampled: 03/01/11 10:23  
Received: 03/02/11  
Extracted: 03/04/11 16:09  
Analyzed: 03/04/11 16:09

### 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	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 (DBCP)	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	110	(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			
33 Dibromochloromethane	ND	0.50 µg/L			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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 • (714) 386-2901 / info@alpha-analytical.com

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

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3/14/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-06A  
Client I.D. Number: EB-06-03/01/11

Sampled: 03/01/11 10:03  
Received: 03/02/11  
Extracted: 03/04/11 13:38  
Analyzed: 03/04/11 13:38

### 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	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 (DBCP)	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	103	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

*Roger Scholl*

*Randy Gardner*

*Walter Hinchman*

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 • (714) 386-2901 / info@alpha-analytical.com

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*[Signature]*

3/14/11

Report Date



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-07A  
Client I.D. Number: TB-06-03/01/11

Sampled: 03/01/11 07:00  
Received: 03/02/11  
Extracted: 03/04/11 13:17  
Analyzed: 03/04/11 13:17

### 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	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 (DBCP)	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	105	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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 • (714) 386-2901 / info@alpha-analytical.com

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3/14/11

Report Date

Page 1 of 1



# Alpha Analytical, Inc.

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  
655 West Broadway  
San Diego, CA 92101  
Job: G005862/JPL Groundwater Monitoring

Attn: David Conner  
Phone: (619) 726-7311  
Fax: (614) 458-6641

Alpha Analytical Number: BMI11030204-08A  
Client I.D. Number: MW-7

Sampled: 03/01/11 14:40  
Received: 03/02/11  
Extracted: 03/04/11 16:31  
Analyzed: 03/04/11 16:31

### 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	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	15	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 (DBCP)	ND	2.5 µg/L
25 Trichloroethene	ND	0.50 µg/L	60 1,2,4-Trichlorobenzene	ND	1.0 µg/L
26 Bromodichloromethane	8.7	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	111	(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			
34 1,2-Dibromoethane (EDB)	ND	1.0 µg/L			
35 Tetrachloroethene	ND	0.50 µg/L			

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  
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3/14/11

Report Date



# Alpha Analytical, Inc.

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:** BMI11030204

**Job:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
11030204-01A	MW-20-5	Aqueous	2
11030204-02A	MW-20-4	Aqueous	2
11030204-03A	MW-20-3	Aqueous	2
11030204-04A	MW-20-2	Aqueous	2
11030204-05A	MW-20-1	Aqueous	2
11030204-06A	EB-06-03/01/11	Aqueous	2
11030204-07A	TB-06-03/01/11	Aqueous	2
11030204-08A	MW-7	Aqueous	2

3/14/11  
**Report Date**





# Alpha Analytical, Inc.

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

Date:  
14-Mar-11

## QC Summary Report

Work Order:  
11030204

### Method Blank

Method Blank		Type: MBLK	Test Code: EPA Method 300.0							
File ID: 25			Batch ID: 26084					Analysis Date: 03/02/2011 12:25		
Sample ID: MB-26084	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	ND	0.5								
Nitrite (NO2) - N	ND	0.25								
Nitrate (NO3) - N	ND	0.25								
Phosphate, ortho - P	ND	0.5								
Sulfate (SO4)	ND	0.5								

### Laboratory Fortified Blank

Laboratory Fortified Blank		Type: LFB	Test Code: EPA Method 300.0							
File ID: 26			Batch ID: 26084					Analysis Date: 03/02/2011 12:44		
Sample ID: LFB-26084	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	52.9	0.5	50		106	90	110			
Nitrite (NO2) - N	4.82	0.25	5		96	90	110			
Nitrate (NO3) - N	5.47	0.25	5		109	90	110			
Phosphate, ortho - P	4.77	0.5	5		95	90	110			
Sulfate (SO4)	109	0.5	100		109	90	110			

### Sample Matrix Spike

Sample Matrix Spike		Type: LFM	Test Code: EPA Method 300.0							
File ID: 35			Batch ID: 26084					Analysis Date: 03/02/2011 15:30		
Sample ID: 11030204-08ALFM	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	165	0.5	100	74.73	91	80	120			
Nitrite (NO2) - N	9.99	0.25	10	0	99.9	80	120			
Nitrate (NO3) - N	12.1	0.25	10	1.128	110	80	120			
Phosphate, ortho - P	9.91	0.5	10	0	99	80	120			
Sulfate (SO4)	231	0.5	200	52.63	89	80	120			

### Sample Matrix Spike Duplicate

Sample Matrix Spike Duplicate		Type: LFMD	Test Code: EPA Method 300.0							
File ID: 36			Batch ID: 26084					Analysis Date: 03/02/2011 15:49		
Sample ID: 11030204-08ALFMD	Units : mg/L		Run ID: IC_2_110302A					Prep Date: 03/02/2011 09:55		
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	169	0.5	100	74.73	94	80	120	165.4	2.1(15)	
Nitrite (NO2) - N	10	0.25	10	0	100	80	120	9.993	0.3(15)	
Nitrate (NO3) - N	12.1	0.25	10	1.128	110	80	120	12.08	0.2(15)	
Phosphate, ortho - P	10.3	0.5	10	0	103	80	120	9.915	3.9(15)	
Sulfate (SO4)	233	0.5	200	52.63	90	80	120	230.7	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.



# Alpha Analytical, Inc.

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(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date:  
09-Mar-11

## QC Summary Report

Work Order:  
11030204

### Method Blank

File ID: 14	Type MBLK	Test Code: EPA Method 314.0	Batch ID: 26092	Analysis Date: 03/02/2011 11:39						
Sample ID: MB-26092	Units : µg/L	Run ID: IC_3_110302A	Prep Date: 03/02/2011 12:21							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	ND	1								

### Laboratory Fortified Blank

File ID: 15	Type LFB	Test Code: EPA Method 314.0	Batch ID: 26092	Analysis Date: 03/02/2011 11:57						
Sample ID: LFB-26092	Units : µg/L	Run ID: IC_3_110302A	Prep Date: 03/02/2011 12:21							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	25.4	2	25		102	85	115			

### Sample Matrix Spike

File ID: 20	Type LFM	Test Code: EPA Method 314.0	Batch ID: 26092	Analysis Date: 03/02/2011 13:29						
Sample ID: 11030145-03ALFM	Units : µg/L	Run ID: IC_3_110302A	Prep Date: 03/02/2011 12:21							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	50.3	2	25	24.07	105	80	120			

### Sample Matrix Spike Duplicate

File ID: 21	Type LFMD	Test Code: EPA Method 314.0	Batch ID: 26092	Analysis Date: 03/02/2011 13:48						
Sample ID: 11030145-03ALFMD	Units : µg/L	Run ID: IC_3_110302A	Prep Date: 03/02/2011 12:21							
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	52.1	2	25	24.07	112	80	120	50.28	3.6(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 Analytical, Inc.

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Date:  
07-Mar-11

## QC Summary Report

Work Order:  
11030204

### Method Blank

File ID:	Type	Test Code:								
030211.B\059_M.D\	MBLK	EPA Method 200.8								
Sample ID: MB-26081	Units : mg/L	Batch ID: 26081	Run ID: ICP/MS_110302B	Analysis Date: 03/02/2011 16:41						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	ND	0.005								

### Laboratory Control Spike

File ID:	Type	Test Code:								
030211.B\060_M.D\	LCS	EPA Method 200.8								
Sample ID: LCS-26081	Units : mg/L	Batch ID: 26081	Run ID: ICP/MS_110302B	Analysis Date: 03/02/2011 16:47						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0542	0.005	0.05		108	85	115			

### Sample Matrix Spike

File ID:	Type	Test Code:								
030211.B\065_M.D\	MS	EPA Method 200.8								
Sample ID: 11030145-03AMS	Units : mg/L	Batch ID: 26081	Run ID: ICP/MS_110302B	Analysis Date: 03/02/2011 17:15						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0532	0.005	0.05	0	106	70	130			

### Sample Matrix Spike Duplicate

File ID:	Type	Test Code:								
030211.B\066_M.D\	MSD	EPA Method 200.8								
Sample ID: 11030145-03AMSD	Units : mg/L	Batch ID: 26081	Run ID: ICP/MS_110302B	Analysis Date: 03/02/2011 17:21						
Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chromium (Cr)	0.0529	0.005	0.05	0	106	70	130	0.0532	0.6(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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Date:  
08-Mar-2011

## QC Summary Report

Work Order:  
11030204

Method Blank  
File ID: 11030406.D

Type MBLK Test Code: EPA Method SW8260B

Batch ID: MS15W0304M

Analysis Date: 03/04/2011 10:46

Sample ID: MBLK MS15W0304M

Units: µg/L

Run ID: MSD\_15\_110304B

Prep Date: 03/04/2011 10:46

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
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	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)	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								
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	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								
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	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	1								
Surr: 1,2-Dichloroethane-d4	9.72			10		97	70	130		
Surr: Toluene-d8	10.6			10		106	70	130		