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

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

Alpha Analytical Number: BMI10051302-05A
Client I.D. Number: MW-3-1

Sampled: 05/12/10 11:50
Received: 05/13/10
Extracted: 05/15/10 01:29
Analyzed: 05/15/10 01:29

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit		Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND		0.50	µg/L	36 1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	µg/L	37 Chlorobenzene	ND	0.50	µg/L
3	Vinyl chloride	ND		0.50	µg/L	38 Ethylbenzene	ND	0.50	µg/L
4	Chloroethane	ND		0.50	µg/L	39 m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	µg/L	40 Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41 Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42 o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	µg/L	43 1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	µg/L	44 1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45 Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46 Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47 n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	µg/L	48 4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49 2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	µg/L	50 1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	µg/L	51 tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52 1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53 sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54 1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55 1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56 4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	µg/L	57 1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	µg/L	58 n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59 1,2-Dibromo-3-chloropropane (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	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 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 Analytical, Inc. currently holds appropriate and available California (#2019) and NELAC (01154CA) certifications for the data reported. Test results relate only to reported samples.

5/26/10
Report Date

Alpha Analytical, Inc.

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ANALYTICAL REPORT

Battelle Memorial Institute
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051302-06A
Client I.D. Number: DUPE-05-2Q10

Sampled: 05/12/10 00:00
Received: 05/13/10
Extracted: 05/15/10 01:51
Analyzed: 05/15/10 01:51

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	µg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	µg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	1.8		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	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	1.3		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	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	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

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

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5/26/10
Report Date

Alpha Analytical, Inc.

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ANALYTICAL REPORT

Battelle Memorial Institute
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051302-07A
Client I.D. Number: EB-10-05/12/10

Sampled: 05/12/10 11:31
Received: 05/13/10
Extracted: 05/14/10 23:16
Analyzed: 05/14/10 23:16

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	µg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	µg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (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	107	(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 Scholl Randy Gardner Walter Hinchman

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5/26/10
Report Date

Alpha Analytical, Inc.

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ANALYTICAL REPORT

Battelle Memorial Institute
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051302-08A
Client I.D. Number: TB-10-05/12/10

Sampled: 05/12/10 07:00
Received: 05/13/10
Extracted: 05/14/10 22:53
Analyzed: 05/14/10 22:53

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND		0.50	µg/L	36	1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
2	Chloromethane	ND		1.0	µg/L	37	Chlorobenzene	ND	0.50	µg/L
3	Vinyl chloride	ND		0.50	µg/L	38	Ethylbenzene	ND	0.50	µg/L
4	Chloroethane	ND		0.50	µg/L	39	m,p-Xylene	ND	0.50	µg/L
5	Bromomethane	ND	Q	1.0	µg/L	40	Bromoform	ND	0.50	µg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	0.50	µg/L
7	1,1-Dichloroethene	ND		0.50	µg/L	42	o-Xylene	ND	0.50	µg/L
8	Dichloromethane	ND		1.0	µg/L	43	1,1,2,2-Tetrachloroethane	ND	0.50	µg/L
9	Freon-113	ND		0.50	µg/L	44	1,2,3-Trichloropropane	ND	1.0	µg/L
10	trans-1,2-Dichloroethene	ND		0.50	µg/L	45	Isopropylbenzene	ND	0.50	µg/L
11	Methyl tert-butyl ether (MTBE)	ND		0.50	µg/L	46	Bromobenzene	ND	0.50	µg/L
12	1,1-Dichloroethane	ND		0.50	µg/L	47	n-Propylbenzene	ND	0.50	µg/L
13	2-Butanone (MEK)	ND		10	µg/L	48	4-Chlorotoluene	ND	0.50	µg/L
14	cis-1,2-Dichloroethene	ND		0.50	µg/L	49	2-Chlorotoluene	ND	0.50	µg/L
15	Bromochloromethane	ND		0.50	µg/L	50	1,3,5-Trimethylbenzene	ND	0.50	µg/L
16	Chloroform	ND		0.50	µg/L	51	tert-Butylbenzene	ND	0.50	µg/L
17	2,2-Dichloropropane	ND		0.50	µg/L	52	1,2,4-Trimethylbenzene	ND	0.50	µg/L
18	1,2-Dichloroethane	ND		0.50	µg/L	53	sec-Butylbenzene	ND	0.50	µg/L
19	1,1,1-Trichloroethane	ND		0.50	µg/L	54	1,3-Dichlorobenzene	ND	0.50	µg/L
20	1,1-Dichloropropene	ND		0.50	µg/L	55	1,4-Dichlorobenzene	ND	0.50	µg/L
21	Carbon tetrachloride	ND		0.50	µg/L	56	4-Isopropyltoluene	ND	0.50	µg/L
22	Benzene	ND		0.50	µg/L	57	1,2-Dichlorobenzene	ND	0.50	µg/L
23	Dibromomethane	ND		0.50	µg/L	58	n-Butylbenzene	ND	0.50	µg/L
24	1,2-Dichloropropane	ND		0.50	µg/L	59	1,2-Dibromo-3-chloropropane (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	106	(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

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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5/26/10
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: BMI10051302 **Job:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
10051302-01A	MW-3-5	Aqueous	2
10051302-02A	MW-3-4	Aqueous	2
10051302-03A	MW-3-3	Aqueous	2
10051302-04A	MW-3-2	Aqueous	2
10051302-05A	MW-3-1	Aqueous	2
10051302-06A	DUPE-05-2Q10	Aqueous	2
10051302-07A	EB-10-05/12/10	Aqueous	2
10051302-08A	TB-10-05/12/10	Aqueous	2

5/26/10

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: 20-May-10

QC Summary Report

Work Order: 10051302

Method Blank

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

File ID: **21** Batch ID: **24247** Analysis Date: **05/13/2010 11:21**

Sample ID: **MB-24247** Units : **mg/L** Run ID: **IC_1_100513A** Prep Date: **05/13/2010 11:08**

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: **49** Batch ID: **24247** Analysis Date: **05/13/2010 19:59**

Sample ID: **LFB-24247** Units : **mg/L** Run ID: **IC_1_100513A** Prep Date: **05/13/2010 11:08**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	53.3	0.5	50		107	90	110			
Nitrite (NO2) - N	5.38	0.25	5		108	90	110			
Nitrate (NO3) - N	5.3	0.25	5		106	90	110			
Phosphate, ortho - P	5.02	0.5	5		100	90	110			
Sulfate (SO4)	108	0.5	100		108	90	110			

Sample Matrix Spike

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

File ID: **41** Batch ID: **24247** Analysis Date: **05/13/2010 17:31**

Sample ID: **10051302-01ALFM** Units : **mg/L** Run ID: **IC_1_100513A** Prep Date: **05/13/2010 11:08**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	121	0.5	100	13.45	108	80	120			
Nitrite (NO2) - N	10.3	0.25	10	0	103	80	120			
Nitrate (NO3) - N	9.94	0.25	10	0	99	80	120			
Phosphate, ortho - P	9.55	0.5	10	0	95	80	120			
Sulfate (SO4)	202	0.5	200	0	101	80	120			

Sample Matrix Spike Duplicate

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

File ID: **42** Batch ID: **24247** Analysis Date: **05/13/2010 17:50**

Sample ID: **10051302-01ALFMD** Units : **mg/L** Run ID: **IC_1_100513A** Prep Date: **05/13/2010 11:08**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	122	0.5	100	13.45	108	80	120	121.2	0.5(15)	
Nitrite (NO2) - N	10.5	0.25	10	0	105	80	120	10.26	2.5(15)	
Nitrate (NO3) - N	10.3	0.25	10	0	103	80	120	9.936	4.0(15)	
Phosphate, ortho - P	9.07	0.5	10	0	91	80	120	9.549	5.2(15)	
Sulfate (SO4)	203	0.5	200	0	101	80	120	201.5	0.6(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: *20-May-10*

QC Summary Report

Work Order: 10051302

Method Blank

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

File ID: **14** Batch ID: **24249** Analysis Date: **05/13/2010 12:51**

Sample ID: **MB-24249** Units : **µg/L** Run ID: **IC_3_100513A** Prep Date: **05/13/2010 11:54**

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: **24249** Analysis Date: **05/13/2010 13:09**

Sample ID: **LFB-24249** Units : **µg/L** Run ID: **IC_3_100513A** Prep Date: **05/13/2010 11:54**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	28	2	25		112	85	115			

Sample Matrix Spike

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

File ID: **32** Batch ID: **24249** Analysis Date: **05/13/2010 18:22**

Sample ID: **10051201-05ALFM** Units : **µg/L** Run ID: **IC_3_100513A** Prep Date: **05/13/2010 11:54**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	28.8	2	25	2.817	104	80	120			

Sample Matrix Spike Duplicate

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

File ID: **33** Batch ID: **24249** Analysis Date: **05/13/2010 18:41**

Sample ID: **10051201-05ALFMD** Units : **µg/L** Run ID: **IC_3_100513A** Prep Date: **05/13/2010 11:54**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	29.1	2	25	2.817	105	80	120	28.78	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: *20-May-10*

QC Summary Report

Work Order: 10051302

Laboratory Control Spike Type **LCS** Test Code: **SM2320B**

File ID: Batch ID: **W0514AL** Analysis Date: **05/14/2010 14:44**

Sample ID: **LCS-W0514AL** Units : **mg/L** Run ID: **WETLAB_100514E** Prep Date: **05/14/2010 14:44**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Alkalinity, Bicarbonate (As CaCO3)	242.4	10	250		97	80	120			
Alkalinity, Carbonate (As CaCO3)	242.4	10	250		97	80	120			
Alkalinity, Total (As CaCO3 at pH 4.5)	242	10	250		97	80	120			

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: 20-May-10

QC Summary Report

Work Order: 10051302

Method Blank

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

File ID: **051310.B\087SMPL.D** Batch ID: **24250K** Analysis Date: **05/14/2010 00:00**

Sample ID: **MB-24250** Units : **mg/L** Run ID: **ICP/MS_100513A** Prep Date: **05/13/2010 16:42**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	ND	0.5								
Magnesium (Mg)	ND	0.5								
Potassium (K)	ND	0.5								
Calcium (Ca)	ND	0.5								
Chromium (Cr)	ND	0.005								
Iron (Fe)	ND	0.1								
Arsenic (As)	ND	0.002								
Lead (Pb)	ND	0.005								

Laboratory Control Spike

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

File ID: **051310.B\088_LCS.D** Batch ID: **24250K** Analysis Date: **05/14/2010 00:06**

Sample ID: **LCS-24250** Units : **mg/L** Run ID: **ICP/MS_100513A** Prep Date: **05/13/2010 16:42**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	4.79	0.5	5		96	80	120			
Magnesium (Mg)	4.88	0.5	5		98	80	120			
Potassium (K)	4.7	0.5	5		94	80	120			
Calcium (Ca)	4.7	0.5	5		94	80	120			
Chromium (Cr)	0.0465	0.005	0.05		93	80	120			
Iron (Fe)	4.31	0.1	5		86	80	120			
Arsenic (As)	0.049	0.002	0.05		98	80	120			
Lead (Pb)	0.0504	0.005	0.05		101	80	120			

Sample Matrix Spike

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

File ID: **051310.B\092SMPL.D** Batch ID: **24250K** Analysis Date: **05/14/2010 00:28**

Sample ID: **10051302-05AMS** Units : **mg/L** Run ID: **ICP/MS_100513A** Prep Date: **05/13/2010 16:42**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	27.5	0.5	5	23.82	73	80	120			M3
Magnesium (Mg)	20.9	0.5	5	16.98	78	80	120			M2
Potassium (K)	7.26	0.5	5	2.941	86	80	120			
Calcium (Ca)	53.7	0.5	5	51.96	35	80	120			M3
Chromium (Cr)	0.045	0.005	0.05	0	90	80	120			
Iron (Fe)	4.57	0.1	5	0.3644	84	80	120			
Arsenic (As)	0.0483	0.002	0.05	0	97	80	120			
Lead (Pb)	0.0492	0.005	0.05	0	98	80	120			

Sample Matrix Spike Duplicate

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

File ID: **051310.B\093SMPL.D** Batch ID: **24250K** Analysis Date: **05/14/2010 00:34**

Sample ID: **10051302-05AMSD** Units : **mg/L** Run ID: **ICP/MS_100513A** Prep Date: **05/13/2010 16:42**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	28.6	0.5	5	23.82	96	80	120	27.48	4.0(20)	
Magnesium (Mg)	21.7	0.5	5	16.98	94	80	120	20.88	3.8(20)	
Potassium (K)	7.7	0.5	5	2.941	95	80	120	7.262	5.9(20)	
Calcium (Ca)	56.1	0.5	5	51.96	82	80	120	53.7	4.3(20)	
Chromium (Cr)	0.048	0.005	0.05	0	96	80	120	0.04496	6.5(20)	
Iron (Fe)	4.84	0.1	5	0.3644	89	80	120	4.569	5.7(20)	
Arsenic (As)	0.05	0.002	0.05	0	100	80	120	0.04826	3.5(20)	
Lead (Pb)	0.0507	0.005	0.05	0	101	80	120	0.04916	3.2(20)	

Comments:

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

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

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.

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QC Summary Report

Work Order: 10051302

Laboratory Control Spike Type **LCS** Test Code: **EPA Method 150.2 / SM4500HB / SW9040C**

File ID: Batch ID: **W0513PH** Analysis Date: **05/13/2010 13:59**

Sample ID: **LCS-W0513PH** Units : **pH Units** Run ID: **WETLAB_100513B** Prep Date: **05/13/2010 13:59**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
pH	4.98	1.7	5		99.6	90	110			

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: *20-May-10*

QC Summary Report

Work Order: 10051302

Method Blank

Type **MBLK** Test Code: **SM2540C**

File ID: Batch ID: **W0513DS** Analysis Date: **05/14/2010 00:00**

Sample ID: **MBLK-W0513DS** Units : **mg/L** Run ID: **WETLAB_100513E** Prep Date: **05/14/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	ND	10								

Laboratory Control Spike

Type **LCS** Test Code: **SM2540C**

File ID: Batch ID: **W0513DS** Analysis Date: **05/14/2010 00:00**

Sample ID: **LCS-W0513DS** Units : **mg/L** Run ID: **WETLAB_100513E** Prep Date: **05/14/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	81	10	100		81	80	120			

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: *24-May-10*

QC Summary Report

Work Order: 10051302

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

File ID: **10051435.D** Batch ID: **MS15W0514N** Analysis Date: **05/14/2010 21:25**

Sample ID: **MBLK MS15W0514N** Units : **µg/L** Run ID: **MSD_15_100514B** Prep Date: **05/14/2010 21:25**

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	10.1		10		101	70	130			
Surr: Toluene-d8	10.6		10		106	70	130			

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Date: 24-May-10

QC Summary Report

Work Order: 10051302

Surr: 4-Bromofluorobenzene	9.67		10	97	70	130			

Laboratory Control Spike Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **10051430.D** Batch ID: **MS15W0514N** Analysis Date: **05/14/2010 19:33**

Sample ID: **LCS MS15W0514N** Units : **µg/L** Run ID: **MSD_15_100514B** Prep Date: **05/14/2010 19:33**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	10.2	1	10		102	70	130			
Chloromethane	8.71	2	10		87	70	130			
Vinyl chloride	9.97	1	10		99.7	70	130			
Chloroethane	9.33	1	10		93	70	130			
Bromomethane	5.83	2	10		58	70(70)	130			L50
Trichlorofluoromethane	9.39	1	10		94	70	130			
1,1-Dichloroethene	11	1	10		110	70	130			
Dichloromethane	9.76	2	10		98	70	130			
trans-1,2-Dichloroethene	11	1	10		110	70	130			
Methyl tert-butyl ether (MTBE)	10.9	0.5	10		109	70	130			
1,1-Dichloroethane	10.8	1	10		108	70	130			
cis-1,2-Dichloroethene	10.7	1	10		107	70	130			
Bromochloromethane	10.6	1	10		106	70	130			
Chloroform	10.4	1	10		104	70	130			
2,2-Dichloropropane	8.89	1	10		89	70	130			
1,2-Dichloroethane	10.9	1	10		109	70	130			
1,1,1-Trichloroethane	11.1	1	10		111	70	130			
1,1-Dichloropropene	11.6	1	10		116	70	130			
Carbon tetrachloride	9.84	1	10		98	70	130			
Benzene	10.5	0.5	10		105	70	130			
Dibromomethane	11.1	1	10		111	70	130			
1,2-Dichloropropane	10	1	10		100	70	130			
Trichloroethene	11.3	1	10		113	70	130			
Bromodichloromethane	10.4	1	10		104	70	130			
cis-1,3-Dichloropropene	10.4	1	10		104	70	130			
trans-1,3-Dichloropropene	10.7	1	10		107	70	130			
1,1,2-Trichloroethane	11	1	10		110	70	130			
Toluene	9.75	0.5	10		98	70	130			
1,3-Dichloropropane	10.3	1	10		103	70	130			
Dibromochloromethane	10.5	1	10		105	70	130			
1,2-Dibromoethane (EDB)	21.3	2	20		107	70	130			
Tetrachloroethene	10.3	1	10		103	70	130			
1,1,1,2-Tetrachloroethane	10.3	1	10		103	70	130			
Chlorobenzene	10	1	10		100	70	130			
Ethylbenzene	9.95	0.5	10		100	70	130			
m,p-Xylene	9.95	0.5	10		100	70	130			
Bromoform	10.5	1	10		105	70	130			
Styrene	10.8	1	10		108	70	130			
o-Xylene	9.81	0.5	10		98	70	130			
1,1,2,2-Tetrachloroethane	9.36	1	10		94	70	130			
1,2,3-Trichloropropane	20.3	2	20		102	70	130			
Isopropylbenzene	10.2	1	10		102	70	130			
Bromobenzene	10.5	1	10		105	70	130			
n-Propylbenzene	10.5	1	10		105	70	130			
4-Chlorotoluene	10.4	1	10		104	70	130			
2-Chlorotoluene	10.5	1	10		105	70	130			
1,3,5-Trimethylbenzene	10.8	1	10		108	70	130			
tert-Butylbenzene	10.1	1	10		101	70	130			
1,2,4-Trimethylbenzene	10.6	1	10		106	70	130			
sec-Butylbenzene	9.96	1	10		99.6	70	130			
1,3-Dichlorobenzene	10.3	1	10		103	70	130			
1,4-Dichlorobenzene	9.81	1	10		98	70	130			
4-Isopropyltoluene	10.2	1	10		102	70	130			
1,2-Dichlorobenzene	9.93	1	10		99	70	130			
n-Butylbenzene	10.6	1	10		106	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	51.1	3	50		102	70	130			
1,2,4-Trichlorobenzene	10.7	2	10		107	70	130			
Naphthalene	9.81	2	10		98	70	130			
Hexachlorobutadiene	18.6	2	20		93	70	130			
1,2,3-Trichlorobenzene	10.3	2	10		103	70	130			
Surr: 1,2-Dichloroethane-d4	10.1		10		101	70	130			
Surr: Toluene-d8	9.59		10		96	70	130			
Surr: 4-Bromofluorobenzene	9.81		10		98	70	130			

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Date: 24-May-10

QC Summary Report

Work Order: 10051302

Sample Matrix Spike Type **MS** Test Code: **EPA Method SW8260B**

File ID: **10051436.D** Batch ID: **MS15W0514N** Analysis Date: **05/14/2010 21:47**

Sample ID: **10051202-01AMS** Units : **µg/L** Run ID: **MSD_15_100514B** Prep Date: **05/14/2010 21:47**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	38.2	2.5	50	0	76	13	167			
Chloromethane	37.6	10	50	0	75	28	145			
Vinyl chloride	43.3	2.5	50	0	87	43	134			
Chloroethane	40	2.5	50	0	80	39	154			
Bromomethane	35.5	10	50	0	71	19	176			
Trichlorofluoromethane	40.6	2.5	50	0	81	34	160			
1,1-Dichloroethene	48.5	2.5	50	0	97	60	130			
Dichloromethane	43.2	10	50	0	86	68	130			
trans-1,2-Dichloroethene	48.4	2.5	50	0	97	63	130			
Methyl tert-butyl ether (MTBE)	46.4	1.3	50	0	93	56	141			
1,1-Dichloroethane	47.3	2.5	50	0	95	61	130			
cis-1,2-Dichloroethene	47.4	2.5	50	0	95	70	130			
Bromochloromethane	45.2	2.5	50	0	90	70	130			
Chloroform	44.7	2.5	50	0	89	67	130			
2,2-Dichloropropane	35	2.5	50	0	70	30	152			
1,2-Dichloroethane	47.1	2.5	50	0	94	60	135			
1,1,1-Trichloroethane	48.2	2.5	50	0	96	59	137			
1,1-Dichloropropene	50.5	2.5	50	0	101	63	130			
Carbon tetrachloride	44.2	2.5	50	0	88	50	147			
Benzene	46.1	1.3	50	0	92	67	130			
Dibromomethane	46.5	2.5	50	0	93	69	133			
1,2-Dichloropropane	43.6	2.5	50	0	87	69	130			
Trichloroethene	46.5	2.5	50	0	93	69	130			
Bromodichloromethane	44.9	2.5	50	0	90	66	134			
cis-1,3-Dichloropropene	42.8	2.5	50	0	86	63	130			
trans-1,3-Dichloropropene	43.8	2.5	50	0	88	66	131			
1,1,2-Trichloroethane	45.2	2.5	50	0	90	68	130			
Toluene	41.9	1.3	50	0	84	66	130			
1,3-Dichloropropane	43.2	2.5	50	0	86	70	130			
Dibromochloromethane	42.8	2.5	50	0	86	70	130			
1,2-Dibromoethane (EDB)	88.7	5	100	0	89	70	130			
Tetrachloroethene	44.8	2.5	50	0	90	61	134			
1,1,1,2-Tetrachloroethane	43.2	2.5	50	0	86	70	130			
Chlorobenzene	42.7	2.5	50	0	85	70	130			
Ethylbenzene	42.9	1.3	50	0	86	68	130			
m,p-Xylene	43	1.3	50	0	86	64	130			
Bromoform	42.1	2.5	50	0	84	64	138			
Styrene	45.2	2.5	50	0	90	69	130			
o-Xylene	42.4	1.3	50	0	85	70	130			
1,1,2,2-Tetrachloroethane	42.8	2.5	50	0	86	65	131			
1,2,3-Trichloropropane	83.1	10	100	0	83	70	130			
Isopropylbenzene	44.6	2.5	50	0	89	64	138			
Bromobenzene	43.5	2.5	50	0	87	70	130			
n-Propylbenzene	46.1	2.5	50	0	92	66	132			
4-Chlorotoluene	45.3	2.5	50	0	91	70	130			
2-Chlorotoluene	45.5	2.5	50	0	91	70	130			
1,3,5-Trimethylbenzene	46.7	2.5	50	0	93	66	136			
tert-Butylbenzene	44.2	2.5	50	0	88	65	137			
1,2,4-Trimethylbenzene	45.8	2.5	50	0	92	65	137			
sec-Butylbenzene	44.8	2.5	50	0	90	66	134			
1,3-Dichlorobenzene	44.3	2.5	50	0	89	70	130			
1,4-Dichlorobenzene	42.2	2.5	50	0	84	70	130			
4-Isopropyltoluene	45.7	2.5	50	0	91	66	137			
1,2-Dichlorobenzene	42	2.5	50	0	84	70	130			
n-Butylbenzene	46.3	2.5	50	0	93	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	208	15	250	0	83	67	130			
1,2,4-Trichlorobenzene	44.1	10	50	0	88	61	137			
Naphthalene	37.3	10	50	0	75	40	167			
Hexachlorobutadiene	82.8	10	100	0	83	61	130			
1,2,3-Trichlorobenzene	41.9	10	50	0	84	51	144			
Surr: 1,2-Dichloroethane-d4	49.7		50		99	70	130			
Surr: Toluene-d8	47.5		50		95	70	130			
Surr: 4-Bromofluorobenzene	49.6		50		99	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: 24-May-10

QC Summary Report

Work Order: 10051302

Sample Matrix Spike Duplicate Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **10051437.D** Batch ID: **MS15W0514N** Analysis Date: **05/14/2010 22:09**

Sample ID: **10051202-01AMSD** Units : **µg/L** Run ID: **MSD_15_100514B** Prep Date: **05/14/2010 22:09**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	42.4	2.5	50	0	85	13	167	38.23	10.4(20)	
Chloromethane	42.2	10	50	0	84	28	145	37.57	11.7(20)	
Vinyl chloride	48.8	2.5	50	0	98	43	134	43.34	11.8(20)	
Chloroethane	43.5	2.5	50	0	87	39	154	40.03	8.3(20)	
Bromomethane	45.8	10	50	0	92	19	176	35.48	25.3(20)	R58
Trichlorofluoromethane	44.2	2.5	50	0	88	34	160	40.57	8.6(20)	
1,1-Dichloroethene	54.7	2.5	50	0	109	60	130	48.53	11.9(20)	
Dichloromethane	47.1	10	50	0	94	68	130	43.23	8.5(20)	
trans-1,2-Dichloroethene	52.8	2.5	50	0	106	63	130	48.38	8.7(20)	
Methyl tert-butyl ether (MTBE)	51.7	1.3	50	0	103	56	141	46.36	11.0(20)	
1,1-Dichloroethane	52.1	2.5	50	0	104	61	130	47.25	9.8(20)	
cis-1,2-Dichloroethene	51.5	2.5	50	0	103	70	130	47.4	8.3(20)	
Bromochloromethane	51.1	2.5	50	0	102	70	130	45.24	12.2(20)	
Chloroform	50.2	2.5	50	0	100	67	130	44.69	11.5(20)	
2,2-Dichloropropane	30.5	2.5	50	0	61	30	152	34.99	13.7(20)	
1,2-Dichloroethane	50.4	2.5	50	0	101	60	135	47.08	6.7(20)	
1,1,1-Trichloroethane	52.9	2.5	50	0	106	59	137	48.18	9.2(20)	
1,1-Dichloropropene	55.1	2.5	50	0	110	63	130	50.49	8.7(20)	
Carbon tetrachloride	47.3	2.5	50	0	95	50	147	44.22	6.8(20)	
Benzene	50.7	1.3	50	0	101	67	130	46.14	9.5(20)	
Dibromomethane	50.5	2.5	50	0	101	69	133	46.46	8.3(20)	
1,2-Dichloropropane	47.7	2.5	50	0	95	69	130	43.55	9.1(20)	
Trichloroethene	49.4	2.5	50	0	99	69	130	46.48	6.1(20)	
Bromodichloromethane	48.8	2.5	50	0	98	66	134	44.89	8.3(20)	
cis-1,3-Dichloropropene	45.7	2.5	50	0	91	63	130	42.82	6.4(20)	
trans-1,3-Dichloropropene	46.4	2.5	50	0	93	66	131	43.82	5.8(20)	
1,1,2-Trichloroethane	49.9	2.5	50	0	99.8	68	130	45.16	10.0(20)	
Toluene	46.6	1.3	50	0	93	66	130	41.91	10.5(20)	
1,3-Dichloropropane	47.1	2.5	50	0	94	70	130	43.24	8.6(20)	
Dibromochloromethane	47.4	2.5	50	0	95	70	130	42.81	10.1(20)	
1,2-Dibromoethane (EDB)	96.3	5	100	0	96	70	130	88.67	8.3(20)	
Tetrachloroethene	48.1	2.5	50	0	96	61	134	44.83	7.1(20)	
1,1,1,2-Tetrachloroethane	47.7	2.5	50	0	95	70	130	43.17	10.0(20)	
Chlorobenzene	47.3	2.5	50	0	95	70	130	42.65	10.3(20)	
Ethylbenzene	47.1	1.3	50	0	94	68	130	42.92	9.2(20)	
m,p-Xylene	47.5	1.3	50	0	95	64	130	42.97	10.0(20)	
Bromoform	46.8	2.5	50	0	94	64	138	42.12	10.5(20)	
Styrene	50	2.5	50	0	99.9	69	130	45.21	10.0(20)	
o-Xylene	46.8	1.3	50	0	94	70	130	42.41	9.9(20)	
1,1,2,2-Tetrachloroethane	46.2	2.5	50	0	92	65	131	42.8	7.6(20)	
1,2,3-Trichloropropane	92.3	10	100	0	92	70	130	83.06	10.5(20)	
Isopropylbenzene	49.7	2.5	50	0	99	64	138	44.56	10.9(20)	
Bromobenzene	48.6	2.5	50	0	97	70	130	43.53	11.0(20)	
n-Propylbenzene	51.5	2.5	50	0	103	66	132	46.08	11.1(20)	
4-Chlorotoluene	49.5	2.5	50	0	99	70	130	45.27	8.8(20)	
2-Chlorotoluene	50.8	2.5	50	0	102	70	130	45.54	11.0(20)	
1,3,5-Trimethylbenzene	52.2	2.5	50	0	104	66	136	46.7	11.2(20)	
tert-Butylbenzene	49.1	2.5	50	0	98	65	137	44.23	10.4(20)	
1,2,4-Trimethylbenzene	51.4	2.5	50	0	103	65	137	45.83	11.5(20)	
sec-Butylbenzene	49.4	2.5	50	0	99	66	134	44.77	9.7(20)	
1,3-Dichlorobenzene	49.3	2.5	50	0	99	70	130	44.26	10.8(20)	
1,4-Dichlorobenzene	46.5	2.5	50	0	93	70	130	42.19	9.8(20)	
4-Isopropyltoluene	50.4	2.5	50	0	101	66	137	45.7	9.8(20)	
1,2-Dichlorobenzene	46.4	2.5	50	0	93	70	130	41.98	9.9(20)	
n-Butylbenzene	52.5	2.5	50	0	105	60	142	46.3	12.5(20)	
1,2-Dibromo-3-chloropropane (DBCP)	232	15	250	0	93	67	130	207.9	11.1(20)	
1,2,4-Trichlorobenzene	51.5	10	50	0	103	61	137	44.06	15.6(20)	
Naphthalene	46.8	10	50	0	94	40	167	37.29	22.5(20)	R5
Hexachlorobutadiene	94.9	10	100	0	95	61	130	82.79	13.7(20)	
1,2,3-Trichlorobenzene	48.7	10	50	0	97	51	144	41.87	15.1(20)	
Surr: 1,2-Dichloroethane-d4	49.4		50		99	70	130			
Surr: Toluene-d8	48		50		96	70	130			
Surr: 4-Bromofluorobenzene	50		50		100	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: *24-May-10*

QC Summary Report

Work Order: 10051302

Comments:

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

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

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

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

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

Billing Information :

CHAIN-OF-CUSTODY RECORD

CA

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

WorkOrder : BMIS10051302

Report Due By : 5:00 PM On : 27-May-2010

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org

EDD Required : **Yes**

Sampled by : Chase Brogdon

PO : 218013

Client's COC # : 28934 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	13-May-2010	**13-May-2010**

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10051302-01A	MW-3-5	AQ	05/12/10 08:33	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051302-02A	MW-3-4	AQ	05/12/10 09:15	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051302-03A	MW-3-3	AQ	05/12/10 09:57	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051302-04A	MW-3-2	AQ	05/12/10 10:33	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051302-05A	MW-3-1	AQ	05/12/10 11:50	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051302-06A	DUPE-05-2Q10	AQ	05/12/10 00:00	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051302-07A	EB-10-05/12/10	AQ	05/12/10 11:31	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051302-08A	TB-10-05/12/10	AQ	05/12/10 07:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/10/10

Comments: Security seals intact. Frozen ice. Temp Blank #8691 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). :

	Signature	Print Name	Company	Date/Time
Logged in by:	Elizabeth Adcox	Elizabeth Adcox	**Alpha Analytical, Inc.**	5/13/10 9:43

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:
Name GERALD TOMPKINS / BATTELLE
Address 505 KING 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 X NV ___ WA ___ ID ___ OR ___ OTHER ___

28934

Page # 1 of 1

Client Name	P.O. #	Job #
BATTELLE / DAVID CONNER	218013	6005862
Address 3990 OLD TOWN AVE, C-205	EMail Address	
City, State, Zip SAN DIEGO CA 92110	Phone # (619) 726 7311	Fax #

Required QC Level? I II III IV

EDD / EDF? YES ___ NO ___

Global ID # _____

Time Sampled	Date Sampled	Matrix* See Key Below	Sampled by CHASE BRADDON / Lab ID Number (Office Use Only)	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	VOC (524.2)	TOTAL CR, LEAD, ARSENIC (200.8)	GEN CHEM (NO3, Ca, Mg, Fe) (200.7)	ClO4 - (314.0)	GEN CHEM (300.0, 310.1, 150.1, 160.1)			REMARKS
0833	5/12/10	AQ	BMI1005302-01	MW-3-5	NORM		5	X	X	X	X	X			
0915			-02	MW-3-4			5	X	X	X	X	X			
0957			-03	MW-3-3			5	X	X	X	X	X			
1033			-04	MW-3-2			5	X	X	X	X	X			
1150			-05	MW-3-1			5	X	X	X	X	X			
—			-06	DUPE-05-2Q10			5	X	X	X	X	X			DUPLICATE
1131			-07	EB-10-05/12/10			5	X	X	X	X	X			EQUIPMENT BLANK
0700			-08	TB-10-05/12/10			1	X							TRIP BLANK

ADDITIONAL INSTRUCTIONS:

Signature	Print Name	Company	Date	Time
Relinquished by	CHASE BRADDON	INSIGHT GEO, INC	5/12/10	1230
Received by	Anthony Stark	Alpha Analytical	5/12/10	1230
Relinquished by	"	"	"	1600
Received by	Elizabeth Adcox	Alpha	5-13-10	9:43
Relinquished by				
Received by				

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis 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 *25-May-10*

David Conner
Battelle Memorial Institute
3990 Old Town Ave Suite C-205
San Diego, CA 92110
(818) 393-2808

CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring

Work Order: BMI10051405 **Cooler Temp:** 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
10051405-01A	MW-19-5	Aqueous
10051405-02A	MW-19-4	Aqueous
10051405-03A	MW-19-3	Aqueous
10051405-04A	MW-19-2	Aqueous
10051405-05A	MW-19-1	Aqueous
10051405-06A	EB-11-05/13/10	Aqueous
10051405-07A	TB-11-05/13/10	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.

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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/14/10

Job: G005862/JPL Groundwater Monitoring

Anions by IC
EPA Method 300.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-19-5**				
Lab ID : BMI10051405-01A Chloride	68	50 mg/L	05/14/10 11:40	05/14/10 15:44
Date Sampled 05/13/10 08:21 Nitrite (NO2) - N	ND	0.25 mg/L	05/14/10 11:40	05/14/10 15:44
Nitrate (NO3) - N	8.6	0.25 mg/L	05/14/10 11:40	05/14/10 15:44
Phosphate, ortho - P	ND	0.50 mg/L	05/14/10 11:40	05/14/10 15:44
Sulfate (SO4)	79	0.50 mg/L	05/14/10 11:40	05/14/10 15:44
Client ID: **MW-19-4**				
Lab ID : BMI10051405-02A Chloride	50	0.50 mg/L	05/14/10 11:40	05/14/10 17:16
Date Sampled 05/13/10 08:57 Nitrite (NO2) - N	ND	0.25 mg/L	05/14/10 11:40	05/14/10 17:16
Nitrate (NO3) - N	8.6	0.25 mg/L	05/14/10 11:40	05/14/10 17:16
Phosphate, ortho - P	ND	0.50 mg/L	05/14/10 11:40	05/14/10 17:16
Sulfate (SO4)	61	0.50 mg/L	05/14/10 11:40	05/14/10 17:16
Client ID: **MW-19-3**				
Lab ID : BMI10051405-03A Chloride	42	0.50 mg/L	05/14/10 11:40	05/14/10 17:35
Date Sampled 05/13/10 09:31 Nitrite (NO2) - N	ND	0.25 mg/L	05/14/10 11:40	05/14/10 17:35
Nitrate (NO3) - N	10	0.25 mg/L	05/14/10 11:40	05/14/10 17:35
Phosphate, ortho - P	ND	0.50 mg/L	05/14/10 11:40	05/14/10 17:35
Sulfate (SO4)	39	0.50 mg/L	05/14/10 11:40	05/14/10 17:35
Client ID: **MW-19-2**				
Lab ID : BMI10051405-04A Chloride	95	50 mg/L	05/14/10 11:40	05/14/10 17:53
Date Sampled 05/13/10 10:10 Nitrite (NO2) - N	ND	0.25 mg/L	05/14/10 11:40	05/14/10 17:53
Nitrate (NO3) - N	18	0.25 mg/L	05/14/10 11:40	05/14/10 17:53
Phosphate, ortho - P	ND	0.50 mg/L	05/14/10 11:40	05/14/10 17:53
Sulfate (SO4)	130	75 mg/L	05/14/10 11:40	05/14/10 17:53
Client ID: **MW-19-1**				
Lab ID : BMI10051405-05A Chloride	56	50 mg/L	05/14/10 11:40	05/14/10 18:49
Date Sampled 05/13/10 11:13 Nitrite (NO2) - N	ND	0.25 mg/L	05/14/10 11:40	05/14/10 18:49
Nitrate (NO3) - N	8.4	0.25 mg/L	05/14/10 11:40	05/14/10 18:49
Phosphate, ortho - P	ND	0.50 mg/L	05/14/10 11:40	05/14/10 18:49
Sulfate (SO4)	83	0.50 mg/L	05/14/10 11:40	05/14/10 18:49
Client ID: **EB-11-05/13/10**				
Lab ID : BMI10051405-06A Chloride	ND	0.50 mg/L	05/14/10 11:40	05/14/10 19:07
Date Sampled 05/13/10 10:59 Nitrite (NO2) - N	ND	0.25 mg/L	05/14/10 11:40	05/14/10 19:07
Nitrate (NO3) - N	ND	0.25 mg/L	05/14/10 11:40	05/14/10 19:07
Phosphate, ortho - P	ND	0.50 mg/L	05/14/10 11:40	05/14/10 19:07
Sulfate (SO4)	ND	0.50 mg/L	05/14/10 11:40	05/14/10 19:07

Alpha Analytical, Inc.

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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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5/27/10

Report Date

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/14/10

Job: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-19-5**				
Lab ID : BMI10051405-01A Perchlorate	3.34	1.00 µg/L	05/14/10 10:50	05/14/10 15:29
Date Sampled 05/13/10 08:21				
Client ID: **MW-19-4**				
Lab ID : BMI10051405-02A Perchlorate	2.82	1.00 µg/L	05/14/10 10:50	05/14/10 15:47
Date Sampled 05/13/10 08:57				
Client ID: **MW-19-3**				
Lab ID : BMI10051405-03A Perchlorate	3.79	1.00 µg/L	05/14/10 10:50	05/14/10 16:42
Date Sampled 05/13/10 09:31				
Client ID: **MW-19-2**				
Lab ID : BMI10051405-04A Perchlorate	6.79	1.00 µg/L	05/14/10 10:50	05/14/10 17:01
Date Sampled 05/13/10 10:10				
Client ID: **MW-19-1**				
Lab ID : BMI10051405-05A Perchlorate	7.99	1.00 µg/L	05/14/10 10:50	05/14/10 17:56
Date Sampled 05/13/10 11:13				
Client ID: **EB-11-05/13/10**				
Lab ID : BMI10051405-06A Perchlorate	ND	1.00 µg/L	05/14/10 10:50	05/14/10 18:15
Date Sampled 05/13/10 10:59				

ND = Not Detected

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5/27/10
Report Date

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/14/10

Job: G005862/JPL Groundwater Monitoring

Alkalinity
SM2320B

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-19-5**					
Lab ID : BMI10051405-01A	Alkalinity, Bicarbonate (As CaCO3)	200	10 mg/L	05/14/10 15:29	05/14/10 15:29
Date Sampled 05/13/10 08:21	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/14/10 15:29	05/14/10 15:29
	Alkalinity, Total (As CaCO3 at pH 4.5)	200	10 mg/L	05/14/10 15:29	05/14/10 15:29
Client ID: **MW-19-4**					
Lab ID : BMI10051405-02A	Alkalinity, Bicarbonate (As CaCO3)	170	10 mg/L	05/14/10 15:34	05/14/10 15:34
Date Sampled 05/13/10 08:57	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/14/10 15:34	05/14/10 15:34
	Alkalinity, Total (As CaCO3 at pH 4.5)	170	10 mg/L	05/14/10 15:34	05/14/10 15:34
Client ID: **MW-19-3**					
Lab ID : BMI10051405-03A	Alkalinity, Bicarbonate (As CaCO3)	170	10 mg/L	05/14/10 15:38	05/14/10 15:38
Date Sampled 05/13/10 09:31	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/14/10 15:38	05/14/10 15:38
	Alkalinity, Total (As CaCO3 at pH 4.5)	170	10 mg/L	05/14/10 15:38	05/14/10 15:38
Client ID: **MW-19-2**					
Lab ID : BMI10051405-04A	Alkalinity, Bicarbonate (As CaCO3)	210	10 mg/L	05/14/10 15:49	05/14/10 15:49
Date Sampled 05/13/10 10:10	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/14/10 15:49	05/14/10 15:49
	Alkalinity, Total (As CaCO3 at pH 4.5)	210	10 mg/L	05/14/10 15:49	05/14/10 15:49
Client ID: **MW-19-1**					
Lab ID : BMI10051405-05A	Alkalinity, Bicarbonate (As CaCO3)	220	10 mg/L	05/14/10 15:53	05/14/10 15:53
Date Sampled 05/13/10 11:13	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/14/10 15:53	05/14/10 15:53
	Alkalinity, Total (As CaCO3 at pH 4.5)	220	10 mg/L	05/14/10 15:53	05/14/10 15:53
Client ID: **EB-11-05/13/10**					
Lab ID : BMI10051405-06A	Alkalinity, Bicarbonate (As CaCO3)	ND	10 mg/L	05/14/10 15:58	05/14/10 15:58
Date Sampled 05/13/10 10:59	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/14/10 15:58	05/14/10 15:58
	Alkalinity, Total (As CaCO3 at pH 4.5)	ND	10 mg/L	05/14/10 15:58	05/14/10 15:58

ND = Not Detected

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Report Date

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/14/10

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS
EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-19-5**					
Lab ID : BMI10051405-01A	Sodium (Na)	30	0.50 mg/L	05/14/10 14:05	05/17/10 16:18
Date Sampled 05/13/10 08:21	Magnesium (Mg)	29	0.50 mg/L	05/14/10 14:05	05/17/10 16:18
	Potassium (K)	2.4	0.50 mg/L	05/14/10 14:05	05/17/10 16:18
	Calcium (Ca)	68	0.50 mg/L	05/14/10 14:05	05/17/10 16:18
	Chromium (Cr)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:18
	Iron (Fe)	0.19	0.10 mg/L	05/14/10 14:05	05/17/10 16:18
	Arsenic (As)	ND	0.0020 mg/L	05/14/10 14:05	05/17/10 16:18
	Lead (Pb)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:18
Client ID: **MW-19-4**					
Lab ID : BMI10051405-02A	Sodium (Na)	31	0.50 mg/L	05/14/10 14:05	05/17/10 16:23
Date Sampled 05/13/10 08:57	Magnesium (Mg)	24	0.50 mg/L	05/14/10 14:05	05/17/10 16:23
	Potassium (K)	2.4	0.50 mg/L	05/14/10 14:05	05/17/10 16:23
	Calcium (Ca)	53	0.50 mg/L	05/14/10 14:05	05/17/10 16:23
	Chromium (Cr)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:23
	Iron (Fe)	0.15	0.10 mg/L	05/14/10 14:05	05/17/10 16:23
	Arsenic (As)	ND	0.0020 mg/L	05/14/10 14:05	05/17/10 16:23
	Lead (Pb)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:23
Client ID: **MW-19-3**					
Lab ID : BMI10051405-03A	Sodium (Na)	25	0.50 mg/L	05/14/10 14:05	05/17/10 16:29
Date Sampled 05/13/10 09:31	Magnesium (Mg)	20	0.50 mg/L	05/14/10 14:05	05/17/10 16:29
	Potassium (K)	2.2	0.50 mg/L	05/14/10 14:05	05/17/10 16:29
	Calcium (Ca)	56	0.50 mg/L	05/14/10 14:05	05/17/10 16:29
	Chromium (Cr)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:29
	Iron (Fe)	0.16	0.10 mg/L	05/14/10 14:05	05/17/10 16:29
	Arsenic (As)	ND	0.0020 mg/L	05/14/10 14:05	05/17/10 16:29
	Lead (Pb)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:29
Client ID: **MW-19-2**					
Lab ID : BMI10051405-04A	Sodium (Na)	31	0.50 mg/L	05/14/10 14:05	05/17/10 15:55
Date Sampled 05/13/10 10:10	Magnesium (Mg)	37	0.50 mg/L	05/14/10 14:05	05/17/10 15:55
	Potassium (K)	2.7	0.50 mg/L	05/14/10 14:05	05/17/10 15:55
	Calcium (Ca)	110	0.50 mg/L	05/14/10 14:05	05/17/10 15:55
	Chromium (Cr)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 15:55
	Iron (Fe)	0.62	0.10 mg/L	05/14/10 14:05	05/17/10 15:55
	Arsenic (As)	ND	0.0020 mg/L	05/14/10 14:05	05/17/10 15:55
	Lead (Pb)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 15:55

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Client ID: **MW-19-1**					
Lab ID : BMI10051405-05A	Sodium (Na)	18	0.50 mg/L	05/14/10 14:05	05/17/10 16:35
Date Sampled 05/13/10 11:13	Magnesium (Mg)	27	0.50 mg/L	05/14/10 14:05	05/17/10 16:35
	Potassium (K)	3.4	0.50 mg/L	05/14/10 14:05	05/17/10 16:35
	Calcium (Ca)	89	0.50 mg/L	05/14/10 14:05	05/17/10 16:35
	Chromium (Cr)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:35
	Iron (Fe)	1.1	0.10 mg/L	05/14/10 14:05	05/17/10 16:35
	Arsenic (As)	ND	0.0020 mg/L	05/14/10 14:05	05/17/10 16:35
	Lead (Pb)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:35
Client ID: **EB-11-05/13/10**					
Lab ID : BMI10051405-06A	Sodium (Na)	ND	0.50 mg/L	05/14/10 14:05	05/17/10 16:40
Date Sampled 05/13/10 10:59	Magnesium (Mg)	ND	0.50 mg/L	05/14/10 14:05	05/17/10 16:40
	Potassium (K)	ND	0.50 mg/L	05/14/10 14:05	05/17/10 16:40
	Calcium (Ca)	ND	0.50 mg/L	05/14/10 14:05	05/17/10 16:40
	Chromium (Cr)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:40
	Iron (Fe)	ND	0.10 mg/L	05/14/10 14:05	05/17/10 16:40
	Arsenic (As)	ND	0.0020 mg/L	05/14/10 14:05	05/17/10 16:40
	Lead (Pb)	ND	0.0050 mg/L	05/14/10 14:05	05/17/10 16:40

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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5/27/10

Report Date

Alpha Analytical, Inc.

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/14/10

Job: G005862/JPL Groundwater Monitoring

pH (Range 1.7 to 12.4)
EPA Method 150.2 / SM4500HB / SW9040C

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-19-5**					
Lab ID : BMI10051405-01A	pH	7.7	1.7 pH Units	05/14/10 15:56	05/14/10 15:56
Date Sampled 05/13/10 08:21	pH - Temperature	20	1.0 °C	05/14/10 15:56	05/14/10 15:56
Client ID: **MW-19-4**					
Lab ID : BMI10051405-02A	pH	7.9	1.7 pH Units	05/14/10 16:01	05/14/10 16:01
Date Sampled 05/13/10 08:57	pH - Temperature	19	1.0 °C	05/14/10 16:01	05/14/10 16:01
Client ID: **MW-19-3**					
Lab ID : BMI10051405-03A	pH	7.9	1.7 pH Units	05/14/10 16:10	05/14/10 16:10
Date Sampled 05/13/10 09:31	pH - Temperature	19	1.0 °C	05/14/10 16:10	05/14/10 16:10
Client ID: **MW-19-2**					
Lab ID : BMI10051405-04A	pH	7.1	1.7 pH Units	05/14/10 16:12	05/14/10 16:12
Date Sampled 05/13/10 10:10	pH - Temperature	19	1.0 °C	05/14/10 16:12	05/14/10 16:12
Client ID: **MW-19-1**					
Lab ID : BMI10051405-05A	pH	7.6	1.7 pH Units	05/14/10 16:15	05/14/10 16:15
Date Sampled 05/13/10 11:13	pH - Temperature	19	1.0 °C	05/14/10 16:15	05/14/10 16:15
Client ID: **EB-11-05/13/10**					
Lab ID : BMI10051405-06A	pH	6.3	1.7 pH Units	05/14/10 16:17	05/14/10 16:17
Date Sampled 05/13/10 10:59	pH - Temperature	20	1.0 °C	05/14/10 16:17	05/14/10 16:17

The EPA has established an analytical holding time of 15 minutes for this method as documented in the Methods Update Rule, Federal Register, Vol 72, No 47, March 2007. This holding time will always be exceeded, unless samples are analyzed in the field.
The laboratory performed this analysis in the shortest practical holding time after sample receipt.

Roger Scholl Randy Gardner Walter Hinchman

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/14/10

Job: G005862/JPL Groundwater Monitoring

Total Dissolved Solids (TDS)
SM2540C

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-19-5**					
Lab ID : BMI10051405-01A	Solids, Total Dissolved (TDS)	460	10 mg/L	05/19/10	05/19/10
Date Sampled 05/13/10 08:21					
Client ID: **MW-19-4**					
Lab ID : BMI10051405-02A	Solids, Total Dissolved (TDS)	370	10 mg/L	05/19/10	05/19/10
Date Sampled 05/13/10 08:57					
Client ID: **MW-19-3**					
Lab ID : BMI10051405-03A	Solids, Total Dissolved (TDS)	350	10 mg/L	05/19/10	05/19/10
Date Sampled 05/13/10 09:31					
Client ID: **MW-19-2**					
Lab ID : BMI10051405-04A	Solids, Total Dissolved (TDS)	650	10 mg/L	05/19/10	05/19/10
Date Sampled 05/13/10 10:10					
Client ID: **MW-19-1**					
Lab ID : BMI10051405-05A	Solids, Total Dissolved (TDS)	410	10 mg/L	05/19/10	05/19/10
Date Sampled 05/13/10 11:13					
Client ID: **EB-11-05/13/10**					
Lab ID : BMI10051405-06A	Solids, Total Dissolved (TDS)	ND	10 mg/L	05/19/10	05/19/10
Date Sampled 05/13/10 10:59					

ND = Not Detected

Roger Scholl Randy Gardner Walter Hinchman

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ANALYTICAL REPORT

Battelle Memorial Institute
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID : **MW-19-5**					
Lab ID : BMI10051405-01A	*** None Found ***	ND	2.0 µg/L	05/18/10 13:57	05/18/10 13:57
Date Received : 05/14/10					
Date Sampled : 05/13/10 08:21					
Client ID : **MW-19-4**					
Lab ID : BMI10051405-02A	*** None Found ***	ND	2.0 µg/L	05/18/10 14:21	05/18/10 14:21
Date Received : 05/14/10					
Date Sampled : 05/13/10 08:57					
Client ID : **MW-19-3**					
Lab ID : BMI10051405-03A	*** None Found ***	ND	2.0 µg/L	05/18/10 14:44	05/18/10 14:44
Date Received : 05/14/10					
Date Sampled : 05/13/10 09:31					
Client ID : **MW-19-2**					
Lab ID : BMI10051405-04A	*** None Found ***	ND	2.0 µg/L	05/18/10 15:08	05/18/10 15:08
Date Received : 05/14/10					
Date Sampled : 05/13/10 10:10					
Client ID : **MW-19-1**					
Lab ID : BMI10051405-05A	*** None Found ***	ND	2.0 µg/L	05/18/10 15:31	05/18/10 15:31
Date Received : 05/14/10					
Date Sampled : 05/13/10 11:13					
Client ID : **EB-11-05/13/10**					
Lab ID : BMI10051405-06A	*** None Found ***	ND	2.0 µg/L	05/18/10 13:33	05/18/10 13:33
Date Received : 05/14/10					
Date Sampled : 05/13/10 10:59					
Client ID : **TB-11-05/13/10**					
Lab ID : BMI10051405-07A	*** None Found ***	ND	2.0 µg/L	05/18/10 13:10	05/18/10 13:10
Date Received : 05/14/10					
Date Sampled : 05/13/10 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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ANALYTICAL REPORT

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Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051405-01A
Client I.D. Number: MW-19-5

Sampled: 05/13/10 08:21
Received: 05/14/10
Extracted: 05/18/10 13:57
Analyzed: 05/18/10 13:57

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	110	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	85	(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	0.89	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.

5/27/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051405-02A
Client I.D. Number: MW-19-4

Sampled: 05/13/10 08:57
Received: 05/14/10
Extracted: 05/18/10 14:21
Analyzed: 05/18/10 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	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	109	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	87	(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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5/27/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051405-03A
Client I.D. Number: MW-19-3

Sampled: 05/13/10 09:31
Received: 05/14/10
Extracted: 05/18/10 14:44
Analyzed: 05/18/10 14:44

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	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	105	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	100	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	86	(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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5/27/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051405-04A
Client I.D. Number: MW-19-2

Sampled: 05/13/10 10:10
Received: 05/14/10
Extracted: 05/18/10 15:08
Analyzed: 05/18/10 15:08

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	J	1.0	µg/L	40	Bromoform	ND		0.50	µg/L
6	Trichlorofluoromethane	ND		0.50	µg/L	41	Styrene	ND	J	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	0.79		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND		1.0	µg/L
26	Bromodichloromethane	ND		0.50	µg/L	61	Naphthalene	ND		1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND		1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND		1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	108		(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	101		(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	87		(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
J = Estimated: The analyte was positively identified; the quantitation is an estimation.

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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5/27/10
Report Date

Alpha Analytical, Inc.

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ANALYTICAL REPORT

Battelle Memorial Institute
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051405-05A
Client I.D. Number: MW-19-1

Sampled: 05/13/10 11:13
Received: 05/14/10
Extracted: 05/18/10 15:31
Analyzed: 05/18/10 15:31

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	0.66	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	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	88	(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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5/27/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051405-06A
Client I.D. Number: EB-11-05/13/10

Sampled: 05/13/10 10:59
Received: 05/14/10
Extracted: 05/18/10 13:33
Analyzed: 05/18/10 13:33

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	109	(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	88	(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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5/27/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051405-07A
Client I.D. Number: TB-11-05/13/10

Sampled: 05/13/10 07:00
Received: 05/14/10
Extracted: 05/18/10 13:10
Analyzed: 05/18/10 13:10

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	104	(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	88	(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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5/27/10
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: BMI10051405 **Job:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
10051405-01A	MW-19-5	Aqueous	2
10051405-02A	MW-19-4	Aqueous	2
10051405-03A	MW-19-3	Aqueous	2
10051405-04A	MW-19-2	Aqueous	2
10051405-05A	MW-19-1	Aqueous	2
10051405-06A	EB-11-05/13/10	Aqueous	2
10051405-07A	TB-11-05/13/10	Aqueous	2

5/27/10

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: *21-May-10*

QC Summary Report

Work Order: 10051405

Method Blank

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

File ID: **21** Batch ID: **24256** Analysis Date: **05/14/2010 12:02**

Sample ID: **MB-24256** Units : **mg/L** Run ID: **IC_1_100514A** Prep Date: **05/14/2010 11:40**

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: **22** Batch ID: **24256** Analysis Date: **05/14/2010 12:20**

Sample ID: **LFB-24256** Units : **mg/L** Run ID: **IC_1_100514A** Prep Date: **05/14/2010 11:40**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	53	0.5	50		106	90	110			
Nitrite (NO2) - N	5.34	0.25	5		107	90	110			
Nitrate (NO3) - N	5.17	0.25	5		103	90	110			
Phosphate, ortho - P	4.56	0.5	5		91	90	110			
Sulfate (SO4)	107	0.5	100		107	90	110			

Sample Matrix Spike

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

File ID: **41** Batch ID: **24256** Analysis Date: **05/14/2010 18:12**

Sample ID: **10051405-04ALFM** Units : **mg/L** Run ID: **IC_1_100514A** Prep Date: **05/14/2010 11:40**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	193	0.5	100	95.1	97	80	120			
Nitrite (NO2) - N	10.5	0.25	10	0	105	80	120			
Nitrate (NO3) - N	27.7	0.25	10	17.54	102	80	120			
Phosphate, ortho - P	10.6	0.5	10	0	106	80	120			
Sulfate (SO4)	323	0.5	200	132	96	80	120			

Sample Matrix Spike Duplicate

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

File ID: **42** Batch ID: **24256** Analysis Date: **05/14/2010 18:30**

Sample ID: **10051405-04ALFMD** Units : **mg/L** Run ID: **IC_1_100514A** Prep Date: **05/14/2010 11:40**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	193	0.5	100	95.1	98	80	120	192.6	0.4(15)	
Nitrite (NO2) - N	10.8	0.25	10	0	108	80	120	10.46	3.0(15)	
Nitrate (NO3) - N	27.8	0.25	10	17.54	103	80	120	27.72	0.3(15)	
Phosphate, ortho - P	9.83	0.5	10	0	98	80	120	10.65	7.9(15)	
Sulfate (SO4)	324	0.5	200	132	96	80	120	323.3	0.3(15)	

Comments:

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

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Date: *21-May-10*

QC Summary Report

Work Order: 10051405

Method Blank

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

File ID: **14** Batch ID: **24253** Analysis Date: **05/14/2010 11:48**

Sample ID: **MB-24253** Units : **µg/L** Run ID: **IC_3_100514A** Prep Date: **05/14/2010 10:50**

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: **24253** Analysis Date: **05/14/2010 12:06**

Sample ID: **LFB-24253** Units : **µg/L** Run ID: **IC_3_100514A** Prep Date: **05/14/2010 10:50**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	22.4	2	25		89	85	115			

Sample Matrix Spike

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

File ID: **32** Batch ID: **24253** Analysis Date: **05/14/2010 17:19**

Sample ID: **10051405-04ALFM** Units : **µg/L** Run ID: **IC_3_100514A** Prep Date: **05/14/2010 10:50**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	33.2	2	25	6.793	106	80	120			

Sample Matrix Spike Duplicate

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

File ID: **33** Batch ID: **24253** Analysis Date: **05/14/2010 17:38**

Sample ID: **10051405-04ALFMD** Units : **µg/L** Run ID: **IC_3_100514A** Prep Date: **05/14/2010 10:50**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	32.8	2	25	6.793	104	80	120	33.17	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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Date: *21-May-10*

QC Summary Report

Work Order: 10051405

Laboratory Control Spike Type **LCS** Test Code: **SM2320B**

File ID: Batch ID: **W0514AL** Analysis Date: **05/14/2010 14:44**

Sample ID: **LCS-W0514AL** Units : **mg/L** Run ID: **WETLAB_100514E** Prep Date: **05/14/2010 14:44**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Alkalinity, Bicarbonate (As CaCO3)	242.4	10	250		97	80	120			
Alkalinity, Carbonate (As CaCO3)	242.4	10	250		97	80	120			
Alkalinity, Total (As CaCO3 at pH 4.5)	242	10	250		97	80	120			

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: *24-May-10*

QC Summary Report

Work Order: 10051405

Method Blank

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

File ID: **051710.B\020SMPL.D** Batch ID: **24264K** Analysis Date: **05/17/2010 15:32**

Sample ID: **MB-24264** Units : **mg/L** Run ID: **ICP/MS_100517D** Prep Date: **05/14/2010 14:05**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	ND	0.5								
Magnesium (Mg)	ND	0.5								
Potassium (K)	ND	0.5								
Calcium (Ca)	ND	0.5								
Chromium (Cr)	ND	0.005								
Iron (Fe)	ND	0.1								
Arsenic (As)	ND	0.002								
Lead (Pb)	ND	0.005								

Laboratory Control Spike

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

File ID: **051710.B\021_LCS.D** Batch ID: **24264K** Analysis Date: **05/17/2010 15:38**

Sample ID: **LCS-24264** Units : **mg/L** Run ID: **ICP/MS_100517D** Prep Date: **05/14/2010 14:05**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	4.93	0.5	5		99	80	120			
Magnesium (Mg)	5.1	0.5	5		102	80	120			
Potassium (K)	4.98	0.5	5		99.5	80	120			
Calcium (Ca)	5.05	0.5	5		101	80	120			
Chromium (Cr)	0.0477	0.005	0.05		95	80	120			
Iron (Fe)	4.89	0.2	5		98	80	120			
Arsenic (As)	0.0497	0.002	0.05		99	80	120			
Lead (Pb)	0.0493	0.005	0.05		99	80	120			

Sample Matrix Spike

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

File ID: **051710.B\025SMPL.D** Batch ID: **24264K** Analysis Date: **05/17/2010 16:01**

Sample ID: **10051405-04AMS** Units : **mg/L** Run ID: **ICP/MS_100517D** Prep Date: **05/14/2010 14:05**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	36.7	0.5	5	31.28	108	80	120			
Magnesium (Mg)	41.5	0.5	5	37.01	90	80	120			
Potassium (K)	7.48	0.5	5	2.662	96	80	120			
Calcium (Ca)	118	0.5	5	114.5	62	80	120			M3
Chromium (Cr)	0.0494	0.005	0.05	0	99	80	120			
Iron (Fe)	5.3	0.1	5	0.6165	94	80	120			
Arsenic (As)	0.0499	0.002	0.05	0	99.8	80	120			
Lead (Pb)	0.047	0.005	0.05	0	94	80	120			

Sample Matrix Spike Duplicate

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

File ID: **051710.B\026SMPL.D** Batch ID: **24264K** Analysis Date: **05/17/2010 16:07**

Sample ID: **10051405-04AMSD** Units : **mg/L** Run ID: **ICP/MS_100517D** Prep Date: **05/14/2010 14:05**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	35.3	0.5	5	31.28	81	80	120	36.68	3.8(20)	
Magnesium (Mg)	39.8	0.5	5	37.01	56	80	120	41.5	4.1(20)	M3
Potassium (K)	7.31	0.5	5	2.662	93	80	120	7.484	2.3(20)	
Calcium (Ca)	113	0.5	5	114.5	-24	80	120	117.6	3.7(20)	M3
Chromium (Cr)	0.0483	0.005	0.05	0	97	80	120	0.04942	2.3(20)	
Iron (Fe)	5.15	0.1	5	0.6165	91	80	120	5.304	3.0(20)	
Arsenic (As)	0.0501	0.002	0.05	0	100	80	120	0.04989	0.5(20)	
Lead (Pb)	0.0469	0.005	0.05	0	94	80	120	0.04697	0.1(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 uses descriptive data qualifier flags, which could be replaced with either a DOD Q or J flag.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.

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Date: *21-May-10*

QC Summary Report

Work Order: 10051405

Laboratory Control Spike Type **LCS** Test Code: **EPA Method 150.2 / SM4500HB / SW9040C**

File ID: Batch ID: **W0514PH** Analysis Date: **05/14/2010 15:53**

Sample ID: **LCS-W0514PH** Units : **pH Units** Run ID: **WETLAB_100514D** Prep Date: **05/14/2010 15:53**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
pH	5.04	1.7	5		101	90	110			

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: *21-May-10*

QC Summary Report

Work Order: 10051405

Method Blank

Type **MBLK** Test Code: **SM2540C**

File ID: Batch ID: **W0517DS** Analysis Date: **05/19/2010 00:00**

Sample ID: **MBLK-W0517DS** Units : **mg/L** Run ID: **WETLAB_100517A** Prep Date: **05/19/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	ND	10								

Laboratory Control Spike

Type **LCS** Test Code: **SM2540C**

File ID: Batch ID: **W0517DS** Analysis Date: **05/19/2010 00:00**

Sample ID: **LCS-W0517DS** Units : **mg/L** Run ID: **WETLAB_100517A** Prep Date: **05/19/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	93	10	100		93	80	120			

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: 25-May-10

QC Summary Report

Work Order: 10051405

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

File ID: **C:\HPCHEM\MS07\DATA\100518\10051809.D** Batch ID: **MS07W0518M** Analysis Date: **05/18/2010 10:48**

Sample ID: **MBLK MS07W0518M** Units : **µg/L** Run ID: **MSD_07_100518B** Prep Date: **05/18/2010 10:48**

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	11		10		110	70	130			
Surr: Toluene-d8	9.96		10		99.6	70	130			

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Date: 25-May-10

QC Summary Report

Work Order: 10051405

Surr: 4-Bromofluorobenzene	8.8		10		88	70	130			

Laboratory Control Spike Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **C:\HPCHEM\MS07\DATA\100518\10051806.D** Batch ID: **MS07W0518M** Analysis Date: **05/18/2010 09:37**

Sample ID: **LCS MS07W0518M** Units : **µg/L** Run ID: **MSD_07_100518B** Prep Date: **05/18/2010 09:37**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	7.01	1	10		70	70	130			
Chloromethane	8.52	2	10		85	70	130			
Vinyl chloride	10	1	10		100	70	130			
Chloroethane	11.4	1	10		114	70	130			
Bromomethane	15.8	2	10		158	70	130(130)			L51
Trichlorofluoromethane	10.4	1	10		104	70	130			
1,1-Dichloroethene	10.6	1	10		106	70	130			
Dichloromethane	9.92	2	10		99	70	130			
trans-1,2-Dichloroethene	11.1	1	10		111	70	130			
Methyl tert-butyl ether (MTBE)	10.3	0.5	10		103	70	130			
1,1-Dichloroethane	10.6	1	10		106	70	130			
cis-1,2-Dichloroethene	10.8	1	10		108	70	130			
Bromochloromethane	11	1	10		110	70	130			
Chloroform	10.5	1	10		105	70	130			
2,2-Dichloropropane	13.1	1	10		131	70	130(130)			L51
1,2-Dichloroethane	11.2	1	10		112	70	130			
1,1,1-Trichloroethane	11.4	1	10		114	70	130			
1,1-Dichloropropene	11.2	1	10		112	70	130			
Carbon tetrachloride	11.4	1	10		114	70	130			
Benzene	10.5	0.5	10		105	70	130			
Dibromomethane	10.6	1	10		106	70	130			
1,2-Dichloropropane	11.4	1	10		114	70	130			
Trichloroethene	11	1	10		110	70	130			
Bromodichloromethane	11.4	1	10		114	70	130			
cis-1,3-Dichloropropene	11.2	1	10		112	70	130			
trans-1,3-Dichloropropene	11.6	1	10		116	70	130			
1,1,2-Trichloroethane	10.2	1	10		102	70	130			
Toluene	10.5	0.5	10		105	70	130			
1,3-Dichloropropane	10.2	1	10		102	70	130			
Dibromochloromethane	11.1	1	10		111	70	130			
1,2-Dibromoethane (EDB)	20.6	2	20		103	70	130			
Tetrachloroethene	11.3	1	10		113	70	130			
1,1,1,2-Tetrachloroethane	10.6	1	10		106	70	130			
Chlorobenzene	10.2	1	10		102	70	130			
Ethylbenzene	10.9	0.5	10		109	70	130			
m,p-Xylene	11	0.5	10		110	70	130			
Bromoform	11.7	1	10		117	70	130			
Styrene	15.1	1	10		151	70	130(130)			L1
o-Xylene	11.3	0.5	10		113	70	130			
1,1,2,2-Tetrachloroethane	9.64	1	10		96	70	130			
1,2,3-Trichloropropane	21.2	2	20		106	70	130			
Isopropylbenzene	9.89	1	10		99	70	130			
Bromobenzene	8.91	1	10		89	70	130			
n-Propylbenzene	9.43	1	10		94	70	130			
4-Chlorotoluene	9.81	1	10		98	70	130			
2-Chlorotoluene	9.46	1	10		95	70	130			
1,3,5-Trimethylbenzene	9.66	1	10		97	70	130			
tert-Butylbenzene	9.64	1	10		96	70	130			
1,2,4-Trimethylbenzene	9.81	1	10		98	70	130			
sec-Butylbenzene	9.82	1	10		98	70	130			
1,3-Dichlorobenzene	9.01	1	10		90	70	130			
1,4-Dichlorobenzene	9.02	1	10		90	70	130			
4-Isopropyltoluene	10.2	1	10		102	70	130			
1,2-Dichlorobenzene	8.4	1	10		84	70	130			
n-Butylbenzene	10.5	1	10		105	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	43.1	3	50		86	70	130			
1,2,4-Trichlorobenzene	9.92	2	10		99	70	130			
Naphthalene	10.2	2	10		102	70	130			
Hexachlorobutadiene	20.7	2	20		104	70	130			
1,2,3-Trichlorobenzene	9.62	2	10		96	70	130			
Surr: 1,2-Dichloroethane-d4	10.9		10		109	70	130			
Surr: Toluene-d8	9.79		10		98	70	130			
Surr: 4-Bromofluorobenzene	8.66		10		87	70	130			

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Date: 25-May-10

QC Summary Report

Work Order: 10051405

Sample Matrix Spike Type **MS** Test Code: **EPA Method SW8260B**

File ID: **C:\HPCHEM\MS07\DATA\100518\10051811.D** Batch ID: **MS07W0518M** Analysis Date: **05/18/2010 11:35**

Sample ID: **10051405-04AMS** Units : **µg/L** Run ID: **MSD_07_100518B** Prep Date: **05/18/2010 11:35**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	45.6	2.5	50	0	91	13	167			
Chloromethane	44.9	10	50	0	90	28	145			
Vinyl chloride	50.6	2.5	50	0	101	43	134			
Chloroethane	56.4	2.5	50	0	113	39	154			
Bromomethane	79.6	10	50	0	159	19	176			
Trichlorofluoromethane	52.9	2.5	50	0	106	34	160			
1,1-Dichloroethene	51.2	2.5	50	0	102	60	130			
Dichloromethane	46.8	10	50	0	94	68	130			
trans-1,2-Dichloroethene	52.8	2.5	50	0	106	63	130			
Methyl tert-butyl ether (MTBE)	46.3	1.3	50	0	93	56	141			
1,1-Dichloroethane	50.2	2.5	50	0	100	61	130			
cis-1,2-Dichloroethene	51	2.5	50	0	102	70	130			
Bromochloromethane	52.5	2.5	50	0	105	70	130			
Chloroform	49.8	2.5	50	0	99.6	67	130			
2,2-Dichloropropane	58.1	2.5	50	0	116	30	152			
1,2-Dichloroethane	53.9	2.5	50	0	108	60	135			
1,1,1-Trichloroethane	53.5	2.5	50	0	107	59	137			
1,1-Dichloropropene	52.4	2.5	50	0	105	63	130			
Carbon tetrachloride	54.6	2.5	50	0	109	50	147			
Benzene	49.6	1.3	50	0	99	67	130			
Dibromomethane	50.1	2.5	50	0	100	69	133			
1,2-Dichloropropane	54.4	2.5	50	0	109	69	130			
Trichloroethene	53.3	2.5	50	0.79	105	69	130			
Bromodichloromethane	54.2	2.5	50	0	108	66	134			
cis-1,3-Dichloropropene	45	2.5	50	0	90	63	130			
trans-1,3-Dichloropropene	53.3	2.5	50	0	107	66	131			
1,1,2-Trichloroethane	47.9	2.5	50	0	96	68	130			
Toluene	49.2	1.3	50	0	98	66	130			
1,3-Dichloropropane	47.2	2.5	50	0	94	70	130			
Dibromochloromethane	51.4	2.5	50	0	103	70	130			
1,2-Dibromoethane (EDB)	96.5	5	100	0	97	70	130			
Tetrachloroethene	53.1	2.5	50	0	106	61	134			
1,1,1,2-Tetrachloroethane	50.7	2.5	50	0	101	70	130			
Chlorobenzene	48.7	2.5	50	0	97	70	130			
Ethylbenzene	51.9	1.3	50	0	104	68	130			
m,p-Xylene	51.6	1.3	50	0	103	64	130			
Bromoform	56.2	2.5	50	0	112	64	138			
Styrene	71.3	2.5	50	0	143	69	130			M55
o-Xylene	53.1	1.3	50	0	106	70	130			
1,1,2,2-Tetrachloroethane	46.4	2.5	50	0	93	65	131			
1,2,3-Trichloropropane	102	10	100	0	102	70	130			
Isopropylbenzene	45.9	2.5	50	0	92	64	138			
Bromobenzene	41.7	2.5	50	0	83	70	130			
n-Propylbenzene	44.2	2.5	50	0	88	66	132			
4-Chlorotoluene	45.6	2.5	50	0	91	70	130			
2-Chlorotoluene	44.6	2.5	50	0	89	70	130			
1,3,5-Trimethylbenzene	45.3	2.5	50	0	91	66	136			
tert-Butylbenzene	45.3	2.5	50	0	91	65	137			
1,2,4-Trimethylbenzene	45	2.5	50	0	90	65	137			
sec-Butylbenzene	46.1	2.5	50	0	92	66	134			
1,3-Dichlorobenzene	42.3	2.5	50	0	85	70	130			
1,4-Dichlorobenzene	42.6	2.5	50	0	85	70	130			
4-Isopropyltoluene	47	2.5	50	0	94	66	137			
1,2-Dichlorobenzene	40	2.5	50	0	80	70	130			
n-Butylbenzene	48.9	2.5	50	0	98	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	201	15	250	0	81	67	130			
1,2,4-Trichlorobenzene	46.1	10	50	0	92	61	137			
Naphthalene	45.5	10	50	0	91	40	167			
Hexachlorobutadiene	96.6	10	100	0	97	61	130			
1,2,3-Trichlorobenzene	44.7	10	50	0	89	51	144			
Surr: 1,2-Dichloroethane-d4	55.2		50		110	70	130			
Surr: Toluene-d8	48.3		50		97	70	130			
Surr: 4-Bromofluorobenzene	42.8		50		86	70	130			

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Date: 25-May-10

QC Summary Report

Work Order: 10051405

Sample Matrix Spike Duplicate Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **C:\HPCHEM\MS07\DATA\100518\10051812.D** Batch ID: **MS07W0518M** Analysis Date: **05/18/2010 11:59**

Sample ID: **10051405-04AMSD** Units : **µg/L** Run ID: **MSD_07_100518B** Prep Date: **05/18/2010 11:59**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	48.6	2.5	50	0	97	13	167	45.55	6.5(20)	
Chloromethane	48.2	10	50	0	96	28	145	44.92	7.1(20)	
Vinyl chloride	54.6	2.5	50	0	109	43	134	50.62	7.5(20)	
Chloroethane	57.9	2.5	50	0	116	39	154	56.38	2.6(20)	
Bromomethane	85.6	10	50	0	171	19	176	79.64	7.2(20)	
Trichlorofluoromethane	53.9	2.5	50	0	108	34	160	52.89	1.8(20)	
1,1-Dichloroethene	52.5	2.5	50	0	105	60	130	51.21	2.4(20)	
Dichloromethane	47.5	10	50	0	95	68	130	46.79	1.4(20)	
trans-1,2-Dichloroethene	53.3	2.5	50	0	107	63	130	52.76	1.0(20)	
Methyl tert-butyl ether (MTBE)	48.2	1.3	50	0	96	56	141	46.3	4.0(20)	
1,1-Dichloroethane	50.9	2.5	50	0	102	61	130	50.2	1.3(20)	
cis-1,2-Dichloroethene	51.9	2.5	50	0	104	70	130	51.01	1.7(20)	
Bromochloromethane	52.8	2.5	50	0	106	70	130	52.45	0.6(20)	
Chloroform	49.9	2.5	50	0	99.8	67	130	49.82	0.1(20)	
2,2-Dichloropropane	58.9	2.5	50	0	118	30	152	58.13	1.3(20)	
1,2-Dichloroethane	54.1	2.5	50	0	108	60	135	53.93	0.2(20)	
1,1,1-Trichloroethane	54.8	2.5	50	0	110	59	137	53.45	2.4(20)	
1,1-Dichloropropene	52.7	2.5	50	0	105	63	130	52.38	0.6(20)	
Carbon tetrachloride	55.2	2.5	50	0	110	50	147	54.55	1.2(20)	
Benzene	49.9	1.3	50	0	99.8	67	130	49.59	0.6(20)	
Dibromomethane	49.8	2.5	50	0	99.7	69	133	50.06	0.4(20)	
1,2-Dichloropropane	55	2.5	50	0	110	69	130	54.42	1.0(20)	
Trichloroethene	53.2	2.5	50	0.79	105	69	130	53.25	0.1(20)	
Bromodichloromethane	53.8	2.5	50	0	108	66	134	54.22	0.8(20)	
cis-1,3-Dichloropropene	45.6	2.5	50	0	91	63	130	44.96	1.5(20)	
trans-1,3-Dichloropropene	53.7	2.5	50	0	107	66	131	53.31	0.8(20)	
1,1,2-Trichloroethane	48.2	2.5	50	0	96	68	130	47.86	0.6(20)	
Toluene	49.6	1.3	50	0	99	66	130	49.18	0.9(20)	
1,3-Dichloropropane	47.5	2.5	50	0	95	70	130	47.22	0.6(20)	
Dibromochloromethane	51.7	2.5	50	0	103	70	130	51.41	0.6(20)	
1,2-Dibromoethane (EDB)	97.5	5	100	0	98	70	130	96.5	1.0(20)	
Tetrachloroethene	54.3	2.5	50	0	109	61	134	53.06	2.3(20)	
1,1,1,2-Tetrachloroethane	51.1	2.5	50	0	102	70	130	50.65	0.8(20)	
Chlorobenzene	49	2.5	50	0	98	70	130	48.73	0.6(20)	
Ethylbenzene	52.1	1.3	50	0	104	68	130	51.86	0.4(20)	
m,p-Xylene	52.1	1.3	50	0	104	64	130	51.55	1.0(20)	
Bromoform	56.6	2.5	50	0	113	64	138	56.15	0.8(20)	
Styrene	71.7	2.5	50	0	143	69	130	71.27	0.6(20)	M55
o-Xylene	53.2	1.3	50	0	106	70	130	53.05	0.3(20)	
1,1,2,2-Tetrachloroethane	46.8	2.5	50	0	94	65	131	46.35	0.9(20)	
1,2,3-Trichloropropane	102	10	100	0	102	70	130	101.8	0.0(20)	
Isopropylbenzene	46.2	2.5	50	0	92	64	138	45.93	0.6(20)	
Bromobenzene	42	2.5	50	0	84	70	130	41.66	0.7(20)	
n-Propylbenzene	44.4	2.5	50	0	89	66	132	44.2	0.3(20)	
4-Chlorotoluene	45.9	2.5	50	0	92	70	130	45.61	0.6(20)	
2-Chlorotoluene	45	2.5	50	0	90	70	130	44.61	0.8(20)	
1,3,5-Trimethylbenzene	45.3	2.5	50	0	91	66	136	45.27	0.0(20)	
tert-Butylbenzene	45.5	2.5	50	0	91	65	137	45.32	0.5(20)	
1,2,4-Trimethylbenzene	45.8	2.5	50	0	92	65	137	45.03	1.6(20)	
sec-Butylbenzene	46.9	2.5	50	0	94	66	134	46.09	1.7(20)	
1,3-Dichlorobenzene	42.6	2.5	50	0	85	70	130	42.25	0.7(20)	
1,4-Dichlorobenzene	42.8	2.5	50	0	86	70	130	42.59	0.6(20)	
4-Isopropyltoluene	47.9	2.5	50	0	96	66	137	46.98	1.9(20)	
1,2-Dichlorobenzene	40.2	2.5	50	0	80	70	130	40.02	0.3(20)	
n-Butylbenzene	49.4	2.5	50	0	99	60	142	48.92	1.1(20)	
1,2-Dibromo-3-chloropropane (DBCP)	207	15	250	0	83	67	130	201.4	2.9(20)	
1,2,4-Trichlorobenzene	47.2	10	50	0	94	61	137	46.05	2.5(20)	
Naphthalene	47.9	10	50	0	96	40	167	45.5	5.1(20)	
Hexachlorobutadiene	98.5	10	100	0	99	61	130	96.64	1.9(20)	
1,2,3-Trichlorobenzene	45.9	10	50	0	92	51	144	44.69	2.7(20)	
Surr: 1,2-Dichloroethane-d4	55.3		50		111	70	130			
Surr: Toluene-d8	48.5		50		97	70	130			
Surr: 4-Bromofluorobenzene	43.4		50		87	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: *25-May-10*

QC Summary Report

Work Order: 10051405

Comments:

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

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

L1 = The associated blank spike recovery was above laboratory acceptance limits.

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

M55 = Matrix spike recovery was above laboratory acceptance limits.

AMENDED

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 : BMIS10051405

Report Due By : 5:00 PM On : 28-May-2010

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org

EDD Required : **Yes**

Sampled by : Chase Brogdon

PO : 218013

Client's COC # : 28937 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	14-May-2010	24-May-2010

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10051405-01A	MW-19-5	AQ	05/13/10 08:21	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-02A	MW-19-4	AQ	05/13/10 08:57	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-03A	MW-19-3	AQ	05/13/10 09:31	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-04A	MW-19-2	AQ	05/13/10 10:10	10	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD
BMI10051405-05A	MW-19-1	AQ	05/13/10 11:13	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-06A	EB-11-05/13/10	AQ	05/13/10 10:59	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-07A	TB-11-05/13/10	AQ	05/13/10 07:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 5/10/10

Comments: No security seals. Frozen ice. Temp Blank #8769 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). Amended 5/24/10 @ 13:30: Added sample time to sample -07A due to login error. EA :

	Signature	Print Name	Company	Date/Time
Logged in by:	Elizabeth Adcox	Elizabeth Adcox	Alpha Analytical, Inc.	5:24:10 1331

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 :

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 : BMIS10051405

Report Due By : 5:00 PM On : 28-May-2010

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org

EDD Required : **Yes**

Sampled by : Chase Brogdon

PO : 218013

Client's COC # : 28937 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	14-May-2010	**14-May-2010**

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10051405-01A	MW-19-5	AQ	05/13/10 08:21	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-02A	MW-19-4	AQ	05/13/10 08:57	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-03A	MW-19-3	AQ	05/13/10 09:31	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-04A	MW-19-2	AQ	05/13/10 10:10	10	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD
BMI10051405-05A	MW-19-1	AQ	05/13/10 11:13	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-06A	EB-11-05/13/10	AQ	05/13/10 10:59	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051405-07A	TB-11-05/13/10	AQ	05/13/10 00:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 5/10/10

Comments: No security seals. Frozen ice. Temp Blank #8769 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). :

	Signature	Print Name	Company	Date/Time
Logged in by:	Elizabeth Adcox	Elizabeth Adcox	**Alpha Analytical, Inc.**	5.14.10 1120

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

28937

Billing Information:

Name GERALD TOMPKINS / BATTELLE
Address 505 KING 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 X NV ___ WA ___
ID ___ OR ___ OTHER ___

Client Name: BATTELLE / DAVID CONNER
Address: 3990 OLD TOWN AVE. C-205
City, State, Zip: SAN DIEGO, CA 92110
P.O. #: 218013
Job #: 60058G2
EMail Address:
Phone #: (619) 726 7311
Fax #:
Report Attention:

Time Sampled	Date Sampled	Matrix* See Key Below	Sampled by: CHASE BRADDON Lab ID Number (Office Use Only)	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	VOC (524.2)	TOTAL Ca, LOAD	ARSENIC (200.8)	GEN CHEM (Na, K, Ca, Mg, Fe) (200.7)	ClO4 - (314.0)	GEN CHEM (300.0, 310.1, 160.1, 150.1)			REMARKS
0821	5/13/10	AQ	BMI1005140501	mw-19-5	NORM		5	X	X	X	X	X	X			
0857			-02	mw-19-4			5	X	X	X	X	X	X			
0931			-03	mw-19-3			5	X	X	X	X	X	X			
1010			-04	mw-19-2			10	X	X	X	X	X	X			MS/MSD
1113			-05	mw-19-1			5	X	X	X	X	X	X			
1059			-06	EB-11-05/13/10			5	X	X	X	X	X	X			EQUIPMENT BLANK
0700			-07	TB-11-05/13/10			1	X								TRIP BLANK

Analyses Required

Required QC Level? I II (III) IV

EDD / EDF? YES ___ NO ___

Global ID # _____

ADDITIONAL INSTRUCTIONS:

	Signature	Print Name	Company	Date	Time
Relinquished by		CHASE BRADDON	TRIGHT GEO, INC	05/13/10	1200
Received by	Elizabeth Adcox	Elizabeth Adcox	Alpha	5-14-10	1120
Relinquished by					
Received by					
Relinquished by					
Received by					

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis 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-Jun-10*

David Conner
Battelle Memorial Institute
3990 Old Town Ave Suite C-205
San Diego, CA 92110
(818) 393-2808

CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring
Work Order: BMI10051821 **Cooler Temp:** 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
10051821-01A	MW-18-5	Aqueous
10051821-02A	MW-18-4	Aqueous
10051821-03A	MW-18-3	Aqueous
10051821-04A	MW-18-2	Aqueous
10051821-05A	MW-18-1	Aqueous
10051821-06A	EB-12-05/17/10	Aqueous
10051821-07A	TB-12-05/17/10	Aqueous

Manually Integrated Analytes

Alpha's Sample ID	Test Reference	Analyte
10051821-02A	EPA Method 314.0	Perchlorate
10051821-03A	EPA Method 314.0	Perchlorate
10051821-04A	EPA Method 314.0	Perchlorate

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

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

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

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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/18/10

Job: G005862/JPL Groundwater Monitoring

Anions by IC
EPA Method 300.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-18-5**				
Lab ID : BMI10051821-01A Chloride	11	0.50 mg/L	05/18/10 11:27	05/18/10 13:24
Date Sampled 05/17/10 09:48 Nitrite (NO2) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 13:24
Nitrate (NO3) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 13:24
Phosphate, ortho - P	ND	0.50 mg/L	05/18/10 11:27	05/18/10 13:24
Sulfate (SO4)	5.4	0.50 mg/L	05/18/10 11:27	05/18/10 13:24
Client ID: **MW-18-4**				
Lab ID : BMI10051821-02A Chloride	17	0.50 mg/L	05/18/10 11:27	05/18/10 14:20
Date Sampled 05/17/10 10:25 Nitrite (NO2) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 14:20
Nitrate (NO3) - N	1.7	0.25 mg/L	05/18/10 11:27	05/18/10 14:20
Phosphate, ortho - P	ND	0.50 mg/L	05/18/10 11:27	05/18/10 14:20
Sulfate (SO4)	29	0.50 mg/L	05/18/10 11:27	05/18/10 14:20
Client ID: **MW-18-3**				
Lab ID : BMI10051821-03A Chloride	19	0.50 mg/L	05/18/10 11:27	05/18/10 14:38
Date Sampled 05/17/10 10:59 Nitrite (NO2) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 14:38
Nitrate (NO3) - N	1.7	0.25 mg/L	05/18/10 11:27	05/18/10 14:38
Phosphate, ortho - P	ND	0.50 mg/L	05/18/10 11:27	05/18/10 14:38
Sulfate (SO4)	37	0.50 mg/L	05/18/10 11:27	05/18/10 14:38
Client ID: **MW-18-2**				
Lab ID : BMI10051821-04A Chloride	23	0.50 mg/L	05/18/10 11:27	05/18/10 14:57
Date Sampled 05/17/10 11:31 Nitrite (NO2) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 14:57
Nitrate (NO3) - N	1.9	0.25 mg/L	05/18/10 11:27	05/18/10 14:57
Phosphate, ortho - P	ND	0.50 mg/L	05/18/10 11:27	05/18/10 14:57
Sulfate (SO4)	45	0.50 mg/L	05/18/10 11:27	05/18/10 14:57
Client ID: **MW-18-1**				
Lab ID : BMI10051821-05A Chloride	10	0.50 mg/L	05/18/10 11:27	05/18/10 15:15
Date Sampled 05/17/10 12:17 Nitrite (NO2) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 15:15
Nitrate (NO3) - N	0.58	0.25 mg/L	05/18/10 11:27	05/18/10 15:15
Phosphate, ortho - P	ND	0.50 mg/L	05/18/10 11:27	05/18/10 15:15
Sulfate (SO4)	39	0.50 mg/L	05/18/10 11:27	05/18/10 15:15
Client ID: **EB-12-05/17/10**				
Lab ID : BMI10051821-06A Chloride	ND	0.50 mg/L	05/18/10 11:27	05/18/10 15:34
Date Sampled 05/17/10 12:00 Nitrite (NO2) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 15:34
Nitrate (NO3) - N	ND	0.25 mg/L	05/18/10 11:27	05/18/10 15:34
Phosphate, ortho - P	ND	0.50 mg/L	05/18/10 11:27	05/18/10 15:34
Sulfate (SO4)	ND	0.50 mg/L	05/18/10 11:27	05/18/10 15:34

Alpha Analytical, Inc.

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

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

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.

6/1/10

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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/18/10

Job: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-18-5**				
Lab ID : BMI10051821-01A Perchlorate	2.08	1.00 µg/L	05/19/10 12:07	05/19/10 13:58
Date Sampled 05/17/10 09:48				
Client ID: **MW-18-4**				
Lab ID : BMI10051821-02A Perchlorate	67.2	1.00 µg/L	05/19/10 12:07	05/19/10 14:53
Date Sampled 05/17/10 10:25				
Client ID: **MW-18-3**				
Lab ID : BMI10051821-03A Perchlorate	62.4	1.00 µg/L	05/19/10 12:07	05/19/10 15:12
Date Sampled 05/17/10 10:59				
Client ID: **MW-18-2**				
Lab ID : BMI10051821-04A Perchlorate	85.9	1.00 µg/L	05/19/10 12:07	05/19/10 15:30
Date Sampled 05/17/10 11:31				
Client ID: **MW-18-1**				
Lab ID : BMI10051821-05A Perchlorate	ND	1.00 µg/L	05/19/10 12:07	05/19/10 15:48
Date Sampled 05/17/10 12:17				
Client ID: **EB-12-05/17/10**				
Lab ID : BMI10051821-06A Perchlorate	ND	1.00 µg/L	05/19/10 12:07	05/19/10 16:07
Date Sampled 05/17/10 12:00				

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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6/1/10
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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/18/10

Job: G005862/JPL Groundwater Monitoring

Alkalinity
SM2320B

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-18-5**				
Lab ID : BMI10051821-01A	Alkalinity, Bicarbonate (As CaCO3)	130	10 mg/L	05/21/10 12:59	05/21/10 12:59
Date Sampled 05/17/10 09:48	Alkalinity, Carbonate (As CaCO3)	13	10 mg/L	05/21/10 12:59	05/21/10 12:59
	Alkalinity, Total (As CaCO3 at pH 4.5)	150	10 mg/L	05/21/10 12:59	05/21/10 12:59
Client ID: **MW-18-4**				
Lab ID : BMI10051821-02A	Alkalinity, Bicarbonate (As CaCO3)	180	10 mg/L	05/21/10 13:05	05/21/10 13:05
Date Sampled 05/17/10 10:25	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:05	05/21/10 13:05
	Alkalinity, Total (As CaCO3 at pH 4.5)	180	10 mg/L	05/21/10 13:05	05/21/10 13:05
Client ID: **MW-18-3**				
Lab ID : BMI10051821-03A	Alkalinity, Bicarbonate (As CaCO3)	220	10 mg/L	05/21/10 13:09	05/21/10 13:09
Date Sampled 05/17/10 10:59	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:09	05/21/10 13:09
	Alkalinity, Total (As CaCO3 at pH 4.5)	220	10 mg/L	05/21/10 13:09	05/21/10 13:09
Client ID: **MW-18-2**				
Lab ID : BMI10051821-04A	Alkalinity, Bicarbonate (As CaCO3)	210	10 mg/L	05/21/10 13:13	05/21/10 13:13
Date Sampled 05/17/10 11:31	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:13	05/21/10 13:13
	Alkalinity, Total (As CaCO3 at pH 4.5)	210	10 mg/L	05/21/10 13:13	05/21/10 13:13
Client ID: **MW-18-1**				
Lab ID : BMI10051821-05A	Alkalinity, Bicarbonate (As CaCO3)	170	10 mg/L	05/21/10 13:17	05/21/10 13:17
Date Sampled 05/17/10 12:17	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:17	05/21/10 13:17
	Alkalinity, Total (As CaCO3 at pH 4.5)	170	10 mg/L	05/21/10 13:17	05/21/10 13:17
Client ID: **EB-12-05/17/10**				
Lab ID : BMI10051821-06A	Alkalinity, Bicarbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:27	05/21/10 13:27
Date Sampled 05/17/10 12:00	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:27	05/21/10 13:27
	Alkalinity, Total (As CaCO3 at pH 4.5)	ND	10 mg/L	05/21/10 13:27	05/21/10 13:27

ND = Not Detected

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/18/10

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-18-5**				
Lab ID : BMI10051821-01A Sodium (Na)	47	0.50 mg/L	05/19/10 10:00	05/20/10 16:42
Date Sampled 05/17/10 09:48 Magnesium (Mg)	4.3	0.50 mg/L	05/19/10 10:00	05/20/10 16:42
Potassium (K)	1.3	0.50 mg/L	05/19/10 10:00	05/20/10 16:42
Calcium (Ca)	11	0.50 mg/L	05/19/10 10:00	05/20/10 16:42
Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 16:42
Iron (Fe)	0.21	0.10 mg/L	05/19/10 10:00	05/20/10 16:42
Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 16:42
Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 16:42
Client ID: **MW-18-4**				
Lab ID : BMI10051821-02A Sodium (Na)	30	0.50 mg/L	05/19/10 10:00	05/20/10 17:05
Date Sampled 05/17/10 10:25 Magnesium (Mg)	14	0.50 mg/L	05/19/10 10:00	05/20/10 17:05
Potassium (K)	1.7	0.50 mg/L	05/19/10 10:00	05/20/10 17:05
Calcium (Ca)	40	0.50 mg/L	05/19/10 10:00	05/20/10 17:05
Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:05
Iron (Fe)	0.50	0.10 mg/L	05/19/10 10:00	05/20/10 17:05
Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 17:05
Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:05
Client ID: **MW-18-3**				
Lab ID : BMI10051821-03A Sodium (Na)	22	0.50 mg/L	05/19/10 10:00	05/20/10 17:10
Date Sampled 05/17/10 10:59 Magnesium (Mg)	18	0.50 mg/L	05/19/10 10:00	05/20/10 17:10
Potassium (K)	2.5	0.50 mg/L	05/19/10 10:00	05/20/10 17:10
Calcium (Ca)	60	0.50 mg/L	05/19/10 10:00	05/20/10 17:10
Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:10
Iron (Fe)	0.43	0.10 mg/L	05/19/10 10:00	05/20/10 17:10
Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 17:10
Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:10
Client ID: **MW-18-2**				
Lab ID : BMI10051821-04A Sodium (Na)	19	0.50 mg/L	05/19/10 10:00	05/20/10 17:16
Date Sampled 05/17/10 11:31 Magnesium (Mg)	19	0.50 mg/L	05/19/10 10:00	05/20/10 17:16
Potassium (K)	2.3	0.50 mg/L	05/19/10 10:00	05/20/10 17:16
Calcium (Ca)	55	0.50 mg/L	05/19/10 10:00	05/20/10 17:16
Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:16
Iron (Fe)	0.37	0.10 mg/L	05/19/10 10:00	05/20/10 17:16
Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 17:16
Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:16

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Client ID: **MW-18-1**					
Lab ID : BMI10051821-05A	Sodium (Na)	17	0.50 mg/L	05/19/10 10:00	05/20/10 17:21
Date Sampled 05/17/10 12:17	Magnesium (Mg)	14	0.50 mg/L	05/19/10 10:00	05/20/10 17:21
	Potassium (K)	2.3	0.50 mg/L	05/19/10 10:00	05/20/10 17:21
	Calcium (Ca)	43	0.50 mg/L	05/19/10 10:00	05/20/10 17:21
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:21
	Iron (Fe)	0.72	0.10 mg/L	05/19/10 10:00	05/20/10 17:21
	Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 17:21
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:21
Client ID: **EB-12-05/17/10**					
Lab ID : BMI10051821-06A	Sodium (Na)	ND	0.50 mg/L	05/19/10 10:00	05/20/10 17:27
Date Sampled 05/17/10 12:00	Magnesium (Mg)	ND	0.50 mg/L	05/19/10 10:00	05/20/10 17:27
	Potassium (K)	ND	0.50 mg/L	05/19/10 10:00	05/20/10 17:27
	Calcium (Ca)	ND	0.50 mg/L	05/19/10 10:00	05/20/10 17:27
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:27
	Iron (Fe)	ND	0.10 mg/L	05/19/10 10:00	05/20/10 17:27
	Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 17:27
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 17:27

ND = Not Detected

Roger Scholl Randy Gardner Walter Hinchman

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/18/10

Job: G005862/JPL Groundwater Monitoring

pH (Range 1.7 to 12.4)
EPA Method 150.2 / SM4500HB / SW9040C

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-18-5**					
Lab ID : BMI10051821-01A	pH	8.6	1.7 pH Units	05/18/10 13:33	05/18/10 13:33
Date Sampled 05/17/10 09:48	pH - Temperature	20	1.0 °C	05/18/10 13:33	05/18/10 13:33
Client ID: **MW-18-4**					
Lab ID : BMI10051821-02A	pH	8.0	1.7 pH Units	05/18/10 13:37	05/18/10 13:37
Date Sampled 05/17/10 10:25	pH - Temperature	19	1.0 °C	05/18/10 13:37	05/18/10 13:37
Client ID: **MW-18-3**					
Lab ID : BMI10051821-03A	pH	7.8	1.7 pH Units	05/18/10 13:40	05/18/10 13:40
Date Sampled 05/17/10 10:59	pH - Temperature	19	1.0 °C	05/18/10 13:40	05/18/10 13:40
Client ID: **MW-18-2**					
Lab ID : BMI10051821-04A	pH	7.6	1.7 pH Units	05/18/10 13:43	05/18/10 13:43
Date Sampled 05/17/10 11:31	pH - Temperature	19	1.0 °C	05/18/10 13:43	05/18/10 13:43
Client ID: **MW-18-1**					
Lab ID : BMI10051821-05A	pH	7.0	1.7 pH Units	05/18/10 13:47	05/18/10 13:47
Date Sampled 05/17/10 12:17	pH - Temperature	19	1.0 °C	05/18/10 13:47	05/18/10 13:47
Client ID: **EB-12-05/17/10**					
Lab ID : BMI10051821-06A	pH	6.1	1.7 pH Units	05/18/10 13:50	05/18/10 13:50
Date Sampled 05/17/10 12:00	pH - Temperature	19	1.0 °C	05/18/10 13:50	05/18/10 13:50

The EPA has established an analytical holding time of 15 minutes for this method as documented in the Methods Update Rule, Federal Register, Vol 72, No 47, March 2007. This holding time will always be exceeded, unless samples are analyzed in the field.
The laboratory performed this analysis in the shortest practical holding time after sample receipt.

Roger Scholl Randy Gardner Walter Hinchman

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San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/18/10

Job: G005862/JPL Groundwater Monitoring

Total Dissolved Solids (TDS)
SM2540C

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-18-5**					
Lab ID : BMI10051821-01A	Solids, Total Dissolved (TDS)	180	10 mg/L	05/21/10	05/21/10
Date Sampled 05/17/10 09:48					
Client ID: **MW-18-4**					
Lab ID : BMI10051821-02A	Solids, Total Dissolved (TDS)	280	10 mg/L	05/21/10	05/21/10
Date Sampled 05/17/10 10:25					
Client ID: **MW-18-3**					
Lab ID : BMI10051821-03A	Solids, Total Dissolved (TDS)	310	10 mg/L	05/21/10	05/21/10
Date Sampled 05/17/10 10:59					
Client ID: **MW-18-2**					
Lab ID : BMI10051821-04A	Solids, Total Dissolved (TDS)	310	10 mg/L	05/21/10	05/21/10
Date Sampled 05/17/10 11:31					
Client ID: **MW-18-1**					
Lab ID : BMI10051821-05A	Solids, Total Dissolved (TDS)	220	10 mg/L	05/21/10	05/21/10
Date Sampled 05/17/10 12:17					
Client ID: **EB-12-05/17/10**					
Lab ID : BMI10051821-06A	Solids, Total Dissolved (TDS)	ND	10 mg/L	05/21/10	05/21/10
Date Sampled 05/17/10 12:00					

ND = Not Detected

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Job: G005862/JPL Groundwater Monitoring

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

Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID : **MW-18-5**					
Lab ID : BMI10051821-01A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 13:50	05/20/10 13:50
Date Received : 05/18/10					
Date Sampled : 05/17/10 09:48					
Client ID : **MW-18-4**					
Lab ID : BMI10051821-02A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 14:12	05/20/10 14:12
Date Received : 05/18/10					
Date Sampled : 05/17/10 10:25					
Client ID : **MW-18-3**					
Lab ID : BMI10051821-03A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 14:34	05/20/10 14:34
Date Received : 05/18/10					
Date Sampled : 05/17/10 10:59					
Client ID : **MW-18-2**					
Lab ID : BMI10051821-04A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 14:57	05/20/10 14:57
Date Received : 05/18/10					
Date Sampled : 05/17/10 11:31					
Client ID : **MW-18-1**					
Lab ID : BMI10051821-05A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 15:19	05/20/10 15:19
Date Received : 05/18/10					
Date Sampled : 05/17/10 12:17					
Client ID : **EB-12-05/17/10**					
Lab ID : BMI10051821-06A	Acetone	13	10 µg/L	05/20/10 12:43	05/20/10 12:43
Date Received : 05/18/10					
Date Sampled : 05/17/10 12:00					
Client ID : **TB-12-05/17/10**					
Lab ID : BMI10051821-07A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 12:21	05/20/10 12:21
Date Received : 05/18/10					
Date Sampled : 05/17/10 07:00					

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Note: Analysis conducted using EPA Method 524.2 criteria.

ND = Not Detected

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San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051821-01A
Client I.D. Number: MW-18-5

Sampled: 05/17/10 09:48
Received: 05/18/10
Extracted: 05/20/10 13:50
Analyzed: 05/20/10 13:50

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	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	100		(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	107		(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	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

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.

6/1/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051821-02A
Client I.D. Number: MW-18-4

Sampled: 05/17/10 10:25
Received: 05/18/10
Extracted: 05/20/10 14:12
Analyzed: 05/20/10 14:12

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	1.8	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	7.2	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	0.88	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND		1.0	µg/L
26	Bromodichloromethane	ND	0.50	µg/L	61	Naphthalene	ND	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	99		(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	107		(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	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						

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.

6/1/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051821-03A
Client I.D. Number: MW-18-3

Sampled: 05/17/10 10:59
Received: 05/18/10
Extracted: 05/20/10 14:34
Analyzed: 05/20/10 14:34

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	1.6	0.50 µg/L	51	tert-Butylbenzene	ND		0.50	µg/L
17	2,2-Dichloropropane	ND	0.50 µg/L	52	1,2,4-Trimethylbenzene	ND		0.50	µg/L
18	1,2-Dichloroethane	ND	0.50 µg/L	53	sec-Butylbenzene	ND		0.50	µg/L
19	1,1,1-Trichloroethane	ND	0.50 µg/L	54	1,3-Dichlorobenzene	ND		0.50	µg/L
20	1,1-Dichloropropene	ND	0.50 µg/L	55	1,4-Dichlorobenzene	ND		0.50	µg/L
21	Carbon tetrachloride	11	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	0.88	0.50 µg/L	60	1,2,4-Trichlorobenzene	ND		1.0	µg/L
26	Bromodichloromethane	ND	0.50 µg/L	61	Naphthalene	ND	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	101		(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50 µg/L	65	Surr: Toluene-d8	107		(70-130)	%REC
31	Toluene	ND	0.50 µg/L	66	Surr: 4-Bromofluorobenzene	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						

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

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.

6/1/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051821-04A
Client I.D. Number: MW-18-2

Sampled: 05/17/10 11:31
Received: 05/18/10
Extracted: 05/20/10 14:57
Analyzed: 05/20/10 14:57

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	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	102		(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	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 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.

6/1/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051821-05A
Client I.D. Number: MW-18-1

Sampled: 05/17/10 12:17
Received: 05/18/10
Extracted: 05/20/10 15:19
Analyzed: 05/20/10 15:19

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	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	99		(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50 µg/L	65	Surr: Toluene-d8	107		(70-130)	%REC
31	Toluene	ND	0.50 µg/L	66	Surr: 4-Bromofluorobenzene	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 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.

6/1/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051821-06A
Client I.D. Number: EB-12-05/17/10

Sampled: 05/17/10 12:00
Received: 05/18/10
Extracted: 05/20/10 12:43
Analyzed: 05/20/10 12:43

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	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	99		(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	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						

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

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.

6/1/10
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
3990 Old Town Ave
San Diego, CA 92110
Job: G005862/JPL Groundwater Monitoring

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

Alpha Analytical Number: BMI10051821-07A
Client I.D. Number: TB-12-05/17/10

Sampled: 05/17/10 07:00
Received: 05/18/10
Extracted: 05/20/10 12:21
Analyzed: 05/20/10 12:21

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	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	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	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	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	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.

6/1/10
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: BMI10051821 **Job:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
10051821-01A	MW-18-5	Aqueous	2
10051821-02A	MW-18-4	Aqueous	2
10051821-03A	MW-18-3	Aqueous	2
10051821-04A	MW-18-2	Aqueous	2
10051821-05A	MW-18-1	Aqueous	2
10051821-06A	EB-12-05/17/10	Aqueous	2
10051821-07A	TB-12-05/17/10	Aqueous	2

6/1/10

Report Date

Alpha Analytical, Inc.

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Date: *25-May-10*

QC Summary Report

Work Order: 10051821

Method Blank

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

File ID: **21** Batch ID: **24282** Analysis Date: **05/18/2010 12:29**

Sample ID: **MB-24282** Units : **mg/L** Run ID: **IC_1_100518A** Prep Date: **05/18/2010 11:27**

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: **22** Batch ID: **24282** Analysis Date: **05/18/2010 12:47**

Sample ID: **LFB-24282** Units : **mg/L** Run ID: **IC_1_100518A** Prep Date: **05/18/2010 11:27**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	49.7	0.5	50		99	90	110			
Nitrite (NO2) - N	4.72	0.25	5		94	90	110			
Nitrate (NO3) - N	4.99	0.25	5		99.8	90	110			
Phosphate, ortho - P	4.65	0.5	5		93	90	110			
Sulfate (SO4)	99.5	0.5	100		99.5	90	110			

Sample Matrix Spike

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

File ID: **25** Batch ID: **24282** Analysis Date: **05/18/2010 13:43**

Sample ID: **10051821-01ALFM** Units : **mg/L** Run ID: **IC_1_100518A** Prep Date: **05/18/2010 11:27**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	115	0.5	100	10.96	104	80	120			
Nitrite (NO2) - N	9.04	0.25	10	0	90	80	120			
Nitrate (NO3) - N	10.2	0.25	10	0	102	80	120			
Phosphate, ortho - P	8.34	0.5	10	0	83	80	120			
Sulfate (SO4)	198	0.5	200	5.405	96	80	120			

Sample Matrix Spike Duplicate

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

File ID: **26** Batch ID: **24282** Analysis Date: **05/18/2010 14:01**

Sample ID: **10051821-01ALFMD** Units : **mg/L** Run ID: **IC_1_100518A** Prep Date: **05/18/2010 11:27**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	115	0.5	100	10.96	105	80	120	115.3	0.1(15)	
Nitrite (NO2) - N	9.09	0.25	10	0	91	80	120	9.039	0.5(15)	
Nitrate (NO3) - N	10.1	0.25	10	0	101	80	120	10.22	1.1(15)	
Phosphate, ortho - P	8.78	0.5	10	0	88	80	120	8.34	5.2(15)	
Sulfate (SO4)	197	0.5	200	5.405	96	80	120	197.9	0.4(15)	

Comments:

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Alpha Analytical, Inc.

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Date: *25-May-10*

QC Summary Report

Work Order: 10051821

Method Blank

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

File ID: **14** Batch ID: **24294** Analysis Date: **05/19/2010 13:03**

Sample ID: **MB-24294** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

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: **24294** Analysis Date: **05/19/2010 13:21**

Sample ID: **LFB-24294** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	26	2	25		104	85	115			

Sample Matrix Spike

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

File ID: **18** Batch ID: **24294** Analysis Date: **05/19/2010 14:16**

Sample ID: **10051821-01ALFM** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	28.5	2	25	2.075	106	80	120			

Sample Matrix Spike Duplicate

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

File ID: **19** Batch ID: **24294** Analysis Date: **05/19/2010 14:35**

Sample ID: **10051821-01ALFMD** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	28.2	2	25	2.075	104	80	120	28.45	1.0(15)	

Comments:

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Date: *25-May-10*

QC Summary Report

Work Order: 10051821

Laboratory Control Spike Type **LCS** Test Code: **SM2320B**

File ID: Batch ID: **W0521ALA** Analysis Date: **05/21/2010 12:56**

Sample ID: **LCS-W0521ALA** Units : **mg/L** Run ID: **WETLAB_100521G** Prep Date: **05/21/2010 12:56**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Alkalinity, Bicarbonate (As CaCO3)	243.4	10	250		97	80	120			
Alkalinity, Carbonate (As CaCO3)	243.4	10	250		97	80	120			
Alkalinity, Total (As CaCO3 at pH 4.5)	243	10	250		97	80	120			

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-Jun-10*

QC Summary Report

Work Order: 10051821

Method Blank

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

File ID: **051910.B\87B.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:19**

Sample ID: **MB-24287** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	ND	0.5								
Magnesium (Mg)	ND	0.5								
Potassium (K)	ND	0.5								
Calcium (Ca)	ND	0.5								
Chromium (Cr)	ND	0.005								
Iron (Fe)	ND	0.1								
Arsenic (As)	ND	0.002								
Lead (Pb)	ND	0.005								

Laboratory Control Spike

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

File ID: **051910.B\871.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:25**

Sample ID: **LCS-24287** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	5.04	0.5	5		101	85	115			
Magnesium (Mg)	5.3	0.5	5		106	85	115			
Potassium (K)	4.67	0.5	5		93	85	115			
Calcium (Ca)	4.75	0.5	5		95	85	115			
Chromium (Cr)	0.0484	0.005	0.05		97	85	115			
Iron (Fe)	4.67	0.2	5		93	85	115			
Arsenic (As)	0.0475	0.002	0.05		95	85	115			
Lead (Pb)	0.0522	0.005	0.05		104	85	115			

Sample Matrix Spike

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

File ID: **051910.B\87MS.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:48**

Sample ID: **10051821-01AMS** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	51.4	0.5	5	46.91	91	70	130			
Magnesium (Mg)	8.56	0.5	5	4.306	85	70	130			
Potassium (K)	5.09	0.5	5	1.27	76	70	130			
Calcium (Ca)	15.3	0.5	5	11.33	80	70	130			
Chromium (Cr)	0.044	0.005	0.05	0	88	70	130			
Iron (Fe)	4.14	0.1	5	0.2132	78	70	130			
Arsenic (As)	0.0443	0.002	0.05	0	89	70	130			
Lead (Pb)	0.0468	0.005	0.05	0	94	70	130			

Sample Matrix Spike Duplicate

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

File ID: **051910.B\87MSD.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:53**

Sample ID: **10051821-01AMSD** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	48	0.5	5	46.91	22	70	130	51.44	6.9(20)	M3
Magnesium (Mg)	7.4	0.5	5	4.306	62	70	130	8.555	14.5(20)	M2
Potassium (K)	4.17	0.5	5	1.27	58	70	130	5.088	19.8(20)	M2
Calcium (Ca)	13.9	0.5	5	11.33	50	70	130	15.34	10.2(20)	M2
Chromium (Cr)	0.0352	0.005	0.05	0	70	70	130	0.04401	22.3(20)	R5
Iron (Fe)	3.24	0.1	5	0.2132	61	70	130	4.136	24.2(20)	M2 R58
Arsenic (As)	0.0387	0.002	0.05	0	77	70	130	0.04431	13.5(20)	
Lead (Pb)	0.0376	0.005	0.05	0	75	70	130	0.04679	21.8(20)	R5

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10051821

Comments:

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

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

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.

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

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

Alpha Analytical, Inc.

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Date: *25-May-10*

QC Summary Report

Work Order: 10051821

Laboratory Control Spike Type **LCS** Test Code: **EPA Method 150.2 / SM4500HB / SW9040C**

File ID: Batch ID: **W0518PH** Analysis Date: **05/18/2010 13:27**

Sample ID: **LCS-W0518PH** Units : **pH Units** Run ID: **WETLAB_100518B** Prep Date: **05/18/2010 13:27**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
pH	5.05	1.7	5		101	90	110			

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: *25-May-10*

QC Summary Report

Work Order: 10051821

Method Blank

Type **MBLK** Test Code: **SM2540C**

File ID: Batch ID: **W0519DS** Analysis Date: **05/21/2010 00:00**

Sample ID: **MBLK-W0519DS** Units : **mg/L** Run ID: **WETLAB_100519B** Prep Date: **05/21/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	ND	10								

Laboratory Control Spike

Type **LCS** Test Code: **SM2540C**

File ID: Batch ID: **W0519DS** Analysis Date: **05/21/2010 00:00**

Sample ID: **LCS-W0519DS** Units : **mg/L** Run ID: **WETLAB_100519B** Prep Date: **05/21/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	102	10	100		102	80	120			

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: *27-May-10*

QC Summary Report

Work Order: 10051821

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

File ID: **10052007.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 10:29**

Sample ID: **MBLK MS15W0520M** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 10:29**

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	9.61		10		96	70	130			
Surr: Toluene-d8	10.7		10		107	70	130			

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Date: *27-May-10*

QC Summary Report

Work Order: 10051821

Surr: 4-Bromofluorobenzene	10.5		10	105	70	130				

Laboratory Control Spike Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **10052003.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 08:52**

Sample ID: **LCS MS15W0520M** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 08:52**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	10.3	1	10		103	70	130			
Chloromethane	11.1	2	10		111	70	130			
Vinyl chloride	10.6	1	10		106	70	130			
Chloroethane	8.73	1	10		87	70	130			
Bromomethane	11.6	2	10		116	70	130			
Trichlorofluoromethane	8.36	1	10		84	70	130			
1,1-Dichloroethene	11.2	1	10		112	70	130			
Dichloromethane	9.58	2	10		96	70	130			
trans-1,2-Dichloroethene	11.1	1	10		111	70	130			
Methyl tert-butyl ether (MTBE)	8.5	0.5	10		85	70	130			
1,1-Dichloroethane	11.1	1	10		111	70	130			
cis-1,2-Dichloroethene	10.5	1	10		105	70	130			
Bromochloromethane	9.26	1	10		93	70	130			
Chloroform	10.4	1	10		104	70	130			
2,2-Dichloropropane	10.2	1	10		102	70	130			
1,2-Dichloroethane	9.3	1	10		93	70	130			
1,1,1-Trichloroethane	11.3	1	10		113	70	130			
1,1-Dichloropropene	11.6	1	10		116	70	130			
Carbon tetrachloride	10.6	1	10		106	70	130			
Benzene	10.6	0.5	10		106	70	130			
Dibromomethane	8.77	1	10		88	70	130			
1,2-Dichloropropane	9.66	1	10		97	70	130			
Trichloroethene	10.1	1	10		101	70	130			
Bromodichloromethane	9.46	1	10		95	70	130			
cis-1,3-Dichloropropene	9.63	1	10		96	70	130			
trans-1,3-Dichloropropene	9.01	1	10		90	70	130			
1,1,2-Trichloroethane	8.72	1	10		87	70	130			
Toluene	10.1	0.5	10		101	70	130			
1,3-Dichloropropane	8.71	1	10		87	70	130			
Dibromochloromethane	8.24	1	10		82	70	130			
1,2-Dibromoethane (EDB)	17.2	2	20		86	70	130			
Tetrachloroethene	10.1	1	10		101	70	130			
1,1,1,2-Tetrachloroethane	9.49	1	10		95	70	130			
Chlorobenzene	9.48	1	10		95	70	130			
Ethylbenzene	9.98	0.5	10		99.8	70	130			
m,p-Xylene	9.97	0.5	10		99.7	70	130			
Bromoform	7.5	1	10		75	70	130			
Styrene	9.99	1	10		99.9	70	130			
o-Xylene	9.65	0.5	10		97	70	130			
1,1,2,2-Tetrachloroethane	7.66	1	10		77	70	130			
1,2,3-Trichloropropane	14.9	2	20		75	70	130			
Isopropylbenzene	12.3	1	10		123	70	130			
Bromobenzene	10.7	1	10		107	70	130			
n-Propylbenzene	12.4	1	10		124	70	130			
4-Chlorotoluene	11.8	1	10		118	70	130			
2-Chlorotoluene	11.9	1	10		119	70	130			
1,3,5-Trimethylbenzene	12.5	1	10		125	70	130			
tert-Butylbenzene	11.7	1	10		117	70	130			
1,2,4-Trimethylbenzene	12.2	1	10		122	70	130			
sec-Butylbenzene	11.6	1	10		116	70	130			
1,3-Dichlorobenzene	10.8	1	10		108	70	130			
1,4-Dichlorobenzene	10.1	1	10		101	70	130			
4-Isopropyltoluene	12.2	1	10		122	70	130			
1,2-Dichlorobenzene	9.73	1	10		97	70	130			
n-Butylbenzene	12.6	1	10		126	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	40.6	3	50		81	70	130			
1,2,4-Trichlorobenzene	9.46	2	10		95	70	130			
Naphthalene	5.84	2	10		58	70(70)	130			L50
Hexachlorobutadiene	20.1	2	20		101	70	130			
1,2,3-Trichlorobenzene	7.67	2	10		77	70	130			
Surr: 1,2-Dichloroethane-d4	8.77		10		88	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			
Surr: 4-Bromofluorobenzene	11.4		10		114	70	130			

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Date: *27-May-10*

QC Summary Report

Work Order: 10051821

Sample Matrix Spike Type **MS** Test Code: **EPA Method SW8260B**

File ID: **10052009.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 11:14**

Sample ID: **10051821-01AMS** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 11:14**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	41	2.5	50	0	82	13	167			
Chloromethane	48.4	10	50	0	97	28	145			
Vinyl chloride	46.4	2.5	50	0	93	43	134			
Chloroethane	31.8	2.5	50	0	64	39	154			
Bromomethane	45.1	10	50	0	90	19	176			
Trichlorofluoromethane	34.1	2.5	50	0	68	34	160			
1,1-Dichloroethene	50	2.5	50	0	100	60	130			
Dichloromethane	45.4	10	50	0	91	68	130			
trans-1,2-Dichloroethene	50.7	2.5	50	0	101	63	130			
Methyl tert-butyl ether (MTBE)	50.2	1.3	50	0	100	56	141			
1,1-Dichloroethane	51.1	2.5	50	0	102	61	130			
cis-1,2-Dichloroethene	50.1	2.5	50	0	100	70	130			
Bromochloromethane	46.1	2.5	50	0	92	70	130			
Chloroform	48.8	2.5	50	0	98	67	130			
2,2-Dichloropropane	35.8	2.5	50	0	72	30	152			
1,2-Dichloroethane	49.5	2.5	50	0	99	60	135			
1,1,1-Trichloroethane	49.8	2.5	50	0	99.6	59	137			
1,1-Dichloropropene	52.2	2.5	50	0	104	63	130			
Carbon tetrachloride	45.7	2.5	50	0	91	50	147			
Benzene	49.3	1.3	50	0	99	67	130			
Dibromomethane	47.3	2.5	50	0	95	69	133			
1,2-Dichloropropane	47	2.5	50	0	94	69	130			
Trichloroethene	45.7	2.5	50	0	91	69	130			
Bromodichloromethane	45.4	2.5	50	0	91	66	134			
cis-1,3-Dichloropropene	46	2.5	50	0	92	63	130			
trans-1,3-Dichloropropene	44.8	2.5	50	0	90	66	131			
1,1,2-Trichloroethane	46.2	2.5	50	0	92	68	130			
Toluene	44.9	1.3	50	0	90	66	130			
1,3-Dichloropropane	45.7	2.5	50	0	91	70	130			
Dibromochloromethane	40.8	2.5	50	0	82	70	130			
1,2-Dibromoethane (EDB)	88.9	5	100	0	89	70	130			
Tetrachloroethene	43.9	2.5	50	0	88	61	134			
1,1,1,2-Tetrachloroethane	43.8	2.5	50	0	88	70	130			
Chlorobenzene	43.7	2.5	50	0	87	70	130			
Ethylbenzene	44.3	1.3	50	0	89	68	130			
m,p-Xylene	44.2	1.3	50	0	88	64	130			
Bromoform	38	2.5	50	0	76	64	138			
Styrene	46.8	2.5	50	0	94	69	130			
o-Xylene	44	1.3	50	0	88	70	130			
1,1,2,2-Tetrachloroethane	43	2.5	50	0	86	65	131			
1,2,3-Trichloropropane	83.8	10	100	0	84	70	130			
Isopropylbenzene	50.4	2.5	50	0	101	64	138			
Bromobenzene	47.4	2.5	50	0	95	70	130			
n-Propylbenzene	51.2	2.5	50	0	102	66	132			
4-Chlorotoluene	49.9	2.5	50	0	99.8	70	130			
2-Chlorotoluene	50.2	2.5	50	0	100	70	130			
1,3,5-Trimethylbenzene	52	2.5	50	0	104	66	136			
tert-Butylbenzene	49	2.5	50	0	98	65	137			
1,2,4-Trimethylbenzene	51.6	2.5	50	0	103	65	137			
sec-Butylbenzene	48.6	2.5	50	0	97	66	134			
1,3-Dichlorobenzene	47.9	2.5	50	0	96	70	130			
1,4-Dichlorobenzene	45.6	2.5	50	0	91	70	130			
4-Isopropyltoluene	50.4	2.5	50	0	101	66	137			
1,2-Dichlorobenzene	44.6	2.5	50	0	89	70	130			
n-Butylbenzene	54.1	2.5	50	0	108	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	215	15	250	0	86	67	130			
1,2,4-Trichlorobenzene	44.9	10	50	0	90	61	137			
Naphthalene	38.2	10	50	0	76	40	167			
Hexachlorobutadiene	89.4	10	100	0	89	61	130			
1,2,3-Trichlorobenzene	40.8	10	50	0	82	51	144			
Surr: 1,2-Dichloroethane-d4	47.8		50		96	70	130			
Surr: Toluene-d8	48.9		50		98	70	130			
Surr: 4-Bromofluorobenzene	54.2		50		108	70	130			

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Date: *27-May-10*

QC Summary Report

Work Order: 10051821

Sample Matrix Spike Duplicate Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **10052010.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 11:36**

Sample ID: **10051821-01AMSD** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 11:36**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	36.9	2.5	50	0	74	13	167	40.97	10.5(20)	
Chloromethane	45.7	10	50	0	91	28	145	48.4	5.7(20)	
Vinyl chloride	42.4	2.5	50	0	85	43	134	46.39	9.1(20)	
Chloroethane	34.2	2.5	50	0	68	39	154	31.83	7.2(20)	
Bromomethane	48.4	10	50	0	97	19	176	45.11	6.9(20)	
Trichlorofluoromethane	32.8	2.5	50	0	66	34	160	34.14	4.0(20)	
1,1-Dichloroethene	46.2	2.5	50	0	92	60	130	50	8.0(20)	
Dichloromethane	45.8	10	50	0	92	68	130	45.4	0.8(20)	
trans-1,2-Dichloroethene	47	2.5	50	0	94	63	130	50.65	7.4(20)	
Methyl tert-butyl ether (MTBE)	50.8	1.3	50	0	102	56	141	50.21	1.2(20)	
1,1-Dichloroethane	48.9	2.5	50	0	98	61	130	51.11	4.3(20)	
cis-1,2-Dichloroethene	48.8	2.5	50	0	98	70	130	50.1	2.7(20)	
Bromochloromethane	48.1	2.5	50	0	96	70	130	46.14	4.2(20)	
Chloroform	47.7	2.5	50	0	95	67	130	48.79	2.3(20)	
2,2-Dichloropropane	36.2	2.5	50	0	72	30	152	35.84	1.1(20)	
1,2-Dichloroethane	50	2.5	50	0	100	60	135	49.49	1.0(20)	
1,1,1-Trichloroethane	47.8	2.5	50	0	96	59	137	49.82	4.2(20)	
1,1-Dichloropropene	49	2.5	50	0	98	63	130	52.19	6.4(20)	
Carbon tetrachloride	44.2	2.5	50	0	88	50	147	45.67	3.3(20)	
Benzene	47.4	1.3	50	0	95	67	130	49.34	4.1(20)	
Dibromomethane	48.5	2.5	50	0	97	69	133	47.29	2.6(20)	
1,2-Dichloropropane	46.7	2.5	50	0	93	69	130	47	0.6(20)	
Trichloroethene	42.4	2.5	50	0	85	69	130	45.68	7.5(20)	
Bromodichloromethane	47.1	2.5	50	0	94	66	134	45.38	3.7(20)	
cis-1,3-Dichloropropene	47.3	2.5	50	0	95	63	130	45.96	2.9(20)	
trans-1,3-Dichloropropene	47.1	2.5	50	0	94	66	131	44.75	5.1(20)	
1,1,2-Trichloroethane	48.1	2.5	50	0	96	68	130	46.18	4.1(20)	
Toluene	43.1	1.3	50	0	86	66	130	44.92	4.2(20)	
1,3-Dichloropropane	46.1	2.5	50	0	92	70	130	45.69	0.9(20)	
Dibromochloromethane	42.9	2.5	50	0	86	70	130	40.76	5.2(20)	
1,2-Dibromoethane (EDB)	91.5	5	100	0	91	70	130	88.86	2.9(20)	
Tetrachloroethene	40.8	2.5	50	0	82	61	134	43.87	7.4(20)	
1,1,1,2-Tetrachloroethane	44	2.5	50	0	88	70	130	43.77	0.5(20)	
Chlorobenzene	42.5	2.5	50	0	85	70	130	43.66	2.6(20)	
Ethylbenzene	42.2	1.3	50	0	84	68	130	44.34	5.0(20)	
m,p-Xylene	42.5	1.3	50	0	85	64	130	44.17	3.9(20)	
Bromoform	40.4	2.5	50	0	81	64	138	38	6.2(20)	
Styrene	46.6	2.5	50	0	93	69	130	46.76	0.4(20)	
o-Xylene	42.6	1.3	50	0	85	70	130	43.95	3.1(20)	
1,1,2,2-Tetrachloroethane	43.4	2.5	50	0	87	65	131	43.03	0.9(20)	
1,2,3-Trichloropropane	84.8	10	100	0	85	70	130	83.76	1.3(20)	
Isopropylbenzene	47.4	2.5	50	0	95	64	138	50.35	6.1(20)	
Bromobenzene	48.1	2.5	50	0	96	70	130	47.39	1.4(20)	
n-Propylbenzene	48.9	2.5	50	0	98	66	132	51.16	4.6(20)	
4-Chlorotoluene	49.3	2.5	50	0	99	70	130	49.88	1.2(20)	
2-Chlorotoluene	48.8	2.5	50	0	98	70	130	50.24	3.0(20)	
1,3,5-Trimethylbenzene	50	2.5	50	0	100	66	136	52.03	3.9(20)	
tert-Butylbenzene	46.6	2.5	50	0	93	65	137	49.03	5.1(20)	
1,2,4-Trimethylbenzene	50.6	2.5	50	0	101	65	137	51.58	1.8(20)	
sec-Butylbenzene	45.9	2.5	50	0	92	66	134	48.62	5.8(20)	
1,3-Dichlorobenzene	48.3	2.5	50	0	97	70	130	47.92	0.7(20)	
1,4-Dichlorobenzene	46.1	2.5	50	0	92	70	130	45.58	1.1(20)	
4-Isopropyltoluene	48.8	2.5	50	0	98	66	137	50.44	3.3(20)	
1,2-Dichlorobenzene	45.7	2.5	50	0	91	70	130	44.57	2.5(20)	
n-Butylbenzene	51.7	2.5	50	0	103	60	142	54.13	4.7(20)	
1,2-Dibromo-3-chloropropane (DBCP)	231	15	250	0	92	67	130	215	7.3(20)	
1,2,4-Trichlorobenzene	49.7	10	50	0	99	61	137	44.89	10.2(20)	
Naphthalene	41.7	10	50	0	83	40	167	38.19	8.7(20)	
Hexachlorobutadiene	92	10	100	0	92	61	130	89.38	2.9(20)	
1,2,3-Trichlorobenzene	46.2	10	50	0	92	51	144	40.83	12.3(20)	
Surr: 1,2-Dichloroethane-d4	47.9		50		96	70	130			
Surr: Toluene-d8	48.3		50		97	70	130			
Surr: 4-Bromofluorobenzene	53.9		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: *27-May-10*

QC Summary Report

Work Order: 10051821

Comments:

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

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

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

Billing Information :

CHAIN-OF-CUSTODY RECORD

CA

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

WorkOrder : BMIS10051821

Report Due By : 5:00 PM On : 02-Jun-10

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org

EDD Required : **Yes**

Sampled by : Chase Brogdon

PO : 218013

Client's COC # : 28929 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	18-May-10	**18-May-10**

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10051821-01A	MW-18-5	AQ	05/17/10 09:48	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051821-02A	MW-18-4	AQ	05/17/10 10:25	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051821-03A	MW-18-3	AQ	05/17/10 10:59	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051821-04A	MW-18-2	AQ	05/17/10 11:31	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051821-05A	MW-18-1	AQ	05/17/10 12:17	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051821-06A	EB-12-05/17/10	AQ	05/17/10 12:00	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051821-07A	TB-12-05/17/10	AQ	05/17/10 07:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/10/10

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

	Signature	Print Name	Company	Date/Time
Logged in by:	K Murray	K Murray	Alpha Analytical, Inc.	5/18/10 0955

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:
Name GERALD TOMPKINS / BATTELLE
Address 505 KING 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 X NV ___ WA ___ ID ___ OR ___ OTHER ___

28929

Page # 1 of 1

Client Name	P.O. #	Job #
BATTELLE / DAVID CONNER	218013	G005862
Address	**EMail Address**	
3990 OLD TOWN AVE, C-205		
City, State, Zip	**Phone #**	**Fax #**
SAN DIEGO CA 92110	(619) 726 7311	

Analyses Required

Required QC Level? I II (III) IV

EDD / EDF? YES ___ NO ___

Global ID # _____

Time Sampled	Date Sampled	Matrix* See Key Below	Sampled by CHASE BRADDON / Lab ID Number (Office Use Only)	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	VOC (524.2)	TOTAL Cr, LEAD ARSENIC (200.8)	GEN CHEM (NO3, K, Ca, Mg, FE, (200.7)	ClO4 - (314.0)	GEN CHEM (300.0 310.1, NO2, (50.1)			REMARKS
0948	5/17/10	AQ	BM11005182 1-01	MW-18-5	NORM		5	X	X	X	X	X			
1025			02	MW-18-4			5	X	X	X	X	X			
1059			03	MW-18-3			5	X	X	X	X	X			
1131			04	MW-18-2			5	X	X	X	X	X			
1217			05	MW-18-1			5	X	X	X	X	X			
1200			06	EB-12-05/17/10			5	X	X	X	X	X			EQUIPMENT BLANK
0700			07	TB-12-05/17/10			1	X							TRIP BLANK

ADDITIONAL INSTRUCTIONS:

	Signature	Print Name	Company	Date	Time
Relinquished by		CHASE BRADDON	INSIGHT ECC, INC	5/17/10	1330
Received by		Anthony Stark	Alpha Analytical	5/17/10	1370
Relinquished by		Anthony Stark	Alpha Analytical	5/18/10	0830
Received by	K Murray	K Murray	AAI	5/18/10	0940
Relinquished by					
Received by					

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis 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-Jun-10*

David Conner
Battelle Memorial Institute
655 West Broadway Suite 1420
San Diego, CA 92101
(818) 393-2808

CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring
Work Order: BMI10051901 **Cooler Temp:** 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
10051901-01A	MW-17-5	Aqueous
10051901-02A	MW-17-4	Aqueous
10051901-03A	MW-17-3	Aqueous
10051901-04A	MW-17-2	Aqueous
10051901-05A	MW-17-1	Aqueous
10051901-06A	DUPE-6-2Q10	Aqueous
10051901-07A	EB-13-05/18/10	Aqueous
10051901-08A	TB-13-05/18/10	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.

Alpha Analytical, Inc.

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

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/19/10

Job: G005862/JPL Groundwater Monitoring

Anions by IC
EPA Method 300.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-17-5**					
Lab ID : BMI10051901-01A	Chloride	9.2	0.50 mg/L	05/19/10 10:45	05/19/10 13:13
Date Sampled 05/18/10 09:06	Nitrite (NO2) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 13:13
	Nitrate (NO3) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 13:13
	Phosphate, ortho - P	ND	0.50 mg/L	05/19/10 10:45	05/19/10 13:13
	Sulfate (SO4)	19	0.50 mg/L	05/19/10 10:45	05/19/10 13:13
Client ID: **MW-17-4**					
Lab ID : BMI10051901-02A	Chloride	11	0.50 mg/L	05/19/10 10:45	05/19/10 14:08
Date Sampled 05/18/10 09:43	Nitrite (NO2) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 14:08
	Nitrate (NO3) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 14:08
	Phosphate, ortho - P	ND	0.50 mg/L	05/19/10 10:45	05/19/10 14:08
	Sulfate (SO4)	15	0.50 mg/L	05/19/10 10:45	05/19/10 14:08
Client ID: **MW-17-3**					
Lab ID : BMI10051901-03A	Chloride	57	50 mg/L	05/19/10 10:45	05/19/10 14:27
Date Sampled 05/18/10 11:00	Nitrite (NO2) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 14:27
	Nitrate (NO3) - N	10	0.25 mg/L	05/19/10 10:45	05/19/10 14:27
	Phosphate, ortho - P	ND	0.50 mg/L	05/19/10 10:45	05/19/10 14:27
	Sulfate (SO4)	60	0.50 mg/L	05/19/10 10:45	05/19/10 14:27
Client ID: **MW-17-2**					
Lab ID : BMI10051901-04A	Chloride	88	50 mg/L	05/19/10 10:45	05/19/10 14:45
Date Sampled 05/18/10 11:37	Nitrite (NO2) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 14:45
	Nitrate (NO3) - N	7.0	0.25 mg/L	05/19/10 10:45	05/19/10 14:45
	Phosphate, ortho - P	ND	0.50 mg/L	05/19/10 10:45	05/19/10 14:45
	Sulfate (SO4)	120	75 mg/L	05/19/10 10:45	05/19/10 14:45
Client ID: **MW-17-1**					
Lab ID : BMI10051901-05A	Chloride	12	0.50 mg/L	05/19/10 10:45	05/19/10 15:04
Date Sampled 05/18/10 12:20	Nitrite (NO2) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 15:04
	Nitrate (NO3) - N	0.76	0.25 mg/L	05/19/10 10:45	05/19/10 15:04
	Phosphate, ortho - P	ND	0.50 mg/L	05/19/10 10:45	05/19/10 15:04
	Sulfate (SO4)	34	0.50 mg/L	05/19/10 10:45	05/19/10 15:04
Client ID: **DUPE-6-2Q10**					
Lab ID : BMI10051901-06A	Chloride	12	0.50 mg/L	05/19/10 10:45	05/19/10 15:22
Date Sampled 05/18/10 00:00	Nitrite (NO2) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 15:22
	Nitrate (NO3) - N	0.82	0.25 mg/L	05/19/10 10:45	05/19/10 15:22
	Phosphate, ortho - P	ND	0.50 mg/L	05/19/10 10:45	05/19/10 15:22
	Sulfate (SO4)	35	0.50 mg/L	05/19/10 10:45	05/19/10 15:22

Alpha Analytical, Inc.

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Client ID: **EB-13-05/18/10**

Lab ID : BMI10051901-07A

Date Sampled 05/18/10 12:04

Chloride	ND	0.50 mg/L	05/19/10 10:45	05/19/10 15:41
Nitrite (NO2) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 15:41
Nitrate (NO3) - N	ND	0.25 mg/L	05/19/10 10:45	05/19/10 15:41
Phosphate, ortho - P	ND	0.50 mg/L	05/19/10 10:45	05/19/10 15:41
Sulfate (SO4)	ND	0.50 mg/L	05/19/10 10:45	05/19/10 15:41

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.

6/2/10

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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/19/10

Job: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-17-5**				
Lab ID : BMI10051901-01A Perchlorate	ND	1.00 µg/L	05/19/10 12:07	05/19/10 16:25
Date Sampled 05/18/10 09:06				
Client ID: **MW-17-4**				
Lab ID : BMI10051901-02A Perchlorate	ND	1.00 µg/L	05/19/10 12:07	05/19/10 16:44
Date Sampled 05/18/10 09:43				
Client ID: **MW-17-3**				
Lab ID : BMI10051901-03A Perchlorate	9.87	1.00 µg/L	05/19/10 12:07	05/19/10 17:02
Date Sampled 05/18/10 11:00				
Client ID: **MW-17-2**				
Lab ID : BMI10051901-04A Perchlorate	5.17	1.00 µg/L	05/19/10 12:07	05/19/10 17:20
Date Sampled 05/18/10 11:37				
Client ID: **MW-17-1**				
Lab ID : BMI10051901-05A Perchlorate	ND	1.00 µg/L	05/19/10 12:07	05/24/10 17:51
Date Sampled 05/18/10 12:20				
Client ID: **DUPE-6-2Q10**				
Lab ID : BMI10051901-06A Perchlorate	ND	1.00 µg/L	05/19/10 12:07	05/24/10 18:09
Date Sampled 05/18/10 00:00				
Client ID: **EB-13-05/18/10**				
Lab ID : BMI10051901-07A Perchlorate	ND	1.00 µg/L	05/19/10 12:07	05/24/10 19:05
Date Sampled 05/18/10 12:04				

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.

6/2/10
Report Date

Alpha Analytical, Inc.

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/19/10

Job: G005862/JPL Groundwater Monitoring

Alkalinity
SM2320B

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-17-5**					
Lab ID : BMI10051901-01A	Alkalinity, Bicarbonate (As CaCO3)	130	10 mg/L	05/21/10 11:31	05/21/10 11:31
Date Sampled 05/18/10 09:06	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 11:31	05/21/10 11:31
	Alkalinity, Total (As CaCO3 at pH 4.5)	130	10 mg/L	05/21/10 11:31	05/21/10 11:31
Client ID: **MW-17-4**					
Lab ID : BMI10051901-02A	Alkalinity, Bicarbonate (As CaCO3)	140	10 mg/L	05/21/10 11:34	05/21/10 11:34
Date Sampled 05/18/10 09:43	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 11:34	05/21/10 11:34
	Alkalinity, Total (As CaCO3 at pH 4.5)	140	10 mg/L	05/21/10 11:34	05/21/10 11:34
Client ID: **MW-17-3**					
Lab ID : BMI10051901-03A	Alkalinity, Bicarbonate (As CaCO3)	180	10 mg/L	05/21/10 11:38	05/21/10 11:38
Date Sampled 05/18/10 11:00	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 11:38	05/21/10 11:38
	Alkalinity, Total (As CaCO3 at pH 4.5)	180	10 mg/L	05/21/10 11:38	05/21/10 11:38
Client ID: **MW-17-2**					
Lab ID : BMI10051901-04A	Alkalinity, Bicarbonate (As CaCO3)	200	10 mg/L	05/21/10 11:42	05/21/10 11:42
Date Sampled 05/18/10 11:37	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 11:42	05/21/10 11:42
	Alkalinity, Total (As CaCO3 at pH 4.5)	200	10 mg/L	05/21/10 11:42	05/21/10 11:42
Client ID: **MW-17-1**					
Lab ID : BMI10051901-05A	Alkalinity, Bicarbonate (As CaCO3)	190	10 mg/L	05/21/10 11:55	05/21/10 11:55
Date Sampled 05/18/10 12:20	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 11:55	05/21/10 11:55
	Alkalinity, Total (As CaCO3 at pH 4.5)	190	10 mg/L	05/21/10 11:55	05/21/10 11:55
Client ID: **DUPE-6-2Q10**					
Lab ID : BMI10051901-06A	Alkalinity, Bicarbonate (As CaCO3)	180	10 mg/L	05/21/10 12:03	05/21/10 12:03
Date Sampled 05/18/10 00:00	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 12:03	05/21/10 12:03
	Alkalinity, Total (As CaCO3 at pH 4.5)	180	10 mg/L	05/21/10 12:03	05/21/10 12:03
Client ID: **EB-13-05/18/10**					
Lab ID : BMI10051901-07A	Alkalinity, Bicarbonate (As CaCO3)	ND	10 mg/L	05/21/10 12:14	05/21/10 12:14
Date Sampled 05/18/10 12:04	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 12:14	05/21/10 12:14
	Alkalinity, Total (As CaCO3 at pH 4.5)	ND	10 mg/L	05/21/10 12:14	05/21/10 12:14

Alpha Analytical, Inc.

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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.

6/2/10

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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/19/10

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS
EPA Method 200.8

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-17-5**					
Lab ID : BMI10051901-01A	Sodium (Na)	57	0.50 mg/L	05/19/10 10:00	05/20/10 18:11
Date Sampled 05/18/10 09:06	Magnesium (Mg)	2.8	0.50 mg/L	05/19/10 10:00	05/20/10 18:11
	Potassium (K)	1.2	0.50 mg/L	05/19/10 10:00	05/20/10 18:11
	Calcium (Ca)	14	0.50 mg/L	05/19/10 10:00	05/20/10 18:11
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:11
	Iron (Fe)	0.58	0.10 mg/L	05/19/10 10:00	05/20/10 18:11
	Arsenic (As)	0.0072	0.0020 mg/L	05/19/10 10:00	05/20/10 18:11
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:11
Client ID: **MW-17-4**					
Lab ID : BMI10051901-02A	Sodium (Na)	44	0.50 mg/L	05/19/10 10:00	05/20/10 18:17
Date Sampled 05/18/10 09:43	Magnesium (Mg)	4.8	0.50 mg/L	05/19/10 10:00	05/20/10 18:17
	Potassium (K)	1.6	0.50 mg/L	05/19/10 10:00	05/20/10 18:17
	Calcium (Ca)	19	0.50 mg/L	05/19/10 10:00	05/20/10 18:17
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:17
	Iron (Fe)	0.12	0.10 mg/L	05/19/10 10:00	05/20/10 18:17
	Arsenic (As)	0.0030	0.0020 mg/L	05/19/10 10:00	05/20/10 18:17
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:17
Client ID: **MW-17-3**					
Lab ID : BMI10051901-03A	Sodium (Na)	27	0.50 mg/L	05/19/10 10:00	05/20/10 18:23
Date Sampled 05/18/10 11:00	Magnesium (Mg)	30	0.50 mg/L	05/19/10 10:00	05/20/10 18:23
	Potassium (K)	2.9	0.50 mg/L	05/19/10 10:00	05/20/10 18:23
	Calcium (Ca)	71	0.50 mg/L	05/19/10 10:00	05/20/10 18:23
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:23
	Iron (Fe)	1.3	0.10 mg/L	05/19/10 10:00	05/20/10 18:23
	Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 18:23
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:23
Client ID: **MW-17-2**					
Lab ID : BMI10051901-04A	Sodium (Na)	28	0.50 mg/L	05/19/10 10:00	05/20/10 18:28
Date Sampled 05/18/10 11:37	Magnesium (Mg)	37	0.50 mg/L	05/19/10 10:00	05/20/10 18:28
	Potassium (K)	4.3	0.50 mg/L	05/19/10 10:00	05/20/10 18:28
	Calcium (Ca)	99	0.50 mg/L	05/19/10 10:00	05/20/10 18:28
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:28
	Iron (Fe)	0.53	0.10 mg/L	05/19/10 10:00	05/20/10 18:28
	Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 18:28
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:28

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Client ID: **MW-17-1**					
Lab ID : BMI10051901-05A	Sodium (Na)	16	0.50 mg/L	05/19/10 10:00	05/20/10 18:34
Date Sampled 05/18/10 12:20	Magnesium (Mg)	15	0.50 mg/L	05/19/10 10:00	05/20/10 18:34
	Potassium (K)	2.3	0.50 mg/L	05/19/10 10:00	05/20/10 18:34
	Calcium (Ca)	48	0.50 mg/L	05/19/10 10:00	05/20/10 18:34
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:34
	Iron (Fe)	0.32	0.10 mg/L	05/19/10 10:00	05/20/10 18:34
	Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 18:34
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:34
Client ID: **DUPE-6-2Q10**					
Lab ID : BMI10051901-06A	Sodium (Na)	16	0.50 mg/L	05/19/10 10:00	05/20/10 18:39
Date Sampled 05/18/10 00:00	Magnesium (Mg)	15	0.50 mg/L	05/19/10 10:00	05/20/10 18:39
	Potassium (K)	2.3	0.50 mg/L	05/19/10 10:00	05/20/10 18:39
	Calcium (Ca)	49	0.50 mg/L	05/19/10 10:00	05/20/10 18:39
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:39
	Iron (Fe)	0.31	0.10 mg/L	05/19/10 10:00	05/20/10 18:39
	Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 18:39
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:39
Client ID: **EB-13-05/18/10**					
Lab ID : BMI10051901-07A	Sodium (Na)	ND	0.50 mg/L	05/19/10 10:00	05/20/10 18:45
Date Sampled 05/18/10 12:04	Magnesium (Mg)	ND	0.50 mg/L	05/19/10 10:00	05/20/10 18:45
	Potassium (K)	ND	0.50 mg/L	05/19/10 10:00	05/20/10 18:45
	Calcium (Ca)	0.64	0.50 mg/L	05/19/10 10:00	05/20/10 18:45
	Chromium (Cr)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:45
	Iron (Fe)	ND	0.10 mg/L	05/19/10 10:00	05/20/10 18:45
	Arsenic (As)	ND	0.0020 mg/L	05/19/10 10:00	05/20/10 18:45
	Lead (Pb)	ND	0.0050 mg/L	05/19/10 10:00	05/20/10 18:45

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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6/2/10

Report Date

Alpha Analytical, Inc.

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/19/10

Job: G005862/JPL Groundwater Monitoring

pH (Range 1.7 to 12.4)
EPA Method 150.2 / SM4500HB / SW9040C

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-17-5**					
Lab ID : BMI10051901-01A	pH	8.5	1.7 pH Units	05/19/10 14:58	05/19/10 14:58
Date Sampled 05/18/10 09:06	pH - Temperature	18	1.0 °C	05/19/10 14:58	05/19/10 14:58
Client ID: **MW-17-4**					
Lab ID : BMI10051901-02A	pH	8.2	1.7 pH Units	05/19/10 15:06	05/19/10 15:06
Date Sampled 05/18/10 09:43	pH - Temperature	20	1.0 °C	05/19/10 15:06	05/19/10 15:06
Client ID: **MW-17-3**					
Lab ID : BMI10051901-03A	pH	7.9	1.7 pH Units	05/19/10 15:09	05/19/10 15:09
Date Sampled 05/18/10 11:00	pH - Temperature	20	1.0 °C	05/19/10 15:09	05/19/10 15:09
Client ID: **MW-17-2**					
Lab ID : BMI10051901-04A	pH	7.6	1.7 pH Units	05/19/10 15:11	05/19/10 15:11
Date Sampled 05/18/10 11:37	pH - Temperature	20	1.0 °C	05/19/10 15:11	05/19/10 15:11
Client ID: **MW-17-1**					
Lab ID : BMI10051901-05A	pH	7.5	1.7 pH Units	05/19/10 15:14	05/19/10 15:14
Date Sampled 05/18/10 12:20	pH - Temperature	21	1.0 °C	05/19/10 15:14	05/19/10 15:14
Client ID: **DUPE-6-2Q10**					
Lab ID : BMI10051901-06A	pH	7.4	1.7 pH Units	05/19/10 15:17	05/19/10 15:17
Date Sampled 05/18/10 00:00	pH - Temperature	20	1.0 °C	05/19/10 15:17	05/19/10 15:17
Client ID: **EB-13-05/18/10**					
Lab ID : BMI10051901-07A	pH	6.1	1.7 pH Units	05/19/10 15:19	05/19/10 15:19
Date Sampled 05/18/10 12:04	pH - Temperature	19	1.0 °C	05/19/10 15:19	05/19/10 15:19

The EPA has established an analytical holding time of 15 minutes for this method as documented in the Methods Update Rule, Federal Register, Vol 72, No 47, March 2007. This holding time will always be exceeded, unless samples are analyzed in the field.
The laboratory performed this analysis in the shortest practical holding time after sample receipt.

Roger Scholl Randy Gardner Walter Hinchman

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6/2/10
Report Date

Alpha Analytical, Inc.

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

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/19/10

Job: G005862/JPL Groundwater Monitoring

Total Dissolved Solids (TDS)
SM2540C

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-17-5**				
Lab ID : BMI10051901-01A Solids, Total Dissolved (TDS)	190	10 mg/L	05/25/10	05/25/10
Date Sampled 05/18/10 09:06				
Client ID: **MW-17-4**				
Lab ID : BMI10051901-02A Solids, Total Dissolved (TDS)	150	10 mg/L	05/25/10	05/25/10
Date Sampled 05/18/10 09:43				
Client ID: **MW-17-3**				
Lab ID : BMI10051901-03A Solids, Total Dissolved (TDS)	390	10 mg/L	05/25/10	05/25/10
Date Sampled 05/18/10 11:00				
Client ID: **MW-17-2**				
Lab ID : BMI10051901-04A Solids, Total Dissolved (TDS)	530	10 mg/L	05/25/10	05/25/10
Date Sampled 05/18/10 11:37				
Client ID: **MW-17-1**				
Lab ID : BMI10051901-05A Solids, Total Dissolved (TDS)	260	10 mg/L	05/25/10	05/25/10
Date Sampled 05/18/10 12:20				
Client ID: **DUPE-6-2Q10**				
Lab ID : BMI10051901-06A Solids, Total Dissolved (TDS)	270	10 mg/L	05/25/10	05/25/10
Date Sampled 05/18/10 00:00				
Client ID: **EB-13-05/18/10**				
Lab ID : BMI10051901-07A Solids, Total Dissolved (TDS)	ND	10 mg/L	05/25/10	05/25/10
Date Sampled 05/18/10 12:04				

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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ANALYTICAL REPORT

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

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

Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID : **MW-17-5**					
Lab ID : BMI10051901-01A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 15:42	05/20/10 15:42
Date Received : 05/19/10					
Date Sampled : 05/18/10 09:06					
Client ID : **MW-17-4**					
Lab ID : BMI10051901-02A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 16:04	05/20/10 16:04
Date Received : 05/19/10					
Date Sampled : 05/18/10 09:43					
Client ID : **MW-17-3**					
Lab ID : BMI10051901-03A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 16:26	05/20/10 16:26
Date Received : 05/19/10					
Date Sampled : 05/18/10 11:00					
Client ID : **MW-17-2**					
Lab ID : BMI10051901-04A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 16:48	05/20/10 16:48
Date Received : 05/19/10					
Date Sampled : 05/18/10 11:37					
Client ID : **MW-17-1**					
Lab ID : BMI10051901-05A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 17:11	05/20/10 17:11
Date Received : 05/19/10					
Date Sampled : 05/18/10 12:20					
Client ID : **DUPE-6-2Q10**					
Lab ID : BMI10051901-06A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 17:33	05/20/10 17:33
Date Received : 05/19/10					
Date Sampled : 05/18/10 00:00					
Client ID : **EB-13-05/18/10**					
Lab ID : BMI10051901-07A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 13:27	05/20/10 13:27
Date Received : 05/19/10					
Date Sampled : 05/18/10 12:04					
Client ID : **TB-13-05/18/10**					
Lab ID : BMI10051901-08A	* * * None Found * * *	ND	2.0 µg/L	05/20/10 13:05	05/20/10 13:05
Date Received : 05/19/10					
Date Sampled : 05/18/10 07:00					

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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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ANALYTICAL REPORT

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

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

Alpha Analytical Number: BMI10051901-01A
Client I.D. Number: MW-17-5

Sampled: 05/18/10 09:06
Received: 05/19/10
Extracted: 05/20/10 15:42
Analyzed: 05/20/10 15:42

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	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	99		(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	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 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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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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10051901-02A
Client I.D. Number: MW-17-4

Sampled: 05/18/10 09:43
Received: 05/19/10
Extracted: 05/20/10 16:04
Analyzed: 05/20/10 16:04

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	0.59	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND		1.0	µg/L
26	Bromodichloromethane	ND	0.50	µg/L	61	Naphthalene	ND	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	100		(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	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 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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6/2/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10051901-03A
Client I.D. Number: MW-17-3

Sampled: 05/18/10 11:00
Received: 05/19/10
Extracted: 05/20/10 16:26
Analyzed: 05/20/10 16:26

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	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	99		(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	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 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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6/2/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10051901-04A
Client I.D. Number: MW-17-2

Sampled: 05/18/10 11:37
Received: 05/19/10
Extracted: 05/20/10 16:48
Analyzed: 05/20/10 16:48

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	0.57	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	98		(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	0.50	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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6/2/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10051901-05A
Client I.D. Number: MW-17-1

Sampled: 05/18/10 12:20
Received: 05/19/10
Extracted: 05/20/10 17:11
Analyzed: 05/20/10 17:11

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	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	97		(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	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 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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6/2/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10051901-06A
Client I.D. Number: DUPE-6-2Q10

Sampled: 05/18/10 00:00
Received: 05/19/10
Extracted: 05/20/10 17:33
Analyzed: 05/20/10 17:33

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	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	99		(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	107		(70-130)	%REC
31	Toluene	ND	0.50	µg/L	66	Surr: 4-Bromofluorobenzene	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						

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

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.

6/2/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10051901-07A
Client I.D. Number: EB-13-05/18/10

Sampled: 05/18/10 12:04
Received: 05/19/10
Extracted: 05/20/10 13:27
Analyzed: 05/20/10 13:27

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	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	100		(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	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					

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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6/2/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10051901-08A
Client I.D. Number: TB-13-05/18/10

Sampled: 05/18/10 07:00
Received: 05/19/10
Extracted: 05/20/10 13:05
Analyzed: 05/20/10 13:05

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	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	100		(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	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						

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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6/2/10
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: BMI10051901 **Job:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
10051901-01A	MW-17-5	Aqueous	2
10051901-02A	MW-17-4	Aqueous	2
10051901-03A	MW-17-3	Aqueous	2
10051901-04A	MW-17-2	Aqueous	2
10051901-05A	MW-17-1	Aqueous	2
10051901-06A	DUPE-6-2Q10	Aqueous	2
10051901-07A	EB-13-05/18/10	Aqueous	2
10051901-08A	TB-13-05/18/10	Aqueous	2

6/2/10

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: *26-May-10*

QC Summary Report

Work Order: 10051901

Method Blank

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

File ID: **21** Batch ID: **24291** Analysis Date: **05/19/2010 12:13**

Sample ID: **MB-24291** Units : **mg/L** Run ID: **IC_1_100519A** Prep Date: **05/19/2010 10:45**

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: **22** Batch ID: **24291** Analysis Date: **05/19/2010 12:36**

Sample ID: **LFB-24291** Units : **mg/L** Run ID: **IC_1_100519A** Prep Date: **05/19/2010 10:45**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	50.7	0.5	50		101	90	110			
Nitrite (NO2) - N	4.69	0.25	5		94	90	110			
Nitrate (NO3) - N	5.09	0.25	5		102	90	110			
Phosphate, ortho - P	4.32	0.5	5		86	90	110			L50
Sulfate (SO4)	101	0.5	100		101	90	110			

Sample Matrix Spike

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

File ID: **25** Batch ID: **24291** Analysis Date: **05/19/2010 13:31**

Sample ID: **10051901-01ALFM** Units : **mg/L** Run ID: **IC_1_100519A** Prep Date: **05/19/2010 10:45**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	114	0.5	100	9.186	104	80	120			
Nitrite (NO2) - N	8.91	0.25	10	0	89	80	120			
Nitrate (NO3) - N	10.1	0.25	10	0	101	80	120			
Phosphate, ortho - P	8.61	0.5	10	0	86	80	120			
Sulfate (SO4)	208	0.5	200	18.68	95	80	120			

Sample Matrix Spike Duplicate

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

File ID: **26** Batch ID: **24291** Analysis Date: **05/19/2010 13:50**

Sample ID: **10051901-01ALFMD** Units : **mg/L** Run ID: **IC_1_100519A** Prep Date: **05/19/2010 10:45**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	115	0.5	100	9.186	105	80	120	113.5	1.0(15)	
Nitrite (NO2) - N	9.24	0.25	10	0	92	80	120	8.913	3.6(15)	
Nitrate (NO3) - N	10.4	0.25	10	0	104	80	120	10.09	3.2(15)	
Phosphate, ortho - P	8.95	0.5	10	0	90	80	120	8.605	3.9(15)	
Sulfate (SO4)	212	0.5	200	18.68	97	80	120	208.2	1.7(15)	

Comments:

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

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

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

Alpha Analytical, Inc.

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

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

Date: *26-May-10*

QC Summary Report

Work Order: 10051901

Method Blank

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

File ID: **14** Batch ID: **24294** Analysis Date: **05/19/2010 13:03**

Sample ID: **MB-24294** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

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: **24294** Analysis Date: **05/19/2010 13:21**

Sample ID: **LFB-24294** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	26	2	25		104	85	115			

Sample Matrix Spike

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

File ID: **18** Batch ID: **24294** Analysis Date: **05/19/2010 14:16**

Sample ID: **10051821-01ALFM** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	28.5	2	25	2.075	106	80	120			

Sample Matrix Spike Duplicate

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

File ID: **19** Batch ID: **24294** Analysis Date: **05/19/2010 14:35**

Sample ID: **10051821-01ALFMD** Units : **µg/L** Run ID: **IC_3_100519A** Prep Date: **05/19/2010 12:07**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	28.2	2	25	2.075	104	80	120	28.45	1.0(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: *26-May-10*

QC Summary Report

Work Order: 10051901

Laboratory Control Spike Type **LCS** Test Code: **SM2320B**

File ID: Batch ID: **W0521AL** Analysis Date: **05/21/2010 10:52**

Sample ID: **LCS-W0521AL** Units : **mg/L** Run ID: **WETLAB_100521B** Prep Date: **05/21/2010 10:52**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Alkalinity, Bicarbonate (As CaCO3)	236.4	10	250		95	80	120			
Alkalinity, Carbonate (As CaCO3)	236.4	10	250		95	80	120			
Alkalinity, Total (As CaCO3 at pH 4.5)	236	10	250		95	80	120			

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: *02-Jun-10*

QC Summary Report

Work Order: 10051901

Method Blank

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

File ID: **051910.B\87B.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:19**

Sample ID: **MB-24287** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	ND	0.5								
Magnesium (Mg)	ND	0.5								
Potassium (K)	ND	0.5								
Calcium (Ca)	ND	0.5								
Chromium (Cr)	ND	0.005								
Iron (Fe)	ND	0.1								
Arsenic (As)	ND	0.002								
Lead (Pb)	ND	0.005								

Laboratory Control Spike

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

File ID: **051910.B\871.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:25**

Sample ID: **LCS-24287** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	5.04	0.5	5		101	85	115			
Magnesium (Mg)	5.3	0.5	5		106	85	115			
Potassium (K)	4.67	0.5	5		93	85	115			
Calcium (Ca)	4.75	0.5	5		95	85	115			
Chromium (Cr)	0.0484	0.005	0.05		97	85	115			
Iron (Fe)	4.67	0.2	5		93	85	115			
Arsenic (As)	0.0475	0.002	0.05		95	85	115			
Lead (Pb)	0.0522	0.005	0.05		104	85	115			

Sample Matrix Spike

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

File ID: **051910.B\87MS.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:48**

Sample ID: **10051821-01AMS** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	51.4	0.5	5	46.91	91	70	130			
Magnesium (Mg)	8.56	0.5	5	4.306	85	70	130			
Potassium (K)	5.09	0.5	5	1.27	76	70	130			
Calcium (Ca)	15.3	0.5	5	11.33	80	70	130			
Chromium (Cr)	0.044	0.005	0.05	0	88	70	130			
Iron (Fe)	4.14	0.1	5	0.2132	78	70	130			
Arsenic (As)	0.0443	0.002	0.05	0	89	70	130			
Lead (Pb)	0.0468	0.005	0.05	0	94	70	130			

Sample Matrix Spike Duplicate

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

File ID: **051910.B\87MSD.D** Batch ID: **24287K** Analysis Date: **05/20/2010 16:53**

Sample ID: **10051821-01AMSD** Units : **mg/L** Run ID: **ICP/MS_100520D** Prep Date: **05/19/2010 10:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	48	0.5	5	46.91	22	70	130	51.44	6.9(20)	M3
Magnesium (Mg)	7.4	0.5	5	4.306	62	70	130	8.555	14.5(20)	M2
Potassium (K)	4.17	0.5	5	1.27	58	70	130	5.088	19.8(20)	M2
Calcium (Ca)	13.9	0.5	5	11.33	50	70	130	15.34	10.2(20)	M2
Chromium (Cr)	0.0352	0.005	0.05	0	70	70	130	0.04401	22.3(20)	R5
Iron (Fe)	3.24	0.1	5	0.2132	61	70	130	4.136	24.2(20)	M2 R58
Arsenic (As)	0.0387	0.002	0.05	0	77	70	130	0.04431	13.5(20)	
Lead (Pb)	0.0376	0.005	0.05	0	75	70	130	0.04679	21.8(20)	R5

Alpha Analytical, Inc.

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

Date: *02-Jun-10*

QC Summary Report

Work Order: 10051901

Comments:

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

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

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.

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

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

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Date: *28-May-10*

QC Summary Report

Work Order: 10051901

Laboratory Control Spike Type **LCS** Test Code: **EPA Method 150.2 / SM4500HB / SW9040C**

File ID: Batch ID: **W0519PH** Analysis Date: **05/19/2010 14:54**

Sample ID: **LCS-W0519PH** Units : **pH Units** Run ID: **WETLAB_100519A** Prep Date: **05/19/2010 14:54**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
pH	5	1.7	5		100	90	110			

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: *28-May-10*

QC Summary Report

Work Order: 10051901

Method Blank

Type **MBLK** Test Code: **SM2540C**

File ID: Batch ID: **W0520DS** Analysis Date: **05/25/2010 00:00**

Sample ID: **MBLK-W0520DS** Units : **mg/L** Run ID: **WETLAB_100520C** Prep Date: **05/25/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	ND	10								

Laboratory Control Spike

Type **LCS** Test Code: **SM2540C**

File ID: Batch ID: **W0520DS** Analysis Date: **05/25/2010 00:00**

Sample ID: **LCS-W0520DS** Units : **mg/L** Run ID: **WETLAB_100520C** Prep Date: **05/25/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	94	10	100		94	80	120			

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-Jun-10*

QC Summary Report

Work Order: 10051901

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

File ID: **10052007.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 10:29**

Sample ID: **MBLK MS15W0520M** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 10:29**

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	9.61		10		96	70	130			
Surr: Toluene-d8	10.7		10		107	70	130			

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Date: 01-Jun-10

QC Summary Report

Work Order: 10051901

Surr: 4-Bromofluorobenzene	10.5			10	105	70	130			

Laboratory Control Spike Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **10052003.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 08:52**

Sample ID: **LCS MS15W0520M** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 08:52**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	10.3	1	10		103	70	130			
Chloromethane	11.1	2	10		111	70	130			
Vinyl chloride	10.6	1	10		106	70	130			
Chloroethane	8.73	1	10		87	70	130			
Bromomethane	11.6	2	10		116	70	130			
Trichlorofluoromethane	8.36	1	10		84	70	130			
1,1-Dichloroethene	11.2	1	10		112	70	130			
Dichloromethane	9.58	2	10		96	70	130			
trans-1,2-Dichloroethene	11.1	1	10		111	70	130			
Methyl tert-butyl ether (MTBE)	8.5	0.5	10		85	70	130			
1,1-Dichloroethane	11.1	1	10		111	70	130			
cis-1,2-Dichloroethene	10.5	1	10		105	70	130			
Bromochloromethane	9.26	1	10		93	70	130			
Chloroform	10.4	1	10		104	70	130			
2,2-Dichloropropane	10.2	1	10		102	70	130			
1,2-Dichloroethane	9.3	1	10		93	70	130			
1,1,1-Trichloroethane	11.3	1	10		113	70	130			
1,1-Dichloropropene	11.6	1	10		116	70	130			
Carbon tetrachloride	10.6	1	10		106	70	130			
Benzene	10.6	0.5	10		106	70	130			
Dibromomethane	8.77	1	10		88	70	130			
1,2-Dichloropropane	9.66	1	10		97	70	130			
Trichloroethene	10.1	1	10		101	70	130			
Bromodichloromethane	9.46	1	10		95	70	130			
cis-1,3-Dichloropropene	9.63	1	10		96	70	130			
trans-1,3-Dichloropropene	9.01	1	10		90	70	130			
1,1,2-Trichloroethane	8.72	1	10		87	70	130			
Toluene	10.1	0.5	10		101	70	130			
1,3-Dichloropropane	8.71	1	10		87	70	130			
Dibromochloromethane	8.24	1	10		82	70	130			
1,2-Dibromoethane (EDB)	17.2	2	20		86	70	130			
Tetrachloroethene	10.1	1	10		101	70	130			
1,1,1,2-Tetrachloroethane	9.49	1	10		95	70	130			
Chlorobenzene	9.48	1	10		95	70	130			
Ethylbenzene	9.98	0.5	10		99.8	70	130			
m,p-Xylene	9.97	0.5	10		99.7	70	130			
Bromoform	7.5	1	10		75	70	130			
Styrene	9.99	1	10		99.9	70	130			
o-Xylene	9.65	0.5	10		97	70	130			
1,1,2,2-Tetrachloroethane	7.66	1	10		77	70	130			
1,2,3-Trichloropropane	14.9	2	20		75	70	130			
Isopropylbenzene	12.3	1	10		123	70	130			
Bromobenzene	10.7	1	10		107	70	130			
n-Propylbenzene	12.4	1	10		124	70	130			
4-Chlorotoluene	11.8	1	10		118	70	130			
2-Chlorotoluene	11.9	1	10		119	70	130			
1,3,5-Trimethylbenzene	12.5	1	10		125	70	130			
tert-Butylbenzene	11.7	1	10		117	70	130			
1,2,4-Trimethylbenzene	12.2	1	10		122	70	130			
sec-Butylbenzene	11.6	1	10		116	70	130			
1,3-Dichlorobenzene	10.8	1	10		108	70	130			
1,4-Dichlorobenzene	10.1	1	10		101	70	130			
4-Isopropyltoluene	12.2	1	10		122	70	130			
1,2-Dichlorobenzene	9.73	1	10		97	70	130			
n-Butylbenzene	12.6	1	10		126	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	40.6	3	50		81	70	130			
1,2,4-Trichlorobenzene	9.46	2	10		95	70	130			
Naphthalene	5.84	2	10		58	70(70)	130			L50
Hexachlorobutadiene	20.1	2	20		101	70	130			
1,2,3-Trichlorobenzene	7.67	2	10		77	70	130			
Surr: 1,2-Dichloroethane-d4	8.77		10		88	70	130			
Surr: Toluene-d8	10.1		10		101	70	130			
Surr: 4-Bromofluorobenzene	11.4		10		114	70	130			

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10051901

Sample Matrix Spike Type **MS** Test Code: **EPA Method SW8260B**

File ID: **10052009.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 11:14**

Sample ID: **10051821-01AMS** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 11:14**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	41	2.5	50	0	82	13	167			
Chloromethane	48.4	10	50	0	97	28	145			
Vinyl chloride	46.4	2.5	50	0	93	43	134			
Chloroethane	31.8	2.5	50	0	64	39	154			
Bromomethane	45.1	10	50	0	90	19	176			
Trichlorofluoromethane	34.1	2.5	50	0	68	34	160			
1,1-Dichloroethene	50	2.5	50	0	100	60	130			
Dichloromethane	45.4	10	50	0	91	68	130			
trans-1,2-Dichloroethene	50.7	2.5	50	0	101	63	130			
Methyl tert-butyl ether (MTBE)	50.2	1.3	50	0	100	56	141			
1,1-Dichloroethane	51.1	2.5	50	0	102	61	130			
cis-1,2-Dichloroethene	50.1	2.5	50	0	100	70	130			
Bromochloromethane	46.1	2.5	50	0	92	70	130			
Chloroform	48.8	2.5	50	0	98	67	130			
2,2-Dichloropropane	35.8	2.5	50	0	72	30	152			
1,2-Dichloroethane	49.5	2.5	50	0	99	60	135			
1,1,1-Trichloroethane	49.8	2.5	50	0	99.6	59	137			
1,1-Dichloropropene	52.2	2.5	50	0	104	63	130			
Carbon tetrachloride	45.7	2.5	50	0	91	50	147			
Benzene	49.3	1.3	50	0	99	67	130			
Dibromomethane	47.3	2.5	50	0	95	69	133			
1,2-Dichloropropane	47	2.5	50	0	94	69	130			
Trichloroethene	45.7	2.5	50	0	91	69	130			
Bromodichloromethane	45.4	2.5	50	0	91	66	134			
cis-1,3-Dichloropropene	46	2.5	50	0	92	63	130			
trans-1,3-Dichloropropene	44.8	2.5	50	0	90	66	131			
1,1,2-Trichloroethane	46.2	2.5	50	0	92	68	130			
Toluene	44.9	1.3	50	0	90	66	130			
1,3-Dichloropropane	45.7	2.5	50	0	91	70	130			
Dibromochloromethane	40.8	2.5	50	0	82	70	130			
1,2-Dibromoethane (EDB)	88.9	5	100	0	89	70	130			
Tetrachloroethene	43.9	2.5	50	0	88	61	134			
1,1,1,2-Tetrachloroethane	43.8	2.5	50	0	88	70	130			
Chlorobenzene	43.7	2.5	50	0	87	70	130			
Ethylbenzene	44.3	1.3	50	0	89	68	130			
m,p-Xylene	44.2	1.3	50	0	88	64	130			
Bromoform	38	2.5	50	0	76	64	138			
Styrene	46.8	2.5	50	0	94	69	130			
o-Xylene	44	1.3	50	0	88	70	130			
1,1,2,2-Tetrachloroethane	43	2.5	50	0	86	65	131			
1,2,3-Trichloropropane	83.8	10	100	0	84	70	130			
Isopropylbenzene	50.4	2.5	50	0	101	64	138			
Bromobenzene	47.4	2.5	50	0	95	70	130			
n-Propylbenzene	51.2	2.5	50	0	102	66	132			
4-Chlorotoluene	49.9	2.5	50	0	99.8	70	130			
2-Chlorotoluene	50.2	2.5	50	0	100	70	130			
1,3,5-Trimethylbenzene	52	2.5	50	0	104	66	136			
tert-Butylbenzene	49	2.5	50	0	98	65	137			
1,2,4-Trimethylbenzene	51.6	2.5	50	0	103	65	137			
sec-Butylbenzene	48.6	2.5	50	0	97	66	134			
1,3-Dichlorobenzene	47.9	2.5	50	0	96	70	130			
1,4-Dichlorobenzene	45.6	2.5	50	0	91	70	130			
4-Isopropyltoluene	50.4	2.5	50	0	101	66	137			
1,2-Dichlorobenzene	44.6	2.5	50	0	89	70	130			
n-Butylbenzene	54.1	2.5	50	0	108	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	215	15	250	0	86	67	130			
1,2,4-Trichlorobenzene	44.9	10	50	0	90	61	137			
Naphthalene	38.2	10	50	0	76	40	167			
Hexachlorobutadiene	89.4	10	100	0	89	61	130			
1,2,3-Trichlorobenzene	40.8	10	50	0	82	51	144			
Surr: 1,2-Dichloroethane-d4	47.8		50		96	70	130			
Surr: Toluene-d8	48.9		50		98	70	130			
Surr: 4-Bromofluorobenzene	54.2		50		108	70	130			

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10051901

Sample Matrix Spike Duplicate Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **10052010.D** Batch ID: **MS15W0520M** Analysis Date: **05/20/2010 11:36**

Sample ID: **10051821-01AMSD** Units : **µg/L** Run ID: **MSD_15_100520B** Prep Date: **05/20/2010 11:36**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	36.9	2.5	50	0	74	13	167	40.97	10.5(20)	
Chloromethane	45.7	10	50	0	91	28	145	48.4	5.7(20)	
Vinyl chloride	42.4	2.5	50	0	85	43	134	46.39	9.1(20)	
Chloroethane	34.2	2.5	50	0	68	39	154	31.83	7.2(20)	
Bromomethane	48.4	10	50	0	97	19	176	45.11	6.9(20)	
Trichlorofluoromethane	32.8	2.5	50	0	66	34	160	34.14	4.0(20)	
1,1-Dichloroethene	46.2	2.5	50	0	92	60	130	50	8.0(20)	
Dichloromethane	45.8	10	50	0	92	68	130	45.4	0.8(20)	
trans-1,2-Dichloroethene	47	2.5	50	0	94	63	130	50.65	7.4(20)	
Methyl tert-butyl ether (MTBE)	50.8	1.3	50	0	102	56	141	50.21	1.2(20)	
1,1-Dichloroethane	48.9	2.5	50	0	98	61	130	51.11	4.3(20)	
cis-1,2-Dichloroethene	48.8	2.5	50	0	98	70	130	50.1	2.7(20)	
Bromochloromethane	48.1	2.5	50	0	96	70	130	46.14	4.2(20)	
Chloroform	47.7	2.5	50	0	95	67	130	48.79	2.3(20)	
2,2-Dichloropropane	36.2	2.5	50	0	72	30	152	35.84	1.1(20)	
1,2-Dichloroethane	50	2.5	50	0	100	60	135	49.49	1.0(20)	
1,1,1-Trichloroethane	47.8	2.5	50	0	96	59	137	49.82	4.2(20)	
1,1-Dichloropropene	49	2.5	50	0	98	63	130	52.19	6.4(20)	
Carbon tetrachloride	44.2	2.5	50	0	88	50	147	45.67	3.3(20)	
Benzene	47.4	1.3	50	0	95	67	130	49.34	4.1(20)	
Dibromomethane	48.5	2.5	50	0	97	69	133	47.29	2.6(20)	
1,2-Dichloropropane	46.7	2.5	50	0	93	69	130	47	0.6(20)	
Trichloroethene	42.4	2.5	50	0	85	69	130	45.68	7.5(20)	
Bromodichloromethane	47.1	2.5	50	0	94	66	134	45.38	3.7(20)	
cis-1,3-Dichloropropene	47.3	2.5	50	0	95	63	130	45.96	2.9(20)	
trans-1,3-Dichloropropene	47.1	2.5	50	0	94	66	131	44.75	5.1(20)	
1,1,2-Trichloroethane	48.1	2.5	50	0	96	68	130	46.18	4.1(20)	
Toluene	43.1	1.3	50	0	86	66	130	44.92	4.2(20)	
1,3-Dichloropropane	46.1	2.5	50	0	92	70	130	45.69	0.9(20)	
Dibromochloromethane	42.9	2.5	50	0	86	70	130	40.76	5.2(20)	
1,2-Dibromoethane (EDB)	91.5	5	100	0	91	70	130	88.86	2.9(20)	
Tetrachloroethene	40.8	2.5	50	0	82	61	134	43.87	7.4(20)	
1,1,1,2-Tetrachloroethane	44	2.5	50	0	88	70	130	43.77	0.5(20)	
Chlorobenzene	42.5	2.5	50	0	85	70	130	43.66	2.6(20)	
Ethylbenzene	42.2	1.3	50	0	84	68	130	44.34	5.0(20)	
m,p-Xylene	42.5	1.3	50	0	85	64	130	44.17	3.9(20)	
Bromoform	40.4	2.5	50	0	81	64	138	38	6.2(20)	
Styrene	46.6	2.5	50	0	93	69	130	46.76	0.4(20)	
o-Xylene	42.6	1.3	50	0	85	70	130	43.95	3.1(20)	
1,1,2,2-Tetrachloroethane	43.4	2.5	50	0	87	65	131	43.03	0.9(20)	
1,2,3-Trichloropropane	84.8	10	100	0	85	70	130	83.76	1.3(20)	
Isopropylbenzene	47.4	2.5	50	0	95	64	138	50.35	6.1(20)	
Bromobenzene	48.1	2.5	50	0	96	70	130	47.39	1.4(20)	
n-Propylbenzene	48.9	2.5	50	0	98	66	132	51.16	4.6(20)	
4-Chlorotoluene	49.3	2.5	50	0	99	70	130	49.88	1.2(20)	
2-Chlorotoluene	48.8	2.5	50	0	98	70	130	50.24	3.0(20)	
1,3,5-Trimethylbenzene	50	2.5	50	0	100	66	136	52.03	3.9(20)	
tert-Butylbenzene	46.6	2.5	50	0	93	65	137	49.03	5.1(20)	
1,2,4-Trimethylbenzene	50.6	2.5	50	0	101	65	137	51.58	1.8(20)	
sec-Butylbenzene	45.9	2.5	50	0	92	66	134	48.62	5.8(20)	
1,3-Dichlorobenzene	48.3	2.5	50	0	97	70	130	47.92	0.7(20)	
1,4-Dichlorobenzene	46.1	2.5	50	0	92	70	130	45.58	1.1(20)	
4-Isopropyltoluene	48.8	2.5	50	0	98	66	137	50.44	3.3(20)	
1,2-Dichlorobenzene	45.7	2.5	50	0	91	70	130	44.57	2.5(20)	
n-Butylbenzene	51.7	2.5	50	0	103	60	142	54.13	4.7(20)	
1,2-Dibromo-3-chloropropane (DBCP)	231	15	250	0	92	67	130	215	7.3(20)	
1,2,4-Trichlorobenzene	49.7	10	50	0	99	61	137	44.89	10.2(20)	
Naphthalene	41.7	10	50	0	83	40	167	38.19	8.7(20)	
Hexachlorobutadiene	92	10	100	0	92	61	130	89.38	2.9(20)	
1,2,3-Trichlorobenzene	46.2	10	50	0	92	51	144	40.83	12.3(20)	
Surr: 1,2-Dichloroethane-d4	47.9		50		96	70	130			
Surr: Toluene-d8	48.3		50		97	70	130			
Surr: 4-Bromofluorobenzene	53.9		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: *01-Jun-10*

QC Summary Report

Work Order: 10051901

Comments:

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

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

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

AMENDED

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 : BMIS10051901

Report Due By : 5:00 PM On : 03-Jun-2010

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org

EDD Required : **No**

Sampled by : Chase Brogdon

PO : 218013

Client's COC # : 28935 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	19-May-2010	01-Jun-2010

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10051901-01A	MW-17-5	AQ	05/18/10 09:06	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI10051901-02A	MW-17-4	AQ	05/18/10 09:43	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-03A	MW-17-3	AQ	05/18/10 11:00	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-04A	MW-17-2	AQ	05/18/10 11:37	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-05A	MW-17-1	AQ	05/18/10 12:20	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI10051901-06A	DUPE-6-2Q10	AQ	05/18/10 00:00	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI10051901-07A	EB-13-05/18/10	AQ	05/18/10 12:04	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-08A	TB-13-05/18/10	AQ	05/18/10 07:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/10/10

Comments: Security seals intact. Frozen ice. Temp Blank #5596 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). Amended 6/1/10 @ 8:51: Added sample time to sample -08A, due to login error. EA :

	Signature	Print Name	Company	Date/Time
Logged in by:	Elizabeth Adcox	Elizabeth Adcox	Alpha Analytical, Inc.	6/1/10 8:52

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 :

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 : BMIS10051901

Report Due By : 5:00 PM On : 03-Jun-2010

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org

EDD Required : **Yes**

Sampled by : Chase Brogdon

PO : 218013

Client's COC # : 28935 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	19-May-2010	**19-May-2010**

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10051901-01A	MW-17-5	AQ	05/18/10 09:06	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI10051901-02A	MW-17-4	AQ	05/18/10 09:43	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-03A	MW-17-3	AQ	05/18/10 11:00	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-04A	MW-17-2	AQ	05/18/10 11:37	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-05A	MW-17-1	AQ	05/18/10 12:20	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI10051901-06A	DUPE-6-2Q10	AQ	05/18/10 00:00	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI10051901-07A	EB-13-05/18/10	AQ	05/18/10 12:04	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10051901-08A	TB-13-05/18/10	AQ	05/18/10 00:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/10/10

Comments: Security seals intact. Frozen ice. Temp Blank #5596 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). :

	Signature	Print Name	Company	Date/Time
Logged in by:	Elizabeth Adcox	Elizabeth Adcox	**Alpha Analytical, Inc.**	5.19.10 9:39

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:

Name GERALD TOMPKINS / BATTELLE
Address 505 KING 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 X NV ___ WA ___ ID ___ OR ___ OTHER ___

28935

Page # 1 of 1

Client Name	P.O. #	Job #
BATTELLE / DAVID CONNER	218013	G005862
Address: 3990 OLD TOWN AVE, C-205	EMail Address:	
City, State, Zip: SAN DIEGO CA 92110	Phone #: (619) 726-7311	Fax #:

Required QC Level? I II III IV

EDD / EDF? YES ___ NO ___

Global ID # ___

Time Sampled	Date Sampled	Matrix* See Key Below	Sampled by: CHASE BROOKS — Lab ID Number (Office Use Only)	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	VOC (5242)	TOTAL Cr, LEAD, ARSENIC (200.8)	GEN. CHEM. (N+K, Ca, Mg, Fe) (200.7)	ClO4 - (314.0)	GEN. CHEM. (300.0, 310.1, 160.1, 150.1)			REMARKS
0906	5/16/10	AQ	BMI10051901-01	MW-17-5	NORM		5	X	X	X	X	X			LEVEL IV QC
0943			-02	MW-17-4			5	X	X	X	X	X			
1100			-03	MW-17-3			5	X	X	X	X	X			
1137			-04	MW-17-2			5	X	X	X	X	X			
1220			-05	MW-17-1			5	X	X	X	X	X			LEVEL IV QC
"			-06	DUPE-6-2Q10			5	X	X	X	X	X			DUPLICATE, LEVEL IV QC
1204			-07	EB-13-05/18/10			5	X	X	X	X	X			EQUIPMENT BLANK
0700	↓	↓	-08	TB-13-05/18/10	↓		1	X	■						TRIP BLANK

ADDITIONAL INSTRUCTIONS:

	Signature	Print Name	Company	Date	Time
Relinquished by		CHASE BROOKS	INSIGHT EXECUTIVE	05/18/10	1400
Received by		Anthony Starks	Alpha Analytical	5/18/10	1400
Relinquished by		Anthony Starks	" "	5/19/10	1000
Received by	Elizabeth Adcox	Elizabeth Adcox	Alpha	5.19.10	9:39
Relinquished by					
Received by					

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis 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: *03-Jun-10*

David Conner
Battelle Memorial Institute
655 West Broadway Suite 1420
San Diego, CA 92101
(818) 393-2808

CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring
Work Order: BMI10052001 **Cooler Temp:** 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
10052001-01A	MW-25-5	Aqueous
10052001-02A	MW-25-4	Aqueous
10052001-03A	MW-25-3	Aqueous
10052001-04A	MW-25-2	Aqueous
10052001-05A	MW-25-1	Aqueous
10052001-06A	DUPE-7-2Q10	Aqueous
10052001-07A	EB-14-05/19/10	Aqueous
10052001-08A	TB-14-05/19/10	Aqueous

Manually Integrated Analytes

Alpha's Sample ID	Test Reference	Analyte
10052001-01A	EPA Method 314.0	Perchlorate

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

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

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

Roger 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.

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

ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/20/10

Job: G005862/JPL Groundwater Monitoring

Anions by IC
EPA Method 300.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-25-5**				
Lab ID : BMI10052001-01A Chloride	19	0.50 mg/L	05/20/10 10:40	05/20/10 13:06
Date Sampled 05/19/10 08:10 Nitrite (NO2) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 13:06
Nitrate (NO3) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 13:06
Phosphate, ortho - P	ND	0.50 mg/L	05/20/10 10:40	05/20/10 13:06
Sulfate (SO4)	81	0.50 mg/L	05/20/10 10:40	05/20/10 13:06
Client ID: **MW-25-4**				
Lab ID : BMI10052001-02A Chloride	40	0.50 mg/L	05/20/10 10:40	05/20/10 13:24
Date Sampled 05/19/10 08:52 Nitrite (NO2) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 13:24
Nitrate (NO3) - N	5.4	0.25 mg/L	05/20/10 10:40	05/20/10 13:24
Phosphate, ortho - P	ND	0.50 mg/L	05/20/10 10:40	05/20/10 13:24
Sulfate (SO4)	69	0.50 mg/L	05/20/10 10:40	05/20/10 13:24
Client ID: **MW-25-3**				
Lab ID : BMI10052001-03A Chloride	39	0.50 mg/L	05/20/10 10:40	05/20/10 13:43
Date Sampled 05/19/10 09:39 Nitrite (NO2) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 13:43
Nitrate (NO3) - N	12	0.25 mg/L	05/20/10 10:40	05/20/10 13:43
Phosphate, ortho - P	ND	0.50 mg/L	05/20/10 10:40	05/20/10 13:43
Sulfate (SO4)	60	0.50 mg/L	05/20/10 10:40	05/20/10 13:43
Client ID: **MW-25-2**				
Lab ID : BMI10052001-04A Chloride	43	0.50 mg/L	05/20/10 10:40	05/20/10 14:39
Date Sampled 05/19/10 10:36 Nitrite (NO2) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 14:39
Nitrate (NO3) - N	9.7	0.25 mg/L	05/20/10 10:40	05/20/10 14:39
Phosphate, ortho - P	ND	0.50 mg/L	05/20/10 10:40	05/20/10 14:39
Sulfate (SO4)	75	0.50 mg/L	05/20/10 10:40	05/20/10 14:39
Client ID: **MW-25-1**				
Lab ID : BMI10052001-05A Chloride	62	50 mg/L	05/20/10 10:40	05/20/10 14:57
Date Sampled 05/19/10 11:40 Nitrite (NO2) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 14:57
Nitrate (NO3) - N	10	0.25 mg/L	05/20/10 10:40	05/20/10 14:57
Phosphate, ortho - P	ND	0.50 mg/L	05/20/10 10:40	05/20/10 14:57
Sulfate (SO4)	130	75 mg/L	05/20/10 10:40	05/20/10 14:57
Client ID: **DUPE-7-2Q10**				
Lab ID : BMI10052001-06A Chloride	42	0.50 mg/L	05/20/10 10:40	05/20/10 15:16
Date Sampled 05/19/10 00:00 Nitrite (NO2) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 15:16
Nitrate (NO3) - N	9.6	0.25 mg/L	05/20/10 10:40	05/20/10 15:16
Phosphate, ortho - P	ND	0.50 mg/L	05/20/10 10:40	05/20/10 15:16
Sulfate (SO4)	75	0.50 mg/L	05/20/10 10:40	05/20/10 15:16

Alpha Analytical, Inc.

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

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

Client ID: **EB-14-05/19/10**

Lab ID : BMI10052001-07A

Date Sampled 05/19/10 11:20

Chloride	ND	0.50 mg/L	05/20/10 10:40	05/20/10 15:34
Nitrite (NO2) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 15:34
Nitrate (NO3) - N	ND	0.25 mg/L	05/20/10 10:40	05/20/10 15:34
Phosphate, ortho - P	ND	0.50 mg/L	05/20/10 10:40	05/20/10 15:34
Sulfate (SO4)	ND	0.50 mg/L	05/20/10 10:40	05/20/10 15:34

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.

6/3/10

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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/20/10

Job: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography
EPA Method 314.0

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-25-5**				
Lab ID : BMI10052001-01A Perchlorate	44.5	1.00 µg/L	05/24/10 11:13	05/24/10 19:23
Date Sampled 05/19/10 08:10				
Client ID: **MW-25-4**				
Lab ID : BMI10052001-02A Perchlorate	8.08	1.00 µg/L	05/24/10 11:13	05/24/10 19:41
Date Sampled 05/19/10 08:52				
Client ID: **MW-25-3**				
Lab ID : BMI10052001-03A Perchlorate	10.3	1.00 µg/L	05/24/10 11:13	05/24/10 20:00
Date Sampled 05/19/10 09:39				
Client ID: **MW-25-2**				
Lab ID : BMI10052001-04A Perchlorate	14.7	1.00 µg/L	05/24/10 11:13	05/24/10 20:55
Date Sampled 05/19/10 10:36				
Client ID: **MW-25-1**				
Lab ID : BMI10052001-05A Perchlorate	11.0	1.00 µg/L	05/24/10 11:13	05/24/10 21:13
Date Sampled 05/19/10 11:40				
Client ID: **DUPE-7-2Q10**				
Lab ID : BMI10052001-06A Perchlorate	14.4	1.00 µg/L	05/24/10 11:13	05/24/10 21:32
Date Sampled 05/19/10 00:00				
Client ID: **EB-14-05/19/10**				
Lab ID : BMI10052001-07A Perchlorate	ND	1.00 µg/L	05/24/10 11:13	05/24/10 21:50
Date Sampled 05/19/10 11:20				

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

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6/3/10
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
3990 Old Town Ave
San Diego, CA 92110

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/20/10

Job: G005862/JPL Groundwater Monitoring

Alkalinity
SM2320B

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-25-5**					
Lab ID : BMI10052001-01A	Alkalinity, Bicarbonate (As CaCO3)	56	10 mg/L	05/21/10 13:30	05/21/10 13:30
Date Sampled 05/19/10 08:10	Alkalinity, Carbonate (As CaCO3)	51	10 mg/L	05/21/10 13:30	05/21/10 13:30
	Alkalinity, Total (As CaCO3 at pH 4.5)	110	10 mg/L	05/21/10 13:30	05/21/10 13:30
Client ID: **MW-25-4**					
Lab ID : BMI10052001-02A	Alkalinity, Bicarbonate (As CaCO3)	240	10 mg/L	05/21/10 13:33	05/21/10 13:33
Date Sampled 05/19/10 08:52	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:33	05/21/10 13:33
	Alkalinity, Total (As CaCO3 at pH 4.5)	240	10 mg/L	05/21/10 13:33	05/21/10 13:33
Client ID: **MW-25-3**					
Lab ID : BMI10052001-03A	Alkalinity, Bicarbonate (As CaCO3)	200	10 mg/L	05/21/10 13:37	05/21/10 13:37
Date Sampled 05/19/10 09:39	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:37	05/21/10 13:37
	Alkalinity, Total (As CaCO3 at pH 4.5)	200	10 mg/L	05/21/10 13:37	05/21/10 13:37
Client ID: **MW-25-2**					
Lab ID : BMI10052001-04A	Alkalinity, Bicarbonate (As CaCO3)	200	10 mg/L	05/21/10 13:41	05/21/10 13:41
Date Sampled 05/19/10 10:36	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:41	05/21/10 13:41
	Alkalinity, Total (As CaCO3 at pH 4.5)	200	10 mg/L	05/21/10 13:41	05/21/10 13:41
Client ID: **MW-25-1**					
Lab ID : BMI10052001-05A	Alkalinity, Bicarbonate (As CaCO3)	160	10 mg/L	05/21/10 13:49	05/21/10 13:49
Date Sampled 05/19/10 11:40	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:49	05/21/10 13:49
	Alkalinity, Total (As CaCO3 at pH 4.5)	160	10 mg/L	05/21/10 13:49	05/21/10 13:49
Client ID: **DUPE-7-2Q10**					
Lab ID : BMI10052001-06A	Alkalinity, Bicarbonate (As CaCO3)	200	10 mg/L	05/21/10 13:55	05/21/10 13:55
Date Sampled 05/19/10 00:00	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 13:55	05/21/10 13:55
	Alkalinity, Total (As CaCO3 at pH 4.5)	200	10 mg/L	05/21/10 13:55	05/21/10 13:55
Client ID: **EB-14-05/19/10**					
Lab ID : BMI10052001-07A	Alkalinity, Bicarbonate (As CaCO3)	ND	10 mg/L	05/21/10 14:05	05/21/10 14:05
Date Sampled 05/19/10 11:20	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 14:05	05/21/10 14:05
	Alkalinity, Total (As CaCO3 at pH 4.5)	ND	10 mg/L	05/21/10 14:05	05/21/10 14:05

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ND = Not Detected

Roger Scholl Randy Gardner Walter Hinchman

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ANALYTICAL REPORT

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

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/20/10

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-25-5**				
Lab ID : BMI10052001-01A Sodium (Na)	72	0.50 mg/L	05/21/10 11:39	05/21/10 16:39
Date Sampled 05/19/10 08:10 Magnesium (Mg)	5.0	0.50 mg/L	05/21/10 11:39	05/21/10 16:39
Potassium (K)	2.0	0.50 mg/L	05/21/10 11:39	05/21/10 16:39
Calcium (Ca)	8.9	0.50 mg/L	05/21/10 11:39	05/21/10 16:39
Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:39
Iron (Fe)	0.12	0.10 mg/L	05/21/10 11:39	05/21/10 16:39
Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 16:39
Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:39
Client ID: **MW-25-4**				
Lab ID : BMI10052001-02A Sodium (Na)	47	0.50 mg/L	05/21/10 11:39	05/21/10 16:44
Date Sampled 05/19/10 08:52 Magnesium (Mg)	18	0.50 mg/L	05/21/10 11:39	05/21/10 16:44
Potassium (K)	2.2	0.50 mg/L	05/21/10 11:39	05/21/10 16:44
Calcium (Ca)	70	0.50 mg/L	05/21/10 11:39	05/21/10 16:44
Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:44
Iron (Fe)	0.31	0.10 mg/L	05/21/10 11:39	05/21/10 16:44
Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 16:44
Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:44
Client ID: **MW-25-3**				
Lab ID : BMI10052001-03A Sodium (Na)	34	0.50 mg/L	05/21/10 11:39	05/21/10 16:16
Date Sampled 05/19/10 09:39 Magnesium (Mg)	20	0.50 mg/L	05/21/10 11:39	05/21/10 16:16
Potassium (K)	2.6	0.50 mg/L	05/21/10 11:39	05/21/10 16:16
Calcium (Ca)	75	0.50 mg/L	05/21/10 11:39	05/21/10 16:16
Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:16
Iron (Fe)	0.33	0.10 mg/L	05/21/10 11:39	05/21/10 16:16
Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 16:16
Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:16
Client ID: **MW-25-2**				
Lab ID : BMI10052001-04A Sodium (Na)	29	0.50 mg/L	05/21/10 11:39	05/21/10 16:50
Date Sampled 05/19/10 10:36 Magnesium (Mg)	22	0.50 mg/L	05/21/10 11:39	05/21/10 16:50
Potassium (K)	2.3	0.50 mg/L	05/21/10 11:39	05/21/10 16:50
Calcium (Ca)	73	0.50 mg/L	05/21/10 11:39	05/21/10 16:50
Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:50
Iron (Fe)	0.38	0.10 mg/L	05/21/10 11:39	05/21/10 16:50
Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 16:50
Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:50

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Client ID: **MW-25-1**					
Lab ID : BMI10052001-05A	Sodium (Na)	31	0.50 mg/L	05/21/10 11:39	05/21/10 16:55
Date Sampled 05/19/10 11:40	Magnesium (Mg)	27	0.50 mg/L	05/21/10 11:39	05/21/10 16:55
	Potassium (K)	2.6	0.50 mg/L	05/21/10 11:39	05/21/10 16:55
	Calcium (Ca)	91	0.50 mg/L	05/21/10 11:39	05/21/10 16:55
	Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:55
	Iron (Fe)	1.0	0.10 mg/L	05/21/10 11:39	05/21/10 16:55
	Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 16:55
	Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 16:55
Client ID: **DUPE-7-2Q10**					
Lab ID : BMI10052001-06A	Sodium (Na)	29	0.50 mg/L	05/21/10 11:39	05/21/10 17:01
Date Sampled 05/19/10 00:00	Magnesium (Mg)	23	0.50 mg/L	05/21/10 11:39	05/21/10 17:01
	Potassium (K)	2.4	0.50 mg/L	05/21/10 11:39	05/21/10 17:01
	Calcium (Ca)	73	0.50 mg/L	05/21/10 11:39	05/21/10 17:01
	Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:01
	Iron (Fe)	0.37	0.10 mg/L	05/21/10 11:39	05/21/10 17:01
	Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 17:01
	Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:01
Client ID: **EB-14-05/19/10**					
Lab ID : BMI10052001-07A	Sodium (Na)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:07
Date Sampled 05/19/10 11:20	Magnesium (Mg)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:07
	Potassium (K)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:07
	Calcium (Ca)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:07
	Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:07
	Iron (Fe)	ND	0.10 mg/L	05/21/10 11:39	05/21/10 17:07
	Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 17:07
	Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:07

ND = Not Detected

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ANALYTICAL REPORT

Battelle Memorial Institute
655 West Broadway
San Diego, CA 92101

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/20/10

Job: G005862/JPL Groundwater Monitoring

pH (Range 1.7 to 12.4)
EPA Method 150.2 / SM4500HB / SW9040C

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-25-5**					
Lab ID : BMI10052001-01A	pH	9.1	1.7 pH Units	05/20/10 15:47	05/20/10 15:47
Date Sampled 05/19/10 08:10	pH - Temperature	18	1.0 °C	05/20/10 15:47	05/20/10 15:47
Client ID: **MW-25-4**					
Lab ID : BMI10052001-02A	pH	7.6	1.7 pH Units	05/20/10 15:50	05/20/10 15:50
Date Sampled 05/19/10 08:52	pH - Temperature	18	1.0 °C	05/20/10 15:50	05/20/10 15:50
Client ID: **MW-25-3**					
Lab ID : BMI10052001-03A	pH	7.6	1.7 pH Units	05/20/10 15:52	05/20/10 15:52
Date Sampled 05/19/10 09:39	pH - Temperature	18	1.0 °C	05/20/10 15:52	05/20/10 15:52
Client ID: **MW-25-2**					
Lab ID : BMI10052001-04A	pH	7.5	1.7 pH Units	05/20/10 15:55	05/20/10 15:55
Date Sampled 05/19/10 10:36	pH - Temperature	18	1.0 °C	05/20/10 15:55	05/20/10 15:55
Client ID: **MW-25-1**					
Lab ID : BMI10052001-05A	pH	7.1	1.7 pH Units	05/20/10 15:57	05/20/10 15:57
Date Sampled 05/19/10 11:40	pH - Temperature	18	1.0 °C	05/20/10 15:57	05/20/10 15:57
Client ID: **DUPE-7-2Q10**					
Lab ID : BMI10052001-06A	pH	7.6	1.7 pH Units	05/20/10 16:00	05/20/10 16:00
Date Sampled 05/19/10 00:00	pH - Temperature	18	1.0 °C	05/20/10 16:00	05/20/10 16:00
Client ID: **EB-14-05/19/10**					
Lab ID : BMI10052001-07A	pH	6.1	1.7 pH Units	05/20/10 16:03	05/20/10 16:03
Date Sampled 05/19/10 11:20	pH - Temperature	18	1.0 °C	05/20/10 16:03	05/20/10 16:03

The EPA has established an analytical holding time of 15 minutes for this method as documented in the Methods Update Rule, Federal Register, Vol 72, No 47, March 2007. This holding time will always be exceeded, unless samples are analyzed in the field.
The laboratory performed this analysis in the shortest practical holding time after sample receipt.

Roger Scholl Randy Gardner Walter Hinchman

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ANALYTICAL REPORT

Battelle Memorial Institute
655 West Broadway
San Diego, CA 92101

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/20/10

Job: G005862/JPL Groundwater Monitoring

Total Dissolved Solids (TDS)
SM2540C

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-25-5**					
Lab ID : BMI10052001-01A	Solids, Total Dissolved (TDS)	270	10 mg/L	05/25/10	05/25/10
Date Sampled 05/19/10 08:10					
Client ID: **MW-25-4**					
Lab ID : BMI10052001-02A	Solids, Total Dissolved (TDS)	400	10 mg/L	05/25/10	05/25/10
Date Sampled 05/19/10 08:52					
Client ID: **MW-25-3**					
Lab ID : BMI10052001-03A	Solids, Total Dissolved (TDS)	430	10 mg/L	05/25/10	05/25/10
Date Sampled 05/19/10 09:39					
Client ID: **MW-25-2**					
Lab ID : BMI10052001-04A	Solids, Total Dissolved (TDS)	410	10 mg/L	05/25/10	05/25/10
Date Sampled 05/19/10 10:36					
Client ID: **MW-25-1**					
Lab ID : BMI10052001-05A	Solids, Total Dissolved (TDS)	480	10 mg/L	05/25/10	05/25/10
Date Sampled 05/19/10 11:40					
Client ID: **DUPE-7-2Q10**					
Lab ID : BMI10052001-06A	Solids, Total Dissolved (TDS)	420	10 mg/L	05/25/10	05/25/10
Date Sampled 05/19/10 00:00					
Client ID: **EB-14-05/19/10**					
Lab ID : BMI10052001-07A	Solids, Total Dissolved (TDS)	ND	10 mg/L	05/25/10	05/25/10
Date Sampled 05/19/10 11:20					

ND = Not Detected

Roger Scholl Randy Gardner Walter Hinchman

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

Tentatively Identified Compounds - Volatile Organics by GC/MS

	Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID : **MW-25-5** Lab ID : BMI10052001-01A Date Received : 05/20/10 Date Sampled : 05/19/10 08:10	Sulfur dioxide	4.6	2.0 µg/L	05/21/10 13:21	05/21/10 13:21
Client ID : **MW-25-4** Lab ID : BMI10052001-02A Date Received : 05/20/10 Date Sampled : 05/19/10 08:52	*** None Found ***	ND	2.0 µg/L	05/21/10 13:45	05/21/10 13:45
Client ID : **MW-25-3** Lab ID : BMI10052001-03A Date Received : 05/20/10 Date Sampled : 05/19/10 09:39	*** None Found ***	ND	2.0 µg/L	05/21/10 14:08	05/21/10 14:08
Client ID : **MW-25-2** Lab ID : BMI10052001-04A Date Received : 05/20/10 Date Sampled : 05/19/10 10:36	*** None Found ***	ND	2.0 µg/L	05/21/10 14:32	05/21/10 14:32
Client ID : **MW-25-1** Lab ID : BMI10052001-05A Date Received : 05/20/10 Date Sampled : 05/19/10 11:40	*** None Found ***	ND	2.0 µg/L	05/21/10 14:55	05/21/10 14:55
Client ID : **DUPE-7-2Q10** Lab ID : BMI10052001-06A Date Received : 05/20/10 Date Sampled : 05/19/10 00:00	*** None Found ***	ND	2.0 µg/L	05/21/10 15:19	05/21/10 15:19
Client ID : **EB-14-05/19/10** Lab ID : BMI10052001-07A Date Received : 05/20/10 Date Sampled : 05/19/10 11:20	*** None Found ***	ND	2.0 µg/L	05/21/10 12:57	05/21/10 12:57
Client ID : **TB-14-05/19/10** Lab ID : BMI10052001-08A Date Received : 05/20/10 Date Sampled : 05/19/10 00:00	*** None Found ***	ND	2.0 µg/L	05/21/10 12:34	05/21/10 12:34

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

Alpha Analytical Number: BMI10052001-01A
Client I.D. Number: MW-25-5

Sampled: 05/19/10 08:10
Received: 05/20/10
Extracted: 05/21/10 13:21
Analyzed: 05/21/10 13:21

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit		Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	113	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65 Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66 Surr: 4-Bromofluorobenzene	86	(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.

6/3/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10052001-02A
Client I.D. Number: MW-25-4

Sampled: 05/19/10 08:52
Received: 05/20/10
Extracted: 05/21/10 13:45
Analyzed: 05/21/10 13:45

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit		Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	112	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65 Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66 Surr: 4-Bromofluorobenzene	87	(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

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6/3/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10052001-03A
Client I.D. Number: MW-25-3

Sampled: 05/19/10 09:39
Received: 05/20/10
Extracted: 05/21/10 14:08
Analyzed: 05/21/10 14:08

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit			Compound	Concentration		Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	J	0.50	µg/L	39	m,p-Xylene	ND		0.50	µg/L
5	Bromomethane	ND	J	1.0	µg/L	40	Bromoform	ND		0.50	µg/L
6	Trichlorofluoromethane	ND	J	0.50	µg/L	41	Styrene	ND	J	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	111		(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	98		(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	89		(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	0.58		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

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

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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6/3/10

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

Alpha Analytical Number: BMI10052001-04A
Client I.D. Number: MW-25-2

Sampled: 05/19/10 10:36
Received: 05/20/10
Extracted: 05/21/10 14:32
Analyzed: 05/21/10 14:32

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	111	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	86	(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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6/3/10
Report Date

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

Alpha Analytical Number: BMI10052001-05A
Client I.D. Number: MW-25-1

Sampled: 05/19/10 11:40
Received: 05/20/10
Extracted: 05/21/10 14:55
Analyzed: 05/21/10 14:55

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	1.4		0.50	µg/L	60	1,2,4-Trichlorobenzene	ND	1.0	µg/L
26	Bromodichloromethane	ND		0.50	µg/L	61	Naphthalene	ND	1.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND		2.5	µg/L	62	Hexachlorobutadiene	ND	1.0	µg/L
28	cis-1,3-Dichloropropene	ND		0.50	µg/L	63	1,2,3-Trichlorobenzene	ND	1.0	µg/L
29	trans-1,3-Dichloropropene	ND		0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	111	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	86	(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

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

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6/3/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10052001-06A
Client I.D. Number: DUPE-7-2Q10

Sampled: 05/19/10 00:00
Received: 05/20/10
Extracted: 05/21/10 15:19
Analyzed: 05/21/10 15:19

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit		Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	109	(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	87	(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

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6/3/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10052001-07A
Client I.D. Number: EB-14-05/19/10

Sampled: 05/19/10 11:20
Received: 05/20/10
Extracted: 05/21/10 12:57
Analyzed: 05/21/10 12:57

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit		Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	112	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65 Surr: Toluene-d8	98	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66 Surr: 4-Bromofluorobenzene	88	(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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6/3/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10052001-08A
Client I.D. Number: TB-14-05/19/10

Sampled: 05/19/10 00:00
Received: 05/20/10
Extracted: 05/21/10 12:34
Analyzed: 05/21/10 12:34

Volatile Organics by GC/MS
EPA Method SW8260B

	Compound	Concentration		Reporting Limit			Compound	Concentration	Reporting Limit	
1	Dichlorodifluoromethane	ND	Q	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	112	(70-130)	%REC
30	1,1,2-Trichloroethane	ND		0.50	µg/L	65	Surr: Toluene-d8	99	(70-130)	%REC
31	Toluene	ND		0.50	µg/L	66	Surr: 4-Bromofluorobenzene	89	(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

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6/3/10
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: BMI10052001 **Job:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
10052001-01A	MW-25-5	Aqueous	2
10052001-02A	MW-25-4	Aqueous	2
10052001-03A	MW-25-3	Aqueous	2
10052001-04A	MW-25-2	Aqueous	2
10052001-05A	MW-25-1	Aqueous	2
10052001-06A	DUPE-7-2Q10	Aqueous	2
10052001-07A	EB-14-05/19/10	Aqueous	5
10052001-08A	TB-14-05/19/10	Aqueous	2

6/3/10

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: *28-May-10*

QC Summary Report

Work Order: 10052001

Method Blank

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

File ID: **21** Batch ID: **24300** Analysis Date: **05/20/2010 11:52**

Sample ID: **MB-24300** Units : **mg/L** Run ID: **IC_1_100520A** Prep Date: **05/20/2010 10:40**

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: **22** Batch ID: **24300** Analysis Date: **05/20/2010 12:10**

Sample ID: **LFB-24300** Units : **mg/L** Run ID: **IC_1_100520A** Prep Date: **05/20/2010 10:40**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	50.7	0.5	50		101	90	110			
Nitrite (NO2) - N	4.6	0.25	5		92	90	110			
Nitrate (NO3) - N	5.26	0.25	5		105	90	110			
Phosphate, ortho - P	4.7	0.5	5		94	90	110			
Sulfate (SO4)	102	0.5	100		102	90	110			

Sample Matrix Spike

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

File ID: **28** Batch ID: **24300** Analysis Date: **05/20/2010 14:02**

Sample ID: **10052001-03ALFM** Units : **mg/L** Run ID: **IC_1_100520A** Prep Date: **05/20/2010 10:40**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	139	0.5	100	38.93	99.7	80	120			
Nitrite (NO2) - N	9.18	0.25	10	0	92	80	120			
Nitrate (NO3) - N	22.6	0.25	10	11.9	107	80	120			
Phosphate, ortho - P	8.78	0.5	10	0	88	80	120			
Sulfate (SO4)	249	0.5	200	59.92	94	80	120			

Sample Matrix Spike Duplicate

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

File ID: **29** Batch ID: **24300** Analysis Date: **05/20/2010 14:20**

Sample ID: **10052001-03ALFMD** Units : **mg/L** Run ID: **IC_1_100520A** Prep Date: **05/20/2010 10:40**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	138	0.5	100	38.93	99	80	120	138.6	0.3(15)	
Nitrite (NO2) - N	9.24	0.25	10	0	92	80	120	9.183	0.6(15)	
Nitrate (NO3) - N	22.8	0.25	10	11.9	109	80	120	22.61	1.0(15)	
Phosphate, ortho - P	9.6	0.5	10	0	96	80	120	8.784	8.9(15)	
Sulfate (SO4)	246	0.5	200	59.92	93	80	120	248.8	1.0(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: *28-May-10*

QC Summary Report

Work Order: 10052001

Method Blank

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

File ID: **15** Batch ID: **24319** Analysis Date: **05/24/2010 14:29**

Sample ID: **MB-24319** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

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: **16** Batch ID: **24319** Analysis Date: **05/24/2010 14:47**

Sample ID: **LFB-24319** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	22.6	2	25		91	85	115			

Sample Matrix Spike

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

File ID: **34** Batch ID: **24319** Analysis Date: **05/24/2010 20:18**

Sample ID: **10052001-03ALFM** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	36.6	2	25	10.32	105	80	120			

Sample Matrix Spike Duplicate

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

File ID: **35** Batch ID: **24319** Analysis Date: **05/24/2010 20:37**

Sample ID: **10052001-03ALFMD** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	38	2	25	10.32	111	80	120	36.58	3.7(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: *28-May-10*

QC Summary Report

Work Order: 10052001

Laboratory Control Spike Type **LCS** Test Code: **SM2320B**

File ID: Batch ID: **W0521ALA** Analysis Date: **05/21/2010 12:56**

Sample ID: **LCS-W0521ALA** Units : **mg/L** Run ID: **WETLAB_100521G** Prep Date: **05/21/2010 12:56**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Alkalinity, Bicarbonate (As CaCO3)	243.4	10	250		97	80	120			
Alkalinity, Carbonate (As CaCO3)	243.4	10	250		97	80	120			
Alkalinity, Total (As CaCO3 at pH 4.5)	243	10	250		97	80	120			

Comments:

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Date: *03-Jun-10*

QC Summary Report

Work Order: 10052001

Method Blank

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

File ID: **052110.B\310MB.D** Batch ID: **24310K** Analysis Date: **05/22/2010 09:36**

Sample ID: **MB-24310** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	ND	0.5								
Magnesium (Mg)	ND	0.5								
Potassium (K)	ND	0.5								
Calcium (Ca)	ND	0.5								
Chromium (Cr)	ND	0.005								
Iron (Fe)	ND	0.1								
Arsenic (As)	ND	0.002								
Lead (Pb)	ND	0.005								

Laboratory Control Spike

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

File ID: **052110.B\006_LCS.D** Batch ID: **24310K** Analysis Date: **05/21/2010 16:01**

Sample ID: **LCS-24310** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	5.37	0.5	5		107	85	115			
Magnesium (Mg)	5.14	0.5	5		103	85	115			
Potassium (K)	5.02	0.5	5		100	85	115			
Calcium (Ca)	5.34	0.5	5		107	85	115			
Chromium (Cr)	0.051	0.005	0.05		102	85	115			
Iron (Fe)	5.2	0.2	5		104	85	115			
Arsenic (As)	0.0495	0.002	0.05		99	85	115			
Lead (Pb)	0.0475	0.005	0.05		95	85	115			

Sample Matrix Spike

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

File ID: **052110.B\002SMPL.D** Batch ID: **24310K** Analysis Date: **05/21/2010 16:22**

Sample ID: **10052001-03AMS** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	36.8	0.5	5	33.92	57	70	130			M3
Magnesium (Mg)	24.2	0.5	5	19.98	85	70	130			
Potassium (K)	7.3	0.5	5	2.573	95	70	130			
Calcium (Ca)	74.9	0.5	5	75.39	-9	70	130			M3
Chromium (Cr)	0.0496	0.005	0.05	0	99	70	130			
Iron (Fe)	5.04	0.2	5	0.3324	94	70	130			
Arsenic (As)	0.0493	0.002	0.05	0	99	70	130			
Lead (Pb)	0.0438	0.005	0.05	0	88	70	130			

Sample Matrix Spike Duplicate

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

File ID: **052110.B\003SMPL.D** Batch ID: **24310K** Analysis Date: **05/21/2010 16:27**

Sample ID: **10052001-03AMSD** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	37.6	0.5	5	33.92	74	70	130	36.75	2.4(20)	
Magnesium (Mg)	23.7	0.5	5	19.98	74	70	130	24.22	2.3(20)	
Potassium (K)	7.1	0.5	5	2.573	91	70	130	7.304	2.9(20)	
Calcium (Ca)	76	0.5	5	75.39	12	70	130	74.94	1.4(20)	M3
Chromium (Cr)	0.0514	0.005	0.05	0	103	70	130	0.04958	3.6(20)	
Iron (Fe)	5.26	0.2	5	0.3324	99	70	130	5.038	4.4(20)	
Arsenic (As)	0.0487	0.002	0.05	0	97	70	130	0.04928	1.2(20)	
Lead (Pb)	0.044	0.005	0.05	0	88	70	130	0.04378	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.

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

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.

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Date: *02-Jun-10*

QC Summary Report

Work Order: 10052001

Laboratory Control Spike Type **LCS** Test Code: **EPA Method 150.2 / SM4500HB / SW9040C**

File ID: Batch ID: **W0520PH** Analysis Date: **05/20/2010 15:43**

Sample ID: **LCS-W0520PH** Units : **pH Units** Run ID: **WETLAB_100520A** Prep Date: **05/20/2010 15:43**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
pH	4.99	1.7	5		99.8	90	110			

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: *02-Jun-10*

QC Summary Report

Work Order: 10052001

Method Blank

Type **MBLK** Test Code: **SM2540C**

File ID: Batch ID: **W0520DS** Analysis Date: **05/25/2010 00:00**

Sample ID: **MBLK-W0520DS** Units : **mg/L** Run ID: **WETLAB_100520C** Prep Date: **05/25/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	ND	10								

Laboratory Control Spike

Type **LCS** Test Code: **SM2540C**

File ID: Batch ID: **W0520DS** Analysis Date: **05/25/2010 00:00**

Sample ID: **LCS-W0520DS** Units : **mg/L** Run ID: **WETLAB_100520C** Prep Date: **05/25/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	94	10	100		94	80	120			

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-Jun-10*

QC Summary Report

Work Order: 10052001

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

File ID: **C:\HPCHEM\MS07\DATA\100521\10052108.D** Batch ID: **MS07W0521M** Analysis Date: **05/21/2010 10:36**

Sample ID: **MBLK MS07W0521M** Units : **µg/L** Run ID: **MSD_07_100521B** Prep Date: **05/21/2010 10:36**

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	11.2		10		112	70	130			
Surr: Toluene-d8	9.72		10		97	70	130			

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10052001

Surr: 4-Bromofluorobenzene	8.61	10	86	70	130	

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10052001

Laboratory Control Spike Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **C:\HPCHEM\MS07\DATA\100521\10052106.D** Batch ID: **MS07W0521M** Analysis Date: **05/21/2010 09:49**

Sample ID: **LCS MS07W0521M** Units : **µg/L** Run ID: **MSD_07_100521B** Prep Date: **05/21/2010 09:49**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	6.44	1	10		64	70(70)	130			L50
Chloromethane	7.55	2	10		76	70	130			
Vinyl chloride	11.1	1	10		111	70	130			
Chloroethane	19.4	1	10		194	70	130(130)			L1
Bromomethane	16.3	2	10		163	70	130(130)			L1
Trichlorofluoromethane	13.3	1	10		133	70	130(130)			L1
1,1-Dichloroethene	10.7	1	10		107	70	130			
Dichloromethane	9.63	2	10		96	70	130			
trans-1,2-Dichloroethene	10.9	1	10		109	70	130			
Methyl tert-butyl ether (MTBE)	10.6	0.5	10		106	70	130			
1,1-Dichloroethane	10.5	1	10		105	70	130			
cis-1,2-Dichloroethene	10.9	1	10		109	70	130			
Bromochloromethane	10.8	1	10		108	70	130			
Chloroform	10.5	1	10		105	70	130			
2,2-Dichloropropane	13.2	1	10		132	70	130(130)			L51
1,2-Dichloroethane	11.6	1	10		116	70	130			
1,1,1-Trichloroethane	11.7	1	10		117	70	130			
1,1-Dichloropropene	11.4	1	10		114	70	130			
Carbon tetrachloride	11.6	1	10		116	70	130			
Benzene	10.6	0.5	10		106	70	130			
Dibromomethane	10.6	1	10		106	70	130			
1,2-Dichloropropane	11.7	1	10		117	70	130			
Trichloroethene	11.1	1	10		111	70	130			
Bromodichloromethane	11.7	1	10		117	70	130			
cis-1,3-Dichloropropene	11.2	1	10		112	70	130			
trans-1,3-Dichloropropene	11.8	1	10		118	70	130			
1,1,2-Trichloroethane	10.4	1	10		104	70	130			
Toluene	10.3	0.5	10		103	70	130			
1,3-Dichloropropane	10.2	1	10		102	70	130			
Dibromochloromethane	11.4	1	10		114	70	130			
1,2-Dibromoethane (EDB)	20.5	2	20		102	70	130			
Tetrachloroethene	11.2	1	10		112	70	130			
1,1,1,2-Tetrachloroethane	10.9	1	10		109	70	130			
Chlorobenzene	10.3	1	10		103	70	130			
Ethylbenzene	10.9	0.5	10		109	70	130			
m,p-Xylene	10.9	0.5	10		109	70	130			
Bromoform	11.9	1	10		119	70	130			
Styrene	15.2	1	10		152	70	130(130)			L1
o-Xylene	11.2	0.5	10		112	70	130			
1,1,2,2-Tetrachloroethane	9.39	1	10		94	70	130			
1,2,3-Trichloropropane	21.1	2	20		106	70	130			
Isopropylbenzene	9.86	1	10		99	70	130			
Bromobenzene	9.02	1	10		90	70	130			
n-Propylbenzene	9.53	1	10		95	70	130			
4-Chlorotoluene	9.82	1	10		98	70	130			
2-Chlorotoluene	9.55	1	10		96	70	130			
1,3,5-Trimethylbenzene	9.73	1	10		97	70	130			
tert-Butylbenzene	9.73	1	10		97	70	130			
1,2,4-Trimethylbenzene	9.76	1	10		98	70	130			
sec-Butylbenzene	9.76	1	10		98	70	130			
1,3-Dichlorobenzene	9.02	1	10		90	70	130			
1,4-Dichlorobenzene	9.07	1	10		91	70	130			
4-Isopropyltoluene	10.2	1	10		102	70	130			
1,2-Dichlorobenzene	8.61	1	10		86	70	130			
n-Butylbenzene	10.6	1	10		106	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	43.2	3	50		86	70	130			
1,2,4-Trichlorobenzene	9.83	2	10		98	70	130			
Naphthalene	9.94	2	10		99	70	130			
Hexachlorobutadiene	21	2	20		105	70	130			
1,2,3-Trichlorobenzene	9.6	2	10		96	70	130			
Surr: 1,2-Dichloroethane-d4	11.2		10		112	70	130			
Surr: Toluene-d8	9.67		10		97	70	130			
Surr: 4-Bromofluorobenzene	8.65		10		87	70	130			

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10052001

Sample Matrix Spike Type **MS** Test Code: **EPA Method SW8260B**

File ID: **C:\HPCHEM\MS07\DATA\100521\10052109.D** Batch ID: **MS07W0521M** Analysis Date: **05/21/2010 10:59**

Sample ID: **10052001-03AMS** Units : **µg/L** Run ID: **MSD_07_100521B** Prep Date: **05/21/2010 10:59**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	38.9	2.5	50	0	78	13	167			
Chloromethane	40.2	10	50	0	80	28	145			
Vinyl chloride	63.2	2.5	50	0	126	43	134			
Chloroethane	102	2.5	50	0	203	39	154			M55
Bromomethane	94.5	10	50	0	189	19	176			M55
Trichlorofluoromethane	79.9	2.5	50	0	160	34	160			
1,1-Dichloroethene	53.5	2.5	50	0	107	60	130			
Dichloromethane	46	10	50	0	92	68	130			
trans-1,2-Dichloroethene	52.8	2.5	50	0	106	63	130			
Methyl tert-butyl ether (MTBE)	46.8	1.3	50	0	94	56	141			
1,1-Dichloroethane	50.5	2.5	50	0	101	61	130			
cis-1,2-Dichloroethene	51.4	2.5	50	0	103	70	130			
Bromochloromethane	52.4	2.5	50	0	105	70	130			
Chloroform	50.8	2.5	50	0	102	67	130			
2,2-Dichloropropane	63	2.5	50	0	126	30	152			
1,2-Dichloroethane	55.7	2.5	50	0	111	60	135			
1,1,1-Trichloroethane	57.2	2.5	50	0	114	59	137			
1,1-Dichloropropene	54.5	2.5	50	0	109	63	130			
Carbon tetrachloride	58.4	2.5	50	0	117	50	147			
Benzene	50.4	1.3	50	0	101	67	130			
Dibromomethane	50	2.5	50	0	100	69	133			
1,2-Dichloropropane	56.3	2.5	50	0	113	69	130			
Trichloroethene	53.2	2.5	50	0	106	69	130			
Bromodichloromethane	55.4	2.5	50	0	111	66	134			
cis-1,3-Dichloropropene	47.7	2.5	50	0	95	63	130			
trans-1,3-Dichloropropene	53.9	2.5	50	0	108	66	131			
1,1,2-Trichloroethane	47.7	2.5	50	0	95	68	130			
Toluene	49.3	1.3	50	0	99	66	130			
1,3-Dichloropropane	46.3	2.5	50	0	93	70	130			
Dibromochloromethane	52.6	2.5	50	0	105	70	130			
1,2-Dibromoethane (EDB)	95.4	5	100	0	95	70	130			
Tetrachloroethene	54.4	2.5	50	0.58	108	61	134			
1,1,1,2-Tetrachloroethane	51.4	2.5	50	0	103	70	130			
Chlorobenzene	49.5	2.5	50	0	99	70	130			
Ethylbenzene	53	1.3	50	0	106	68	130			
m,p-Xylene	52.1	1.3	50	0	104	64	130			
Bromoform	56.6	2.5	50	0	113	64	138			
Styrene	72	2.5	50	0	144	69	130			M55
o-Xylene	53.9	1.3	50	0	108	70	130			
1,1,2,2-Tetrachloroethane	44.3	2.5	50	0	89	65	131			
1,2,3-Trichloropropane	101	10	100	0	101	70	130			
Isopropylbenzene	46.7	2.5	50	0	93	64	138			
Bromobenzene	42.7	2.5	50	0	85	70	130			
n-Propylbenzene	44.9	2.5	50	0	90	66	132			
4-Chlorotoluene	45.9	2.5	50	0	92	70	130			
2-Chlorotoluene	45.4	2.5	50	0	91	70	130			
1,3,5-Trimethylbenzene	46.3	2.5	50	0	93	66	136			
tert-Butylbenzene	46.2	2.5	50	0	92	65	137			
1,2,4-Trimethylbenzene	46	2.5	50	0	92	65	137			
sec-Butylbenzene	46.9	2.5	50	0	94	66	134			
1,3-Dichlorobenzene	43.2	2.5	50	0	86	70	130			
1,4-Dichlorobenzene	43	2.5	50	0	86	70	130			
4-Isopropyltoluene	48.4	2.5	50	0	97	66	137			
1,2-Dichlorobenzene	40.6	2.5	50	0	81	70	130			
n-Butylbenzene	50.5	2.5	50	0	101	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	199	15	250	0	80	67	130			
1,2,4-Trichlorobenzene	46.6	10	50	0	93	61	137			
Naphthalene	44.9	10	50	0	90	40	167			
Hexachlorobutadiene	100	10	100	0	100	61	130			
1,2,3-Trichlorobenzene	44.1	10	50	0	88	51	144			
Surr: 1,2-Dichloroethane-d4	56.2		50		112	70	130			
Surr: Toluene-d8	47.5		50		95	70	130			
Surr: 4-Bromofluorobenzene	42.3		50		85	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-Jun-10*

QC Summary Report

Work Order: 10052001

Sample Matrix Spike Duplicate Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **C:\HPCHEM\MS07\DATA\100521\10052110.D** Batch ID: **MS07W0521M** Analysis Date: **05/21/2010 11:23**

Sample ID: **10052001-03AMSD** Units : **µg/L** Run ID: **MSD_07_100521B** Prep Date: **05/21/2010 11:23**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	42.7	2.5	50	0	85	13	167	38.9	9.4(20)	
Chloromethane	46.4	10	50	0	93	28	145	40.16	14.5(20)	
Vinyl chloride	75.9	2.5	50	0	152	43	134	63.17	18.3(20)	M1
Chloroethane	0	2.5	50	0	0	39	154	101.6	200.0(20)	M57R58
Bromomethane	124	10	50	0	249	19	176	94.5	27.4(20)	M55R58
Trichlorofluoromethane	82.7	2.5	50	0	165	34	160	79.93	3.4(20)	M55
1,1-Dichloroethene	60.5	2.5	50	0	121	60	130	53.46	12.4(20)	
Dichloromethane	51.4	10	50	0	103	68	130	45.96	11.1(20)	
trans-1,2-Dichloroethene	59.6	2.5	50	0	119	63	130	52.84	12.0(20)	
Methyl tert-butyl ether (MTBE)	53	1.3	50	0	106	56	141	46.82	12.4(20)	
1,1-Dichloroethane	56.2	2.5	50	0	112	61	130	50.5	10.6(20)	
cis-1,2-Dichloroethene	57.2	2.5	50	0	114	70	130	51.42	10.7(20)	
Bromochloromethane	57.4	2.5	50	0	115	70	130	52.38	9.1(20)	
Chloroform	56.1	2.5	50	0	112	67	130	50.82	9.9(20)	
2,2-Dichloropropane	68.7	2.5	50	0	137	30	152	62.95	8.8(20)	
1,2-Dichloroethane	60.4	2.5	50	0	121	60	135	55.66	8.1(20)	
1,1,1-Trichloroethane	62.7	2.5	50	0	125	59	137	57.22	9.2(20)	
1,1-Dichloropropene	60.7	2.5	50	0	121	63	130	54.53	10.8(20)	
Carbon tetrachloride	64.7	2.5	50	0	129	50	147	58.39	10.3(20)	
Benzene	55.7	1.3	50	0	111	67	130	50.44	10.0(20)	
Dibromomethane	54.7	2.5	50	0	109	69	133	50	8.9(20)	
1,2-Dichloropropane	61.1	2.5	50	0	122	69	130	56.25	8.3(20)	
Trichloroethene	58.8	2.5	50	0	118	69	130	53.18	10.0(20)	
Bromodichloromethane	60.3	2.5	50	0	121	66	134	55.35	8.6(20)	
cis-1,3-Dichloropropene	51.5	2.5	50	0	103	63	130	47.73	7.5(20)	
trans-1,3-Dichloropropene	59.2	2.5	50	0	118	66	131	53.89	9.4(20)	
1,1,2-Trichloroethane	51.9	2.5	50	0	104	68	130	47.73	8.3(20)	
Toluene	53.8	1.3	50	0	108	66	130	49.34	8.7(20)	
1,3-Dichloropropane	50.6	2.5	50	0	101	70	130	46.27	8.9(20)	
Dibromochloromethane	57.5	2.5	50	0	115	70	130	52.62	8.8(20)	
1,2-Dibromoethane (EDB)	104	5	100	0	104	70	130	95.39	8.6(20)	
Tetrachloroethene	60.5	2.5	50	0.58	120	61	134	54.36	10.7(20)	
1,1,1,2-Tetrachloroethane	56.5	2.5	50	0	113	70	130	51.4	9.5(20)	
Chlorobenzene	54.1	2.5	50	0	108	70	130	49.52	8.8(20)	
Ethylbenzene	58.5	1.3	50	0	117	68	130	52.99	9.9(20)	
m,p-Xylene	57.7	1.3	50	0	115	64	130	52.05	10.3(20)	
Bromoform	62.3	2.5	50	0	125	64	138	56.62	9.5(20)	
Styrene	79	2.5	50	0	158	69	130	72.02	9.2(20)	M55
o-Xylene	58.6	1.3	50	0	117	70	130	53.86	8.4(20)	
1,1,2,2-Tetrachloroethane	48.2	2.5	50	0	96	65	131	44.34	8.2(20)	
1,2,3-Trichloropropane	123	10	100	0	123	70	130	101.3	19.0(20)	
Isopropylbenzene	51.7	2.5	50	0	103	64	138	46.71	10.1(20)	
Bromobenzene	46.3	2.5	50	0	93	70	130	42.7	8.0(20)	
n-Propylbenzene	50.1	2.5	50	0	100	66	132	44.94	10.8(20)	
4-Chlorotoluene	50.6	2.5	50	0	101	70	130	45.92	9.8(20)	
2-Chlorotoluene	50.1	2.5	50	0	100	70	130	45.42	9.8(20)	
1,3,5-Trimethylbenzene	51.3	2.5	50	0	103	66	136	46.29	10.3(20)	
tert-Butylbenzene	51.2	2.5	50	0	102	65	137	46.19	10.3(20)	
1,2,4-Trimethylbenzene	51.1	2.5	50	0	102	65	137	46.02	10.4(20)	
sec-Butylbenzene	52.1	2.5	50	0	104	66	134	46.93	10.3(20)	
1,3-Dichlorobenzene	47.4	2.5	50	0	95	70	130	43.22	9.3(20)	
1,4-Dichlorobenzene	47.4	2.5	50	0	95	70	130	42.99	9.7(20)	
4-Isopropyltoluene	53.6	2.5	50	0	107	66	137	48.38	10.2(20)	
1,2-Dichlorobenzene	44.5	2.5	50	0	89	70	130	40.58	9.2(20)	
n-Butylbenzene	56.1	2.5	50	0	112	60	142	50.47	10.6(20)	
1,2-Dibromo-3-chloropropane (DBCP)	215	15	250	0	86	67	130	199.3	7.8(20)	
1,2,4-Trichlorobenzene	52	10	50	0	104	61	137	46.6	10.9(20)	
Naphthalene	50.4	10	50	0	101	40	167	44.85	11.6(20)	
Hexachlorobutadiene	113	10	100	0	113	61	130	100.4	11.7(20)	
1,2,3-Trichlorobenzene	49.9	10	50	0	99.7	51	144	44.12	12.2(20)	
Surr: 1,2-Dichloroethane-d4	55.8		50		112	70	130			
Surr: Toluene-d8	47.4		50		95	70	130			
Surr: 4-Bromofluorobenzene	42.5		50		85	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-Jun-10*

QC Summary Report

Work Order: 10052001

Comments:

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

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

L1 = The associated blank spike recovery was above laboratory acceptance limits.

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

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

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

M55 = Matrix spike recovery was above laboratory acceptance limits.

M57 = Matrix spike recovery was below laboratory acceptance limits.

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

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 : BMIS10052001

Report Due By : 5:00 PM On : 04-Jun-2010

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org

EDD Required : **Yes**

Sampled by : Client

PO : 218013

Client's COC # : 28941 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	20-May-2010	**20-May-2010**

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10052001-01A	MW-25-5	AQ	05/19/10 08:10	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10052001-02A	MW-25-4	AQ	05/19/10 08:52	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10052001-03A	MW-25-3	AQ	05/19/10 09:39	10	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD
BMI10052001-04A	MW-25-2	AQ	05/19/10 10:36	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10052001-05A	MW-25-1	AQ	05/19/10 11:40	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	Level IV QC
BMI10052001-06A	DUPE-7-2Q10	AQ	05/19/10 00:00	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10052001-07A	EB-14-05/19/10	AQ	05/19/10 11:20	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10052001-08A	TB-14-05/19/10	AQ	05/19/10 00:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/10/10

Comments: Security seals intact. Frozen ice. Temp Blank #9140 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). :

	Signature	Print Name	Company	Date/Time
Logged in by:	Elizabeth Adcox	Elizabeth Adcox	**Alpha Analytical, Inc.**	5.20.10 9:56

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:

Name GERALD TOMPKINS / BATTELLE
Address 505 KING 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 ___

28941

Page # 1 of 1

Client Name	P.O. #	Job #
BATTELLE / DAVID CONNER	218013	6005862
Address	**EMail Address**	
3990 OLD TOWN AVE, C-205		
City, State, Zip	**Phone #**	**Fax #**
SAN DIEGO, CA 92110	(619) 726-7311	

Required QC Level? I II (III) IV

EDD / EDF? YES ___ NO ___

Global ID # _____

Time Sampled	Date Sampled	Matrix* See Key Below	Sampled by / Lab ID Number (Office Use Only)	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	VOC (524.2)	TOTAL CR, LEAD, ARSENIC (200.8)	GEN. CHEM. (NO3, K, Cl, mg, FE) (200.7)	CIO4 - (314.0)	GEN. CHEM. (300.0, 310.1, 160.1, 150.1)	REMARKS
810	5/19/10	AQ	BMI10052001-01	MW-25-5	NORM		5	X	X	X	X	X	
852			-02	MW-25-4			5	X	X	X	X	X	
939			-03	MW-25-3			10	X	X	X	X	X	MS/MSD
1036			-04	MW-25-2			5	X	X	X	X	X	
1140			-05	MW-25-1			5	X	X	X	X	X	LEVEL IV QC
—			-06	DUPE-7-2Q10			5	X	X	X	X	X	DUPLICATE
1120			-07	EB-14-05/19/10			5	X	X	X	X	X	EQUIPMENT BLANK
—			-08	TB-14-05/19/10	↓		1	X					TRIP BLANK

ADDITIONAL INSTRUCTIONS:

Signature	Print Name	Company	Date	Time
Relinquished by	MARCO MENDOZA	INSIGHT	5/19/10	1242
Received by	Anthony Hall	Alpha Analytical	5/19/10	1242
Relinquished by	Anthony Hall	" "	5/19/10	1242
Received by	Elizabeth Adcox	Alpha	5-20-10	9:56
Relinquished by				
Received by				

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis 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-Jun-10*

David Conner
Battelle Memorial Institute
655 West Broadway Suite 1420
San Diego, CA 92101
(818) 393-2808

CASE NARRATIVE

Job: G005862/JPL Groundwater Monitoring
Work Order: BMI10052101 **Cooler Temp:** 4 °C

Alpha's Sample ID	Client's Sample ID	Matrix
10052101-01A	MW-26-2	Aqueous
10052101-02A	MW-26-1	Aqueous
10052101-03A	EB-15-05/20/10	Aqueous
10052101-04A	TB-15-05/20/10	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.

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: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/21/10

Job: G005862/JPL Groundwater Monitoring

Anions by IC
EPA Method 300.0

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-26-2**					
Lab ID : BMI10052101-01A	Chloride	14	0.50 mg/L	05/21/10 13:30	05/21/10 14:58
Date Sampled 05/20/10 08:41	Nitrite (NO2) - N	ND	0.25 mg/L	05/21/10 13:30	05/21/10 14:58
	Nitrate (NO3) - N	0.64	0.25 mg/L	05/21/10 13:30	05/21/10 14:58
	Phosphate, ortho - P	ND	0.50 mg/L	05/21/10 13:30	05/21/10 14:58
	Sulfate (SO4)	16	0.50 mg/L	05/21/10 13:30	05/21/10 14:58
Client ID: **MW-26-1**					
Lab ID : BMI10052101-02A	Chloride	90	50 mg/L	05/21/10 13:30	05/21/10 15:17
Date Sampled 05/20/10 09:53	Nitrite (NO2) - N	ND	0.25 mg/L	05/21/10 13:30	05/21/10 15:17
	Nitrate (NO3) - N	8.4	0.25 mg/L	05/21/10 13:30	05/21/10 15:17
	Phosphate, ortho - P	ND	0.50 mg/L	05/21/10 13:30	05/21/10 15:17
	Sulfate (SO4)	100	75 mg/L	05/21/10 13:30	05/21/10 15:17
Client ID: **EB-15-05/20/10**					
Lab ID : BMI10052101-03A	Chloride	ND	0.50 mg/L	05/21/10 13:30	05/21/10 15:35
Date Sampled 05/20/10 09:29	Nitrite (NO2) - N	ND	0.25 mg/L	05/21/10 13:30	05/21/10 15:35
	Nitrate (NO3) - N	ND	0.25 mg/L	05/21/10 13:30	05/21/10 15:35
	Phosphate, ortho - P	ND	0.50 mg/L	05/21/10 13:30	05/21/10 15:35
	Sulfate (SO4)	ND	0.50 mg/L	05/21/10 13:30	05/21/10 15:35

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.

6/4/10
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: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/21/10

Job: G005862/JPL Groundwater Monitoring

Perchlorate by Ion Chromatography
EPA Method 314.0

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-26-2**					
Lab ID : BMI10052101-01A	Perchlorate	ND	1.00 µg/L	05/24/10 11:13	05/24/10 22:09
Date Sampled 05/20/10 08:41					
Client ID: **MW-26-1**					
Lab ID : BMI10052101-02A	Perchlorate	2.79	1.00 µg/L	05/24/10 11:13	05/24/10 22:27
Date Sampled 05/20/10 09:53					
Client ID: **EB-15-05/20/10**					
Lab ID : BMI10052101-03A	Perchlorate	ND	1.00 µg/L	05/24/10 11:13	05/24/10 23:22
Date Sampled 05/20/10 09:29					

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.

6/4/10
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: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/21/10

Job: G005862/JPL Groundwater Monitoring

Alkalinity
SM2320B

Parameter		Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-26-2**					
Lab ID : BMI10052101-01A	Alkalinity, Bicarbonate (As CaCO3)	210	10 mg/L	05/21/10 14:08	05/21/10 14:08
Date Sampled 05/20/10 08:41	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 14:08	05/21/10 14:08
	Alkalinity, Total (As CaCO3 at pH 4.5)	210	10 mg/L	05/21/10 14:08	05/21/10 14:08
Client ID: **MW-26-1**					
Lab ID : BMI10052101-02A	Alkalinity, Bicarbonate (As CaCO3)	270	10 mg/L	05/21/10 14:12	05/21/10 14:12
Date Sampled 05/20/10 09:53	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 14:12	05/21/10 14:12
	Alkalinity, Total (As CaCO3 at pH 4.5)	270	10 mg/L	05/21/10 14:12	05/21/10 14:12
Client ID: **EB-15-05/20/10**					
Lab ID : BMI10052101-03A	Alkalinity, Bicarbonate (As CaCO3)	ND	10 mg/L	05/21/10 14:22	05/21/10 14:22
Date Sampled 05/20/10 09:29	Alkalinity, Carbonate (As CaCO3)	ND	10 mg/L	05/21/10 14:22	05/21/10 14:22
	Alkalinity, Total (As CaCO3 at pH 4.5)	ND	10 mg/L	05/21/10 14:22	05/21/10 14:22

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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6/4/10
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: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/21/10

Job: G005862/JPL Groundwater Monitoring

Metals by ICPMS
EPA Method 200.8

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-26-2**				
Lab ID : BMI10052101-01A Sodium (Na)	40	0.50 mg/L	05/21/10 11:39	05/21/10 17:13
Date Sampled 05/20/10 08:41 Magnesium (Mg)	13	0.50 mg/L	05/21/10 11:39	05/21/10 17:13
Potassium (K)	2.0	0.50 mg/L	05/21/10 11:39	05/21/10 17:13
Calcium (Ca)	44	0.50 mg/L	05/21/10 11:39	05/21/10 17:13
Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:13
Iron (Fe)	1.5	0.10 mg/L	05/21/10 11:39	05/21/10 17:13
Arsenic (As)	0.0022	0.0020 mg/L	05/21/10 11:39	05/21/10 17:13
Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:13
Client ID: **MW-26-1**				
Lab ID : BMI10052101-02A Sodium (Na)	30	0.50 mg/L	05/21/10 11:39	05/21/10 17:18
Date Sampled 05/20/10 09:53 Magnesium (Mg)	37	0.50 mg/L	05/21/10 11:39	05/21/10 17:18
Potassium (K)	2.7	0.50 mg/L	05/21/10 11:39	05/21/10 17:18
Calcium (Ca)	120	0.50 mg/L	05/21/10 11:39	05/21/10 17:18
Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:18
Iron (Fe)	0.53	0.10 mg/L	05/21/10 11:39	05/21/10 17:18
Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 17:18
Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:18
Client ID: **EB-15-05/20/10**				
Lab ID : BMI10052101-03A Sodium (Na)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:24
Date Sampled 05/20/10 09:29 Magnesium (Mg)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:24
Potassium (K)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:24
Calcium (Ca)	ND	0.50 mg/L	05/21/10 11:39	05/21/10 17:24
Chromium (Cr)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:24
Iron (Fe)	ND	0.10 mg/L	05/21/10 11:39	05/21/10 17:24
Arsenic (As)	ND	0.0020 mg/L	05/21/10 11:39	05/21/10 17:24
Lead (Pb)	ND	0.0050 mg/L	05/21/10 11:39	05/21/10 17:24

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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ANALYTICAL REPORT

Battelle Memorial Institute
655 West Broadway
San Diego, CA 92101

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/21/10

Job: G005862/JPL Groundwater Monitoring

pH (Range 1.7 to 12.4)
EPA Method 150.2 / SM4500HB / SW9040C

	Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-26-2**					
Lab ID : BMI10052101-01A	pH	7.7	1.7 pH Units	05/21/10 15:04	05/21/10 15:04
Date Sampled 05/20/10 08:41	pH - Temperature	21	1.0 °C	05/21/10 15:04	05/21/10 15:04
Client ID: **MW-26-1**					
Lab ID : BMI10052101-02A	pH	7.0	1.7 pH Units	05/21/10 15:07	05/21/10 15:07
Date Sampled 05/20/10 09:53	pH - Temperature	20	1.0 °C	05/21/10 15:07	05/21/10 15:07
Client ID: **EB-15-05/20/10**					
Lab ID : BMI10052101-03A	pH	6.3	1.7 pH Units	05/21/10 15:11	05/21/10 15:11
Date Sampled 05/20/10 09:29	pH - Temperature	20	1.0 °C	05/21/10 15:11	05/21/10 15:11

The EPA has established an analytical holding time of 15 minutes for this method as documented in the Methods Update Rule, Federal Register, Vol 72, No 47, March 2007. This holding time will always be exceeded, unless samples are analyzed in the field.
The laboratory performed this analysis in the shortest practical holding time after sample receipt.

Roger Scholl Randy Gardner Walter Hinchman

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ANALYTICAL REPORT

Battelle Memorial Institute
655 West Broadway
San Diego, CA 92101

Attn: David Conner
Phone: (818) 393-2808
Fax: (614) 458-6641
Date Received : 05/21/10

Job: G005862/JPL Groundwater Monitoring

Total Dissolved Solids (TDS)
SM2540C

Parameter	Concentration	Reporting Limit	Date Extracted	Date Analyzed
Client ID: **MW-26-2**				
Lab ID : BMI10052101-01A Solids, Total Dissolved (TDS)	290	10 mg/L	05/26/10	05/26/10
Date Sampled 05/20/10 08:41				
Client ID: **MW-26-1**				
Lab ID : BMI10052101-02A Solids, Total Dissolved (TDS)	570	10 mg/L	05/26/10	05/26/10
Date Sampled 05/20/10 09:53				
Client ID: **EB-15-05/20/10**				
Lab ID : BMI10052101-03A Solids, Total Dissolved (TDS)	ND	10 mg/L	05/26/10	05/26/10
Date Sampled 05/20/10 09:29				

ND = Not Detected

Roger Scholl Randy Gardner Walter Hinchman

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

Tentatively Identified Compounds - Volatile Organics by GC/MS

		Parameter	Estimated Concentration	Estimated Reporting Limit	Date Extracted	Date Analyzed
Client ID :	**MW-26-2**					
Lab ID :	BMI10052101-01A	* * * None Found * * *	ND	2.0 µg/L	05/24/10 13:47	05/24/10 13:47
Date Received :	05/21/10					
Date Sampled :	05/20/10 08:41					
Client ID :	**MW-26-1**					
Lab ID :	BMI10052101-02A	* * * None Found * * *	ND	2.0 µg/L	05/24/10 14:10	05/24/10 14:10
Date Received :	05/21/10					
Date Sampled :	05/20/10 09:53					
Client ID :	**EB-15-05/20/10**					
Lab ID :	BMI10052101-03A	* * * None Found * * *	ND	2.0 µg/L	05/24/10 13:25	05/24/10 13:25
Date Received :	05/21/10					
Date Sampled :	05/20/10 09:29					
Client ID :	**TB-15-05/20/10**					
Lab ID :	BMI10052101-04A	* * * None Found * * *	ND	2.0 µg/L	05/24/10 13:02	05/24/10 13:02
Date Received :	05/21/10					
Date Sampled :	05/20/10 07:00					

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

Roger Scholl Randy Gardner Walter Hinchman

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

Alpha Analytical Number: BMI10052101-01A
Client I.D. Number: MW-26-2

Sampled: 05/20/10 08:41
Received: 05/21/10
Extracted: 05/24/10 13:47
Analyzed: 05/24/10 13:47

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	2.0	µg/L	37	Chlorobenzene	ND		0.50	µg/L
3	Vinyl chloride	ND	0.50	µg/L	38	Ethylbenzene	ND		0.50	µg/L
4	Chloroethane	ND	0.50	µg/L	39	m,p-Xylene	ND		0.50	µg/L
5	Bromomethane	ND	2.0	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	2.0	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		2.0	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		3.0	µg/L
25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND		2.0	µg/L
26	Bromodichloromethane	ND	0.50	µg/L	61	Naphthalene	ND	Q	2.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	µg/L	62	Hexachlorobutadiene	ND		2.0	µg/L
28	cis-1,3-Dichloropropene	ND	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND		2.0	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	107		(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 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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ANALYTICAL REPORT

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

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

Alpha Analytical Number: BMI10052101-02A
Client I.D. Number: MW-26-1

Sampled: 05/20/10 09:53
Received: 05/21/10
Extracted: 05/24/10 14:10
Analyzed: 05/24/10 14:10

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	2.0	µg/L	37	Chlorobenzene	ND		0.50	µg/L
3	Vinyl chloride	ND	0.50	µg/L	38	Ethylbenzene	ND		0.50	µg/L
4	Chloroethane	ND	0.50	µg/L	39	m,p-Xylene	ND		0.50	µg/L
5	Bromomethane	ND	2.0	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	2.0	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		2.0	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		3.0	µg/L
25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND		2.0	µg/L
26	Bromodichloromethane	ND	0.50	µg/L	61	Naphthalene	ND	Q	2.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	µg/L	62	Hexachlorobutadiene	ND		2.0	µg/L
28	cis-1,3-Dichloropropene	ND	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND		2.0	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	108		(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						

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

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

Alpha Analytical Number: BMI10052101-03A
Client I.D. Number: EB-15-05/20/10

Sampled: 05/20/10 09:29
Received: 05/21/10
Extracted: 05/24/10 13:25
Analyzed: 05/24/10 13:25

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	2.0	µg/L	37	Chlorobenzene	ND		0.50	µg/L
3	Vinyl chloride	ND	0.50	µg/L	38	Ethylbenzene	ND		0.50	µg/L
4	Chloroethane	ND	0.50	µg/L	39	m,p-Xylene	ND		0.50	µg/L
5	Bromomethane	ND	2.0	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	2.0	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		2.0	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		3.0	µg/L
25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND		2.0	µg/L
26	Bromodichloromethane	ND	0.50	µg/L	61	Naphthalene	ND	Q	2.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	µg/L	62	Hexachlorobutadiene	ND		2.0	µg/L
28	cis-1,3-Dichloropropene	ND	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND		2.0	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	107		(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 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.

6/4/10
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: (818) 393-2808
Fax: (614) 458-6641

Alpha Analytical Number: BMI10052101-04A
Client I.D. Number: TB-15-05/20/10

Sampled: 05/20/10 07:00
Received: 05/21/10
Extracted: 05/24/10 13:02
Analyzed: 05/24/10 13:02

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	2.0	µg/L	37	Chlorobenzene	ND		0.50	µg/L
3	Vinyl chloride	ND	0.50	µg/L	38	Ethylbenzene	ND		0.50	µg/L
4	Chloroethane	ND	0.50	µg/L	39	m,p-Xylene	ND		0.50	µg/L
5	Bromomethane	ND	2.0	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	2.0	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		2.0	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		3.0	µg/L
25	Trichloroethene	ND	0.50	µg/L	60	1,2,4-Trichlorobenzene	ND		2.0	µg/L
26	Bromodichloromethane	ND	0.50	µg/L	61	Naphthalene	ND	Q	2.0	µg/L
27	4-Methyl-2-pentanone (MIBK)	ND	2.5	µg/L	62	Hexachlorobutadiene	ND		2.0	µg/L
28	cis-1,3-Dichloropropene	ND	0.50	µg/L	63	1,2,3-Trichlorobenzene	ND		2.0	µg/L
29	trans-1,3-Dichloropropene	ND	0.50	µg/L	64	Surr: 1,2-Dichloroethane-d4	103		(70-130)	%REC
30	1,1,2-Trichloroethane	ND	0.50	µg/L	65	Surr: Toluene-d8	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						

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.

6/4/10
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: BMI10052101 **Job:** G005862/JPL Groundwater Monitoring

Alpha's Sample ID	Client's Sample ID	Matrix	pH
10052101-01A	MW-26-2	Aqueous	2
10052101-02A	MW-26-1	Aqueous	2
10052101-03A	EB-15-05/20/10	Aqueous	2
10052101-04A	TB-15-05/20/10	Aqueous	2

6/4/10

Report Date

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Date: *02-Jun-10*

QC Summary Report

Work Order: 10052101

Method Blank

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

File ID: **22** Batch ID: **24312** Analysis Date: **05/21/2010 14:03**

Sample ID: **MB-24312** Units : **mg/L** Run ID: **IC_1_100521A** Prep Date: **05/21/2010 13:30**

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: **23** Batch ID: **24312** Analysis Date: **05/21/2010 14:21**

Sample ID: **LFB-24312** Units : **mg/L** Run ID: **IC_1_100521A** Prep Date: **05/21/2010 13:30**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	52.7	0.5	50		105	90	110			
Nitrite (NO2) - N	5.34	0.25	5		107	90	110			
Nitrate (NO3) - N	5.04	0.25	5		101	90	110			
Phosphate, ortho - P	5.4	0.5	5		108	90	110			
Sulfate (SO4)	107	0.5	100		107	90	110			

Sample Matrix Spike

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

File ID: **34** Batch ID: **24312** Analysis Date: **05/21/2010 17:45**

Sample ID: **10052101-01ALFM** Units : **mg/L** Run ID: **IC_1_100521A** Prep Date: **05/21/2010 13:30**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	121	0.5	100	13.51	107	80	120			
Nitrite (NO2) - N	10.5	0.25	10	0	105	80	120			
Nitrate (NO3) - N	10.8	0.25	10	0.6351	102	80	120			
Phosphate, ortho - P	9.64	0.5	10	0	96	80	120			
Sulfate (SO4)	215	0.5	200	16.21	99	80	120			

Sample Matrix Spike Duplicate

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

File ID: **35** Batch ID: **24312** Analysis Date: **05/21/2010 18:03**

Sample ID: **10052101-01ALFMD** Units : **mg/L** Run ID: **IC_1_100521A** Prep Date: **05/21/2010 13:30**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Chloride	121	0.5	100	13.51	107	80	120	120.8	0.0(15)	
Nitrite (NO2) - N	9.94	0.25	10	0	99	80	120	10.51	5.6(15)	
Nitrate (NO3) - N	10.8	0.25	10	0.6351	102	80	120	10.83	0.4(15)	
Phosphate, ortho - P	9.7	0.5	10	0	97	80	120	9.64	0.6(15)	
Sulfate (SO4)	214	0.5	200	16.21	99	80	120	214.6	0.3(15)	

Comments:

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

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Date: *02-Jun-10*

QC Summary Report

Work Order: 10052101

Method Blank

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

File ID: **15** Batch ID: **24319** Analysis Date: **05/24/2010 14:29**

Sample ID: **MB-24319** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

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: **16** Batch ID: **24319** Analysis Date: **05/24/2010 14:47**

Sample ID: **LFB-24319** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	22.6	2	25		91	85	115			

Sample Matrix Spike

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

File ID: **34** Batch ID: **24319** Analysis Date: **05/24/2010 20:18**

Sample ID: **10052001-03ALFM** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	36.6	2	25	10.32	105	80	120			

Sample Matrix Spike Duplicate

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

File ID: **35** Batch ID: **24319** Analysis Date: **05/24/2010 20:37**

Sample ID: **10052001-03ALFMD** Units : **µg/L** Run ID: **IC_3_100524A** Prep Date: **05/24/2010 11:13**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Perchlorate	38	2	25	10.32	111	80	120	36.58	3.7(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: *02-Jun-10*

QC Summary Report

Work Order: 10052101

Laboratory Control Spike Type **LCS** Test Code: **SM2320B**

File ID: Batch ID: **W0521ALA** Analysis Date: **05/21/2010 12:56**

Sample ID: **LCS-W0521ALA** Units : **mg/L** Run ID: **WETLAB_100521G** Prep Date: **05/21/2010 12:56**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Alkalinity, Bicarbonate (As CaCO3)	243.4	10	250		97	80	120			
Alkalinity, Carbonate (As CaCO3)	243.4	10	250		97	80	120			
Alkalinity, Total (As CaCO3 at pH 4.5)	243	10	250		97	80	120			

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: *02-Jun-10*

QC Summary Report

Work Order: 10052101

Method Blank

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

File ID: **052110.B\310MB.D** Batch ID: **24310K** Analysis Date: **05/22/2010 09:36**

Sample ID: **MB-24310** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	ND	0.5								
Magnesium (Mg)	ND	0.5								
Potassium (K)	ND	0.5								
Calcium (Ca)	ND	0.5								
Chromium (Cr)	ND	0.005								
Iron (Fe)	ND	0.1								
Arsenic (As)	ND	0.002								
Lead (Pb)	ND	0.005								

Laboratory Control Spike

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

File ID: **052110.B\006_LCS.D** Batch ID: **24310K** Analysis Date: **05/21/2010 16:01**

Sample ID: **LCS-24310** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	5.37	0.5	5		107	80	120			
Magnesium (Mg)	5.14	0.5	5		103	80	120			
Potassium (K)	5.02	0.5	5		100	80	120			
Calcium (Ca)	5.34	0.5	5		107	80	120			
Chromium (Cr)	0.051	0.005	0.05		102	80	120			
Iron (Fe)	5.2	0.2	5		104	80	120			
Arsenic (As)	0.0495	0.002	0.05		99	80	120			
Lead (Pb)	0.0475	0.005	0.05		95	80	120			

Sample Matrix Spike

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

File ID: **052110.B\002SMPL.D** Batch ID: **24310K** Analysis Date: **05/21/2010 16:22**

Sample ID: **10052001-03AMS** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	36.8	0.5	5	33.92	57	80	120			M3
Magnesium (Mg)	24.2	0.5	5	19.98	85	80	120			
Potassium (K)	7.3	0.5	5	2.573	95	80	120			
Calcium (Ca)	74.9	0.5	5	75.39	-9	80	120			M3
Chromium (Cr)	0.0496	0.005	0.05	0	99	80	120			
Iron (Fe)	5.04	0.2	5	0.3324	94	80	120			
Arsenic (As)	0.0493	0.002	0.05	0	99	80	120			
Lead (Pb)	0.0438	0.005	0.05	0	88	80	120			

Sample Matrix Spike Duplicate

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

File ID: **052110.B\003SMPL.D** Batch ID: **24310K** Analysis Date: **05/21/2010 16:27**

Sample ID: **10052001-03AMSD** Units : **mg/L** Run ID: **ICP/MS_100521A** Prep Date: **05/21/2010 11:39**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Sodium (Na)	37.6	0.5	5	33.92	74	80	120	36.75	2.4(20)	M3
Magnesium (Mg)	23.7	0.5	5	19.98	74	80	120	24.22	2.3(20)	M2
Potassium (K)	7.1	0.5	5	2.573	91	80	120	7.304	2.9(20)	
Calcium (Ca)	76	0.5	5	75.39	12	80	120	74.94	1.4(20)	M3
Chromium (Cr)	0.0514	0.005	0.05	0	103	80	120	0.04958	3.6(20)	
Iron (Fe)	5.26	0.2	5	0.3324	99	80	120	5.038	4.4(20)	
Arsenic (As)	0.0487	0.002	0.05	0	97	80	120	0.04928	1.2(20)	
Lead (Pb)	0.044	0.005	0.05	0	88	80	120	0.04378	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.

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

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to the spike level. The method control sample recovery was acceptable.

Alpha Analytical, Inc.

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Date: *02-Jun-10*

QC Summary Report

Work Order: 10052101

Laboratory Control Spike Type **LCS** Test Code: **EPA Method 150.2 / SM4500HB / SW9040C**

File ID: Batch ID: **W0521PH** Analysis Date: **05/21/2010 14:54**

Sample ID: **LCS-W0521PH** Units : **pH Units** Run ID: **WETLAB_100521C** Prep Date: **05/21/2010 14:54**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
pH	4.96	1.7	5		99	90	110			

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-Jun-10*

QC Summary Report

Work Order: 10052101

Method Blank

Type **MBLK** Test Code: **SM2540C**

File ID: Batch ID: **W0525DS** Analysis Date: **05/26/2010 00:00**

Sample ID: **MBLK-W0525DS** Units : **mg/L** Run ID: **WETLAB_100525A** Prep Date: **05/26/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	ND	10								

Laboratory Control Spike

Type **LCS** Test Code: **SM2540C**

File ID: Batch ID: **W0525DS** Analysis Date: **05/26/2010 00:00**

Sample ID: **LCS-W0525DS** Units : **mg/L** Run ID: **WETLAB_100525A** Prep Date: **05/26/2010 00:00**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Solids, Total Dissolved (TDS)	91	10	100		91	80	120			

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-Jun-10*

QC Summary Report

Work Order: 10052101

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

File ID: **10052407.D** Batch ID: **MS15W0524M** Analysis Date: **05/24/2010 10:26**

Sample ID: **MBLK MS15W0524M** Units : **µg/L** Run ID: **MSD_15_100524B** Prep Date: **05/24/2010 10:26**

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	9.6		10		96	70	130			
Surr: Toluene-d8	10.7		10		107	70	130			

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QC Summary Report

Work Order: 10052101

Surr: 4-Bromofluorobenzene	10.4		10		104	70	130			

Laboratory Control Spike Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **10052403.D** Batch ID: **MS15W0524M** Analysis Date: **05/24/2010 08:46**

Sample ID: **LCS MS15W0524M** Units : **µg/L** Run ID: **MSD_15_100524B** Prep Date: **05/24/2010 08:46**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	9.2	1	10		92	70	130			
Chloromethane	10.6	2	10		106	70	130			
Vinyl chloride	10.4	1	10		104	70	130			
Chloroethane	9.19	1	10		92	70	130			
Bromomethane	10.6	2	10		106	70	130			
Trichlorofluoromethane	8.84	1	10		88	70	130			
1,1-Dichloroethene	11.3	1	10		113	70	130			
Dichloromethane	9.54	2	10		95	70	130			
trans-1,2-Dichloroethene	11	1	10		110	70	130			
Methyl tert-butyl ether (MTBE)	9.08	0.5	10		91	70	130			
1,1-Dichloroethane	11	1	10		110	70	130			
cis-1,2-Dichloroethene	10.8	1	10		108	70	130			
Bromochloromethane	9.68	1	10		97	70	130			
Chloroform	10.7	1	10		107	70	130			
2,2-Dichloropropane	10.8	1	10		108	70	130			
1,2-Dichloroethane	9.95	1	10		100	70	130			
1,1,1-Trichloroethane	11.3	1	10		113	70	130			
1,1-Dichloropropene	11.8	1	10		118	70	130			
Carbon tetrachloride	10.8	1	10		108	70	130			
Benzene	10.8	0.5	10		108	70	130			
Dibromomethane	9.66	1	10		97	70	130			
1,2-Dichloropropane	10	1	10		100	70	130			
Trichloroethene	10.5	1	10		105	70	130			
Bromodichloromethane	10.3	1	10		103	70	130			
cis-1,3-Dichloropropene	10.5	1	10		105	70	130			
trans-1,3-Dichloropropene	10	1	10		100	70	130			
1,1,2-Trichloroethane	9.31	1	10		93	70	130			
Toluene	10.1	0.5	10		101	70	130			
1,3-Dichloropropane	9.14	1	10		91	70	130			
Dibromochloromethane	9.32	1	10		93	70	130			
1,2-Dibromoethane (EDB)	18.5	2	20		92	70	130			
Tetrachloroethene	10.4	1	10		104	70	130			
1,1,1,2-Tetrachloroethane	10	1	10		100	70	130			
Chlorobenzene	9.86	1	10		99	70	130			
Ethylbenzene	10.2	0.5	10		102	70	130			
m,p-Xylene	10.1	0.5	10		101	70	130			
Bromoform	8.82	1	10		88	70	130			
Styrene	10.4	1	10		104	70	130			
o-Xylene	9.99	0.5	10		99.9	70	130			
1,1,2,2-Tetrachloroethane	8.2	1	10		82	70	130			
1,2,3-Trichloropropane	16.6	2	20		83	70	130			
Isopropylbenzene	11.7	1	10		117	70	130			
Bromobenzene	10.8	1	10		108	70	130			
n-Propylbenzene	11.8	1	10		118	70	130			
4-Chlorotoluene	11.4	1	10		114	70	130			
2-Chlorotoluene	11.7	1	10		117	70	130			
1,3,5-Trimethylbenzene	12.2	1	10		122	70	130			
tert-Butylbenzene	11.3	1	10		113	70	130			
1,2,4-Trimethylbenzene	11.9	1	10		119	70	130			
sec-Butylbenzene	11.2	1	10		112	70	130			
1,3-Dichlorobenzene	10.8	1	10		108	70	130			
1,4-Dichlorobenzene	10.2	1	10		102	70	130			
4-Isopropyltoluene	11.8	1	10		118	70	130			
1,2-Dichlorobenzene	9.87	1	10		99	70	130			
n-Butylbenzene	12.1	1	10		121	70	130			
1,2-Dibromo-3-chloropropane (DBCP)	43.6	3	50		87	70	130			
1,2,4-Trichlorobenzene	9.37	2	10		94	70	130			
Naphthalene	6.1	2	10		61	70(70)	130			L50
Hexachlorobutadiene	19.9	2	20		99	70	130			
1,2,3-Trichlorobenzene	8.17	2	10		82	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10		91	70	130			
Surr: Toluene-d8	9.76		10		98	70	130			
Surr: 4-Bromofluorobenzene	10.5		10		105	70	130			

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10052101

Sample Matrix Spike Type **MS** Test Code: **EPA Method SW8260B**

File ID: **10052411.D** Batch ID: **MS15W0524M** Analysis Date: **05/24/2010 11:55**

Sample ID: **10052101-01AMS** Units : **µg/L** Run ID: **MSD_15_100524B** Prep Date: **05/24/2010 11:55**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	31.1	2.5	50	0	62	13	167			
Chloromethane	39.9	10	50	0	80	28	145			
Vinyl chloride	41.5	2.5	50	0	83	43	134			
Chloroethane	36.8	2.5	50	0	74	39	154			
Bromomethane	48	10	50	0	96	19	176			
Trichlorofluoromethane	37	2.5	50	0	74	34	160			
1,1-Dichloroethene	47.8	2.5	50	0	96	60	130			
Dichloromethane	44.3	10	50	0	89	68	130			
trans-1,2-Dichloroethene	48.5	2.5	50	0	97	63	130			
Methyl tert-butyl ether (MTBE)	48.6	1.3	50	0	97	56	141			
1,1-Dichloroethane	48.9	2.5	50	0	98	61	130			
cis-1,2-Dichloroethene	47.4	2.5	50	0	95	70	130			
Bromochloromethane	46.3	2.5	50	0	93	70	130			
Chloroform	46.3	2.5	50	0	93	67	130			
2,2-Dichloropropane	36.1	2.5	50	0	72	30	152			
1,2-Dichloroethane	49.4	2.5	50	0	99	60	135			
1,1,1-Trichloroethane	49.7	2.5	50	0	99	59	137			
1,1-Dichloropropene	51.2	2.5	50	0	102	63	130			
Carbon tetrachloride	47.2	2.5	50	0	94	50	147			
Benzene	47.3	1.3	50	0	95	67	130			
Dibromomethane	48.4	2.5	50	0	97	69	133			
1,2-Dichloropropane	45.6	2.5	50	0	91	69	130			
Trichloroethene	45.1	2.5	50	0	90	69	130			
Bromodichloromethane	46.8	2.5	50	0	94	66	134			
cis-1,3-Dichloropropene	46.4	2.5	50	0	93	63	130			
trans-1,3-Dichloropropene	47.1	2.5	50	0	94	66	131			
1,1,2-Trichloroethane	48.8	2.5	50	0	98	68	130			
Toluene	43.7	1.3	50	0	87	66	130			
1,3-Dichloropropane	45.8	2.5	50	0	92	70	130			
Dibromochloromethane	46.4	2.5	50	0	93	70	130			
1,2-Dibromoethane (EDB)	91.3	5	100	0	91	70	130			
Tetrachloroethene	44.1	2.5	50	0	88	61	134			
1,1,1,2-Tetrachloroethane	45.5	2.5	50	0	91	70	130			
Chlorobenzene	44	2.5	50	0	88	70	130			
Ethylbenzene	44	1.3	50	0	88	68	130			
m,p-Xylene	43.7	1.3	50	0	87	64	130			
Bromoform	45.7	2.5	50	0	91	64	138			
Styrene	47.1	2.5	50	0	94	69	130			
o-Xylene	43.8	1.3	50	0	88	70	130			
1,1,2,2-Tetrachloroethane	45.5	2.5	50	0	91	65	131			
1,2,3-Trichloropropane	90.3	10	100	0	90	70	130			
Isopropylbenzene	48	2.5	50	0	96	64	138			
Bromobenzene	47.7	2.5	50	0	95	70	130			
n-Propylbenzene	49.7	2.5	50	0	99	66	132			
4-Chlorotoluene	48.2	2.5	50	0	96	70	130			
2-Chlorotoluene	48.9	2.5	50	0	98	70	130			
1,3,5-Trimethylbenzene	50.5	2.5	50	0	101	66	136			
tert-Butylbenzene	48	2.5	50	0	96	65	137			
1,2,4-Trimethylbenzene	50.7	2.5	50	0	101	65	137			
sec-Butylbenzene	48.4	2.5	50	0	97	66	134			
1,3-Dichlorobenzene	48.6	2.5	50	0	97	70	130			
1,4-Dichlorobenzene	46.2	2.5	50	0	92	70	130			
4-Isopropyltoluene	50.2	2.5	50	0	100	66	137			
1,2-Dichlorobenzene	46.9	2.5	50	0	94	70	130			
n-Butylbenzene	53.3	2.5	50	0	107	60	142			
1,2-Dibromo-3-chloropropane (DBCP)	245	15	250	0	98	67	130			
1,2,4-Trichlorobenzene	51.4	10	50	0	103	61	137			
Naphthalene	44.6	10	50	0	89	40	167			
Hexachlorobutadiene	98.5	10	100	0	99	61	130			
1,2,3-Trichlorobenzene	48.4	10	50	0	97	51	144			
Surr: 1,2-Dichloroethane-d4	49.3		50		99	70	130			
Surr: Toluene-d8	48		50		96	70	130			
Surr: 4-Bromofluorobenzene	51.9		50		104	70	130			

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Date: 01-Jun-10

QC Summary Report

Work Order: 10052101

Sample Matrix Spike Duplicate Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **10052412.D** Batch ID: **MS15W0524M** Analysis Date: **05/24/2010 12:18**

Sample ID: **10052101-01AMSD** Units : **µg/L** Run ID: **MSD_15_100524B** Prep Date: **05/24/2010 12:18**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Dichlorodifluoromethane	31.1	2.5	50	0	62	13	167	31.09	0.1(20)	
Chloromethane	39.4	10	50	0	79	28	145	39.88	1.2(20)	
Vinyl chloride	41.5	2.5	50	0	83	43	134	41.53	0.0(20)	
Chloroethane	36.5	2.5	50	0	73	39	154	36.76	0.8(20)	
Bromomethane	48.1	10	50	0	96	19	176	47.99	0.2(20)	
Trichlorofluoromethane	36.5	2.5	50	0	73	34	160	37.03	1.4(20)	
1,1-Dichloroethene	48.3	2.5	50	0	97	60	130	47.78	1.1(20)	
Dichloromethane	45.4	10	50	0	91	68	130	44.34	2.4(20)	
trans-1,2-Dichloroethene	48.5	2.5	50	0	97	63	130	48.48	0.1(20)	
Methyl tert-butyl ether (MTBE)	50.9	1.3	50	0	102	56	141	48.55	4.7(20)	
1,1-Dichloroethane	49.5	2.5	50	0	99	61	130	48.91	1.1(20)	
cis-1,2-Dichloroethene	46.1	2.5	50	0	92	70	130	47.39	2.8(20)	
Bromochloromethane	46.9	2.5	50	0	94	70	130	46.27	1.4(20)	
Chloroform	47.9	2.5	50	0	96	67	130	46.31	3.5(20)	
2,2-Dichloropropane	37.6	2.5	50	0	75	30	152	36.06	4.2(20)	
1,2-Dichloroethane	51.6	2.5	50	0	103	60	135	49.44	4.3(20)	
1,1,1-Trichloroethane	49.3	2.5	50	0	99	59	137	49.7	0.7(20)	
1,1-Dichloropropene	51.4	2.5	50	0	103	63	130	51.16	0.5(20)	
Carbon tetrachloride	47.4	2.5	50	0	95	50	147	47.15	0.6(20)	
Benzene	48.1	1.3	50	0	96	67	130	47.34	1.7(20)	
Dibromomethane	51	2.5	50	0	102	69	133	48.41	5.2(20)	
1,2-Dichloropropane	46.7	2.5	50	0	93	69	130	45.57	2.5(20)	
Trichloroethene	45.4	2.5	50	0	91	69	130	45.06	0.7(20)	
Bromodichloromethane	49.7	2.5	50	0	99	66	134	46.81	6.1(20)	
cis-1,3-Dichloropropene	47.9	2.5	50	0	96	63	130	46.42	3.0(20)	
trans-1,3-Dichloropropene	50.1	2.5	50	0	100	66	131	47.14	6.0(20)	
1,1,2-Trichloroethane	49.2	2.5	50	0	98	68	130	48.8	0.8(20)	
Toluene	43.8	1.3	50	0	88	66	130	43.71	0.1(20)	
1,3-Dichloropropane	48	2.5	50	0	96	70	130	45.77	4.8(20)	
Dibromochloromethane	48.1	2.5	50	0	96	70	130	46.44	3.6(20)	
1,2-Dibromoethane (EDB)	96.3	5	100	0	96	70	130	91.33	5.3(20)	
Tetrachloroethene	44	2.5	50	0	88	61	134	44.14	0.3(20)	
1,1,1,2-Tetrachloroethane	46.8	2.5	50	0	94	70	130	45.49	2.9(20)	
Chlorobenzene	44.4	2.5	50	0	89	70	130	43.96	0.9(20)	
Ethylbenzene	44.4	1.3	50	0	89	68	130	43.99	0.8(20)	
m,p-Xylene	43.3	1.3	50	0	87	64	130	43.68	0.8(20)	
Bromoform	48	2.5	50	0	96	64	138	45.72	4.8(20)	
Styrene	48	2.5	50	0	96	69	130	47.05	2.0(20)	
o-Xylene	43.9	1.3	50	0	88	70	130	43.79	0.3(20)	
1,1,2,2-Tetrachloroethane	48	2.5	50	0	96	65	131	45.48	5.3(20)	
1,2,3-Trichloropropane	91.7	10	100	0	92	70	130	90.34	1.5(20)	
Isopropylbenzene	48.2	2.5	50	0	96	64	138	48.03	0.4(20)	
Bromobenzene	49	2.5	50	0	98	70	130	47.71	2.6(20)	
n-Propylbenzene	49.9	2.5	50	0	99.8	66	132	49.74	0.3(20)	
4-Chlorotoluene	49.3	2.5	50	0	99	70	130	48.21	2.3(20)	
2-Chlorotoluene	49.2	2.5	50	0	98	70	130	48.94	0.6(20)	
1,3,5-Trimethylbenzene	51.1	2.5	50	0	102	66	136	50.52	1.1(20)	
tert-Butylbenzene	48.2	2.5	50	0	96	65	137	48.01	0.3(20)	
1,2,4-Trimethylbenzene	50.9	2.5	50	0	102	65	137	50.7	0.4(20)	
sec-Butylbenzene	47.5	2.5	50	0	95	66	134	48.35	1.7(20)	
1,3-Dichlorobenzene	49	2.5	50	0	98	70	130	48.58	0.9(20)	
1,4-Dichlorobenzene	46.6	2.5	50	0	93	70	130	46.15	0.9(20)	
4-Isopropyltoluene	50.1	2.5	50	0	100	66	137	50.2	0.2(20)	
1,2-Dichlorobenzene	47.3	2.5	50	0	95	70	130	46.86	0.9(20)	
n-Butylbenzene	53	2.5	50	0	106	60	142	53.32	0.7(20)	
1,2-Dibromo-3-chloropropane (DBCP)	260	15	250	0	104	67	130	245.3	5.7(20)	
1,2,4-Trichlorobenzene	52.7	10	50	0	105	61	137	51.36	2.5(20)	
Naphthalene	46.3	10	50	0	93	40	167	44.63	3.6(20)	
Hexachlorobutadiene	97.8	10	100	0	98	61	130	98.5	0.7(20)	
1,2,3-Trichlorobenzene	50.2	10	50	0	100	51	144	48.36	3.7(20)	
Surr: 1,2-Dichloroethane-d4	50.3		50		101	70	130			
Surr: Toluene-d8	48.2		50		96	70	130			
Surr: 4-Bromofluorobenzene	52.3		50		105	70	130			

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Date: *01-Jun-10*

QC Summary Report

Work Order: 10052101

Comments:

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

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

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

Billing Information :

CHAIN-OF-CUSTODY RECORD

CA

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

WorkOrder : BMIS10052101

Report Due By : 5:00 PM On : 07-Jun-2010

Client:
Battelle Memorial Institute
3990 Old Town Ave
Suite C-205
San Diego, CA 92110

Report Attention	Phone Number	EMail Address
David Conner	(818) 393-2808 x	connerd@battelle.org
Shane Walton	(614) 424-4117 x	waltons@battelle.org
Betsy Cutie	(614) 424-4899 x	cutiee@batelle.org

EDD Required : **Yes**

Sampled by : Chase Brogdon

PO : 218013

Client's COC # : 28936 Job : G005862/JPL Groundwater Monitoring

Cooler Temp	Samples Received	Date Printed
4 °C	21-May-2010	21-May-2010

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

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests 300_0_W	314_W	ALKALINITY_W	METALS_DW	PH_W	TDS_W	VOC_TIC_W	VOC_W	Sample Remarks
BMI10052101-01A	MW-26-2	AQ	05/20/10 08:41	10	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	MS/MSD
BMI10052101-02A	MW-26-1	AQ	05/20/10 09:53	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10052101-03A	EB-15-05/20/10	AQ	05/20/10 09:29	5	0	10	NO2, NO3, SO4, Cl, PO4	Perchlorate	Alk (Bicarb, Carb, Total)	Cr, Pb, As, Na, K, Ca, Mg, Fe	pH	TDS	VOC by 524 Criteria	VOC by 524 Criteria	
BMI10052101-04A	TB-15-05/20/10	AQ	05/20/10 07:00	1	0	10							VOC by 524 Criteria	VOC by 524 Criteria	Reno Trip Blank 3/10/10

Comments: Security seals intact. Frozen ice. Temp Blank #8485 received @ 4°C. Level IV QC. Samples should be used as the control spike sample if possible (I.E.: MS/MSD). :

	Signature	Print Name	Company	Date/Time
Logged in by:	Elizabeth Adcox	Elizabeth Adcox	**Alpha Analytical, Inc.**	5.21.10 9:41

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:

Name GERALD TOMPKINS / BATTELLE
Address 505 KING 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 X NV ___ WA ___ ID ___ OR ___ OTHER ___

28936

Page # 1 of 1

Client Name: BATTELLE / DAVID CONNER
Address: 3990 OLD TOWN AVE, C-205
City, State, Zip: SAN DIEGO CA 92110
P.O. # 218013
Job # 6005862
EMail Address
Phone # (619) 726-7311
Fax #

Required QC Level? I II III IV

EDD / EDF? YES ___ NO ___

Global ID # _____

Sampled by: CHASE BRADDON

Time Sampled	Date Sampled	Matrix* See Key Below	Lab ID Number (Office Use Only)	Sample Description	TAT	Field Filtered	Total and type of containers ** See below	VOC (524.2)	TOTAL CR, LEAD	ARSENIC (200.8)	GEN. CHEM. (Na, K, Ca, Mg, Fe) (200.7)	ClO4 - (314.0)	GEN. CHEM. (300.0, 310.1, 160.1, 150.1)			REMARKS
0841 (WB 0953)	5/20/10	AQ	BMI1005210 1-01	MW-26-2	NORM		10	X	X	X	X	X	X			MS/MSD
~~0922~~			-02	MW-26-1			5	X	X	X	X	X	X			
0929			-03	EB-15-05/20/10			5	X	X	X	X	X	X			EQUIPMENT BLANK
0700			-04	TB-15-05/20/10			1	X								TRIP BLANK

ADDITIONAL INSTRUCTIONS:

	Signature	Print Name	Company	Date	Time
Relinquished by		CHASE BRADDON	INSIGHT E.E.C., INC	5/20/10	1230
Received by		Anthony Stark	Alpha Analytical	5/20/10	1230
Relinquished by		Anthony Stark	Alpha Analytical	5/20/10	1230
Received by	Elizabeth Adcox	Elizabeth Adcox	Alpha	5.21.10	9:41
Relinquished by					
Received by					

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

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

CAS SR #P1001555

Table of Contents

Columbia Analytical Services, Inc. 2655 Park Center Drive, Suite A | Simi Valley, CA 93065 | 805.526.7161 | 805.526.7270 fax | www.caslab.com

LABORATORY REPORT

May 10, 2010

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL-GW-2Q10 / G005862/JPL GWM

Dear David:

Enclosed are the results of the sample submitted to our laboratory on May 4, 2010. For your reference, this analysis has been assigned our service request number P1001555.

All analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 26 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L10-3; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-09-TX; Minnesota Department of Health, Certificate No. 11495AA. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson
Project Manager

Client: Battelle
Project: JPL-GW-2Q10 / G005862/JPL GWM

CAS Project No: P1001555

CASE NARRATIVE

The samples were received intact under chain of custody on May 4, 2010 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl *tert*-Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 19th Ed., 1995.
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001555

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
P1001555-001	MW-6	5/4/10	10:34

4

Water & Soil - Chain of Custody Record & Analytical Service Request

Page 1 of 1

Columbia Analytical Services INC.
An Employee - Owned Company

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day - Standard)

CAS Project No.: P1001555

CAS Contact:

Company Name & Address (Reporting Information)	Project Name	Project Number	Project Manager	P.O. # / Billing Information	Phone	Fax	Email Address for Result Reporting	Sampler (Print & Sign)
Battelle 505 King Ave Columbus OH 43201	JPL-GW-2Q10	60058621JPL GWM	David Conner	214375/Battelle ATTN: Jerry Tompkins	614 726-3811	614 458-6641	connerd@battelle.org	

Analysis Method and/or Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Volatile Organics GC/MS 624 ☐ 8260B ☐ Oxygenates ☐ TPH Gas ☐	TPH Gas 8015B ☐ BTEX 8021B ☐ MTBE 8021B ☐	TPH Diesel 8015B ☐ (Subcontracted)	TPH Diesel Low Level 8015B ☐ (Subcontracted)	TPH FC ☐ 8015M (Subcontracted)	Semi-Volatile Organics GC/MS 625 ☐ 8270C ☐ (Subcontracted)	Preservative Code: Hexavalent Cr (7196A)	Remarks
MW-6	1	5/4/10	1034	AQ	1P							X	
MW-6-MS	2	5/4/10	1036	AQ	1P							X	
MW-6-MSD	3	5/4/10	1038	AQ	1P							X	

Preservative Key

0	None
1	HCL
2	HNO3
3	H2SO4
4	NaOH
5	Zn Acetate
6	Asc Acid
7	Other

Report Tier Levels - please select

Tier I - (Results/Default if not specified) ____
Tier II - (Results + QC) ____
Tier III - (Data Validation Package) 10% Surcharge X
Tier V - (client specified) ____

MRL required Yes / No
MDL / PQL / J required Yes / No

EDD required Yes / No
Type: _____

Project Requirements (MRLs, QAPP)

	Date	Time		Date	Time
Relinquished by: (Signature) David Conner	5/4/10	1200	Received by: (Signature)	5/4/10	1201
Relinquished by: (Signature)	5/4/10	1300	Received by: (Signature)	5/4/10	1350
Relinquished by: (Signature)	5/4/10		Received by: (Signature)		

Cooler / Blank / Ice / No Ice

Temperature 4 °C

Columbia Analytical Services, Inc.
Chain of Custody Report

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001555

Bottle ID	Tests	Date	Time	Sample Location / User	Disposed On
P1001555-001.01					
	7196A				
		5/4/10	1609	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1553	P-37 / SANDERSON	
P1001555-001.02					
		5/4/10	1615	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1553	P-37 / SANDERSON	
P1001555-001.03					
		5/4/10	1615	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1553	P-37 / SANDERSON	

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Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: Battelle Work order: P1001555

Project: JPL-GW-2Q10 / G005862/JPL GWM

Sample(s) received on: 5/4/2010 Date opened: 5/4/2010 by: SSTAPLES

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Was a **chain-of-custody** provided?	☒	☐	☐
5	Was the **chain-of-custody** properly completed?	☒	☐	☐
6	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
7	Was **sample volume** received adequate for analysis?	☒	☐	☐
8	Are samples within specified holding times?	☒	☐	☐
9	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature _____ °C Blank Temperature 4 °C			
10	Was a **trip blank** received?	☐	☐	☒
	Trip blank supplied by CAS: _____			
11	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
12	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
13	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
14	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1001555-001.01	125mL Plastic NP					
P1001555-001.02	125mL Plastic NP					Marked MS collected @ 1036
P1001555-001.03	125mL Plastic NP					Marked MSD collected @ 1038

Explain any discrepancies: (include lab sample ID numbers):

Two additional bottles supplied for MS/MSD as noted above. Sample -001 used for sample as well as MS/MSD; 3 bottles not necessary to be able to run matrix spikes.

*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12); Diss. Sulfide, NaOH (pH>12); T. Sulfide, NaOH/ZnAc (pH>12) RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL-GW-2Q10
Project Number : G005862/JPL GWM
Sample Matrix : WATER

Service Request : P1001555
Date Collected : 05/04/10
Date Received : 05/04/10

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-6	P1001555-001	0.010	0.004	1	NA	05/04/10 17:15	ND	
Method Blank	P1001555-MB	0.010	0.004	1	NA	05/04/10 17:15	ND	

Approved By Karen Rya Date : 5/5/10

Report By:SAnderson

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Battelle
Project: JPL-GW-2Q10 / G005862/JPL GWM

Service Request: P1001555
Date Analyzed: 05/04/10

Title: Initial and Continuing Calibration Blank (ICB and CCB) Summary
Analyte: Chromium, Hexavalent
Method: 7196A
Units: mg/L (ppm)

Sample Name	PQL	MDL	Result
ICB	0.010	0.004	ND
CCB1	0.010	0.004	ND
CCB2	0.010	0.004	ND

Approved By: Karen Ryan Date: 5/5/10

ICCBMDL/120594

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Battelle
Project: JPL-GW-2Q10 / G005862/JPL GWM

Service Request: P1001555
Date Analyzed: 05/04/10

Title: Initial and Continuing Calibration Verification (ICV and CCV) Summary
Analyte: Chromium, Hexavalent
Method: 7196A
Units: mg/L (ppm)

Sample Name	True Value	Result	Percent Recovery	Acceptance Criteria
ICV	0.0579	0.0577	100	90-110
CCV1	0.0579	0.0566	98	90-110
CCV2	0.0579	0.0566	98	90-110

Approved By: Karen Ryan Date: 5/5/10

CCV1A/120594

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Battelle	**Service Request :**	P1001555
Project Name :	JPL-GW-2Q10	**Date Collected :**	NA
Project Number :	G005862/JPL GWM	**Date Received :**	NA
Sample Matrix :	WATER	**Date Extracted :**	NA
		Date Analyzed :	05/04/10

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	mg/L (ppm)
Lab Code :	P1001555-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chromium, Hexavalent	None	7196A	0.0400	0.0379	95	90-109	

Approved By Karen Ryan Date : 5/5/10

Report By:SAnderson

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Battelle	**Service Request :**	P1001555
Project Name :	JPL-GW-2Q10	**Date Collected :**	05/04/10
Project Number :	G005862/JPL GWM	**Date Received :**	05/04/10
Sample Matrix :	WATER	**Date Extracted :**	NA
		Date Analyzed :	05/04/10

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	MW-6		Units :	mg/L (ppm)
Lab Code :	P1001555-001MS	P1001555-001DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	PQL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Chromium, Hexavalent	None	7196A	0.010	0.0500	0.0500	ND	0.0514	0.0514	103	103	78-112	<1	

Approved By Karen Ryan Date : 5/5/10

Report By:SAnderson

CAS SR #P1001554

Table of Contents

Columbia Analytical Services, Inc. 2655 Park Center Drive, Suite A | Simi Valley, CA 93065 | 805.526.7161 | 805.526.7270 fax | www.caslab.com

LABORATORY REPORT

May 10, 2010

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL GW Mon. 2Q10 / G486090

Dear David:

Enclosed are the results of the samples submitted to our laboratory on May 4, 2010. For your reference, these analyses have been assigned our service request number P1001554.

All analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 27 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L10-3; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-09-TX; Minnesota Department of Health, Certificate No. 11495AA. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson
Project Manager

Client: Battelle
Project: JPL GW Mon. 2Q10 / G486090

CAS Project No: P1001554

CASE NARRATIVE

The samples were received intact under chain of custody on May 4, 2010 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl *tert*-Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 19th Ed., 1995.
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Client: Battelle
Project: JPL GW Mon. 2Q10/G486090

Service Request: P1001554

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
P1001554-001	MW-12-5	5/4/10	08:27
P1001554-002	MW-12-4	5/4/10	09:06
P1001554-003	MW-12-3	5/4/10	10:05
P1001554-004	MW-12-2	5/4/10	10:42
P1001554-005	MW-12-1	5/4/10	11:37
P1001554-006	DUPE-03-2Q10	5/4/10	00:00
P1001554-007	EB-05-05/04/10	5/4/10	11:21

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Water & Soil - Chain of Custody Record & Analytical Service Request

Page 1 of 1

Columbia Analytical Services INC.
An Employee - Owned Company

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

CAS Project No: P100554

CAS Contact:

Company Name & Address (Reporting Information)	Project Name	Project Manager	Phone	Fax
BATTELLE 3990 OLD TOWN AVE, C-205 SAN DIEGO, CA 92110	JPL GW MON. 2Q10 Project Number: G486090	DAVID CONNER	(619)726 7311	

P.O. # / Billing Information: 214319 / BATTELLE ATTN: GERALD TOMPKINS 505 KING AVE. COLUMBUS, OH 43201

Email Address for Result Reporting:

Sampler (Print & Sign):

Analysis Method and/or Analytes

Preservative Code

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Volatile Organics GC/MS 624 ☐ 8260B ☐ Oxygenates ☐ TPH Gas ☐	TPH Gas 8015B ☐ BTEX 8021B ☐ MTBE 8021B ☐	TPH Diesel 8015B ☐ (Subcontracted) TPH Diesel Low Level 8015B ☐ (Subcontracted)	TPH FC ☐ 8015M (Subcontracted)	Semi-Volatile Organics GC/MS 625 ☐ 8270C ☐ (Subcontracted)	0 CR VI (7196)	Remarks
MW-12-5	1	05/04/10	0827	W	1						X	
MW-12-4	2		0906		2						X	MS/MSD-LEVEL III QC
MW-12-3	3		1005		1						X	
MW-12-2	4		1042		1						X	
MW-12-1	5		1137		1						X	
DUPE-03-2Q10	6		-"-		1						X	DUPLICATE BLANK
EB-05-05/04/10	7		1121		1						X	EQUIPMENT BLANK.

Preservative Key

0	None
1	HCL
2	HNO3
3	H2SO4
4	NaOH
5	Zn Acetate
6	Asc Acid
7	Other

Report Tier Levels - please select

Tier I - (Results/Default if not specified) ____
Tier II - (Results + QC) ____
Tier III - (Data Validation Package) 10% Surcharge ____
Tier V - (client specified) ____

MRL required Yes / No
MDL / PQL / J required Yes / No

EDD required Yes / No
Type: ____

Project Requirements (MRLs, QAPP)

	Date	Time		Date	Time
Relinquished by: (Signature)	05/04/10	1500	Received by: (Signature)	5/4/10	1500
Relinquished by: (Signature)	5/4/10	1535	Received by: (Signature)	05/04/10	1535
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Cooler / Blank / Ice / No Ice

Temperature 4 °C

Columbia Analytical Services, Inc.
Chain of Custody Report

Client: Battelle
Project: JPL GW Mon. 2Q10/G486090

Service Request: P1001554

Bottle ID	Tests	Date	Time	Sample Location / User	Disposed On
P1001554-001.01					
	7196A				
		5/4/10	1558	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	
P1001554-002.01					
	7196A				
		5/4/10	1558	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	
P1001554-002.02					
		5/4/10	1559	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	
P1001554-003.01					
	7196A				
		5/4/10	1558	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	
P1001554-004.01					
	7196A				
		5/4/10	1558	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	
P1001554-005.01					
	7196A				
		5/4/10	1558	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	
P1001554-006.01					
	7196A				
		5/4/10	1558	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	
P1001554-007.01					
	7196A				
		5/4/10	1558	SMO / SSTAPLES	
		5/4/10	1620	In Lab / SANDERSON	
		5/5/10	1552	P-37 / SANDERSON	

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Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: Battelle Work order: P1001554

Project: JPL GW Mon. 2Q10 / G486090

Sample(s) received on: 5/4/2010 Date opened: 5/4/2010 by: SSTAPLES

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Was a **chain-of-custody** provided?	☒	☐	☐
5	Was the **chain-of-custody** properly completed?	☒	☐	☐
6	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
7	Was **sample volume** received adequate for analysis?	☒	☐	☐
8	Are samples within specified holding times?	☒	☐	☐
9	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature _____ °C Blank Temperature 4 °C			
10	Was a **trip blank** received?	☐	☐	☒
	Trip blank supplied by CAS: _____			
11	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
12	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
13	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
14	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1001554-001.01	125mL Plastic NP					
P1001554-002.01	125mL Plastic NP					
P1001554-002.02	125mL Plastic NP					
P1001554-003.01	125mL Plastic NP					
P1001554-004.01	125mL Plastic NP					

Explain any discrepancies: (include lab sample ID numbers): _____

*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12); Diss. Sulfide, NaOH (pH>12); T. Sulfide, NaOH/ZnAc (pH>12) RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: Battelle Work order: P1001554

Project: JPL GW Mon. 2Q10 / G486090

Sample(s) received on: 5/4/2010 Date opened: 5/4/2010 by: SSTAPLES

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1001554-005.01	125mL Plastic NP					
P1001554-006.01	125mL Plastic NP					
P1001554-007.01	125mL Plastic NP					

Explain any discrepancies: (include lab sample ID numbers):

*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12); Diss. Sulfide, NaOH (pH>12); T. Sulfide, NaOH/ZnAc (pH>12) RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL GW Mon. 2Q10
Project Number : G486090
Sample Matrix : WATER

Service Request : P1001554
Date Collected : 05/04/10
Date Received : 05/04/10

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-12-5	P1001554-001	0.010	0.004	1	NA	05/04/10 17:15	ND	
MW-12-4	P1001554-002	0.010	0.004	1	NA	05/04/10 17:15	ND	
MW-12-3	P1001554-003	0.010	0.004	1	NA	05/04/10 17:15	ND	
MW-12-2	P1001554-004	0.010	0.004	1	NA	05/04/10 17:15	ND	
MW-12-1	P1001554-005	0.010	0.004	1	NA	05/04/10 17:15	ND	
DUPE-03-2Q10	P1001554-006	0.010	0.004	1	NA	05/04/10 17:15	ND	
EB-05-05/04/10	P1001554-007	0.010	0.004	1	NA	05/04/10 17:15	ND	
Method Blank	P1001554-MB	0.010	0.004	1	NA	05/04/10 17:15	ND	

Approved By Karen Ryan Date : 5/5/10

Report By:SAnderson

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Battelle	**Service Request:**	P1001554
Project:	JPL GW Mon. 2Q10 / G486090	**Date Analyzed:**	05/04/10

Title: Initial and Continuing Calibration Blank (ICB and CCB) Summary
Analyte: Chromium, Hexavalent
Method: 7196A
Units: mg/L (ppm)

Sample Name	PQL	MDL	Result
ICB	0.010	0.004	ND
CCB1	0.010	0.004	ND
CCB2	0.010	0.004	ND

Approved By: Karen Rya Date: 5/5/10

ICCBMDL/120594

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Battelle
Project: JPL GW Mon. 2Q10 / G486090

Service Request: P1001554
Date Analyzed: 05/04/10

Title: Initial and Continuing Calibration Verification (ICV and CCV) Summary
Analyte: Chromium, Hexavalent
Method: 7196A
Units: mg/L (ppm)

Sample Name	True Value	Result	Percent Recovery	Acceptance Criteria
ICV	0.0579	0.0577	100	90-110
CCV1	0.0579	0.0566	98	90-110
CCV2	0.0579	0.0566	98	90-110

Approved By: Karen Ryan Date: 5/5/10

CCV1A/120594

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Battelle	**Service Request :**	P1001554
Project Name :	JPL GW Mon. 2Q10	**Date Collected :**	NA
Project Number :	G486090	**Date Received :**	NA
Sample Matrix :	WATER	**Date Extracted :**	NA
		Date Analyzed :	05/04/10

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	mg/L (ppm)
Lab Code :	P1001554-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chromium, Hexavalent	None	7196A	0.0400	0.0379	95	90-109	

Approved By Karen Ryan Date : 5/5/10

Report By:SAnderson

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Battelle	**Service Request :**	P1001554
Project Name :	JPL GW Mon. 2Q10	**Date Collected :**	05/04/10
Project Number :	G486090	**Date Received :**	05/04/10
Sample Matrix :	WATER	**Date Extracted :**	NA
		Date Analyzed :	05/04/10

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name : MW-12-4
Lab Code : P1001554-002MS P1001554-002DMS
Test Notes :

Units : mg/L (ppm)
Basis : NA

Analyte	Prep Method	Analysis Method	PQL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Chromium, Hexavalent	None	7196A	0.010	0.0500	0.0500	ND	0.0473	0.0462	95	92	78-112	2	

Approved By Kara Ryan Date : 5/5/10

Report By:SAnderson

CAS SR #P1001540

Table of Contents

Columbia Analytical Services, Inc. 2655 Park Center Drive, Suite A | Simi Valley, CA 93065 | 805.526.7161 | 805.526.7270 fax | www.caslab.com

LABORATORY REPORT

June 3, 2010

David Conner
Battelle
3990 Old Town Ave., Suite C-205
San Diego, CA 92110

RE: JPL-GW-2Q10 / G005862/JPL GWM

Dear David:

Enclosed are the results of the sample submitted to our laboratory on May 3, 2010. The sample was sent out for partial analysis to our Kelso fiacility. Please find their report attached. For your reference, these analyses have been assigned our service request number P1001540.

All analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 292 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP), Certificate No. L10-3; Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-09-TX; Minnesota Department of Health, Certificate No. 11495AA. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson
Project Manager

Client: Battelle
Project: JPL-GW-2Q10 / G005862/JPL GWM

CAS Project No: P1001540

CASE NARRATIVE

The sample was received intact under chain of custody on May 3, 2010 and was stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the sample at the time of sample receipt.

Hexavalent Chromium by EPA Method 7196A

No anomalies were encountered during this analysis.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Acronyms

CA LUFT	California DHS LUFT Method
ASTM	American Society for Testing and Materials
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CRDL	Contract Required Detection Limit
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOH or DHS	Department of Health Services
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified Method
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl *tert*-Butyl Ether
NA	Not Applicable
NC	Not Calculated
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 19th Ed., 1995.
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)
VOC	Volatile Organic Compound(s)

Qualifiers

U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
J	The result is an estimated concentration that is less than the MRL (PQL), but greater than or equal to the MDL.
B	Analyte detected in the method blank above MRL (PQL).
E	Estimated; result based on response which exceeded the instrument calibration range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
D	The reported result is from a dilution.
X	See case narrative.

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
P1001540-001	MW-13	5/3/10	10:08

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Water & Soil - Chain of Custody Record & Analytical Service Request

Page 1 of 1

Columbia Analytical Services INC.
An Employee - Owned Company

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day - Standard)

CAS Project No.: P1001540

CAS Contact:

Company Name & Address (Reporting Information)	Project Name
Battelle 505 King Ave Columbus OH 43201	JPL-GW-2Q10
	Project Number: 60058621JPL GWM
Project Manager: David Conner	P.O. # / Billing Information: 214395/Battelle ATTN: Jerry Tompkins 505 King Ave Columbus OH 43201
Phone: 614-726-7311	Fax: 614-458-6641
Email Address for Result Reporting: connerd@battelle.org	Sampler (Print & Sign): David Loera / David L

Analysis Method and/or Analytes

Preservative Code

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Matrix	Number of Containers	Volatile Organics GC/MS 624 ☐ 8260B ☐ Oxygenates ☐ TPH Gas ☐	TPH Gas 8015B ☐ BTEX 8021B ☐ MTBE 8021B ☐	TPH Diesel 8015B ☐ (Subcontracted)	TPH Diesel Low Level 8015B ☐ (Subcontracted)	TPH FC ☐ 8015M (Subcontracted)	Semi-Volatile Organics GC/MS 625 ☐ 8270C ☐ (Subcontracted)	Hexavalent Cr (7196A) 0	NDMA (521) 0	1-4 Dioxane (8270SIM) 0	Remarks
MW-13	(1)	5/3/10	1008	AQ	1P 2G							X	X	X	

Preservative Key

0	None
1	HCL
2	HNO3
3	H2SO4
4	NaOH
5	Zn Acetate
6	Asc Acid
7	Other

Report Tier Levels - please select

Tier I - (Results/Default if not specified) ____
Tier II - (Results + QC) ____
Tier III - (Data Validation Package) 10% Surcharge X
Tier V - (client specified) ____

MRL required Yes / No
MDL / PQL / J required Yes / No

EDD required Yes / No
Type: ____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature) David L	Date: 5/3/10	Time: 1200	Received by: (Signature)	Date: 5/3/10	Time: 1201
Relinquished by: (Signature)	Date: 5/3/10	Time: 1300	Received by: (Signature)	Date: 5/3/10	Time: 1301
Relinquished by: (Signature)	Date: 5/3/10	Time: 1419	Received by: (Signature)	Date:	Time:

Cooler / Blank / Ice / No Ice

Temperature 3°C °C

Columbia Analytical Services, Inc.
Chain of Custody Report

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540

Bottle ID	Tests	Date	Time	Sample Location / User	Disposed On
P1001540-001.01					
	8270C SIM				
		5/3/10	1500	SMO / MZAMORA	
		5/3/10	1502	SUBBED-OUT / MZAMORA	
		5/3/10	1536	In Lab / SANDERSON	
		5/5/10	1205	K-Delilah-34 / BTOBIN	
		5/10/10	0740	In Lab / RHOLDEN	
		5/10/10	0850	K-Delilah-34 / SDAVIS	
P1001540-001.02					
	521				
		5/3/10	1500	SMO / MZAMORA	
		5/3/10	1502	SUBBED-OUT / MZAMORA	
		5/5/10	1205	K-Delilah-34 / BTOBIN	
		5/13/10	0800	Custodian / DMOORE	
		5/13/10	0800	In Lab / RHAYES	
		5/13/10	1250	K-Delilah-34 / SDAVIS	
		5/17/10	0841	In Lab / RHAYES	
		5/18/10	0815	K-Delilah-34 / DMOORE	
P1001540-001.03					
	7196A				
		5/3/10	1500	SMO / MZAMORA	
		5/3/10	1501	P-37 / MZAMORA	
		5/3/10	1550	In Lab / SANDERSON	
		5/3/10	1729	P-37 / SANDERSON	

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Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: Battelle Work order: P1001540

Project: JPL-GW-2Q10 / G005862/JPL GWM

Sample(s) received on: 5/3/2010 Date opened: 5/3/2010 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Was a **chain-of-custody** provided?	☒	☐	☐
5	Was the **chain-of-custody** properly completed?	☒	☐	☐
6	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
7	Was **sample volume** received adequate for analysis?	☒	☐	☐
8	Are samples within specified holding times?	☒	☐	☐
9	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
	Cooler Temperature _____ °C Blank Temperature _____ °C			
10	Was a **trip blank** received?	☐	☐	☒
	Trip blank supplied by CAS: _____			
11	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
12	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☒	☐	☐
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
13	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
14	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1001540-001.01	500mL AG NP					
P1001540-001.02	1000ml AG NP					
P1001540-001.03	125mL Plastic NP					

Explain any discrepancies: (include lab sample ID numbers): _____

*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12); Diss. Sulfide, NaOH (pH>12); T. Sulfide, NaOH/ZnAc (pH>12) RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

DIVIDER SHEET

ANALYTICAL DATA FOR

Hexavalent Chromium

ANALYSIS

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Battelle
Project Name : JPL-GW-2Q10
Project Number : G005862/JPL GWM
Sample Matrix : WATER

Service Request : P1001540
Date Collected : 05/03/10
Date Received : 05/03/10

Chromium, Hexavalent

Prep Method : None
Analysis Method : 7196A
Test Notes :

Units : mg/L (ppm)
Basis : NA

Sample Name	Lab Code	PQL	MDL	Dilution Factor	Date Extracted	Date/Time Analyzed	Result	Result Notes
MW-13	P1001540-001	0.01	0.004	1	NA	05/03/10 16:30	0.0217	
Method Blank	P1001540-MB	0.01	0.004	1	NA	05/03/10 16:30	ND	

Approved By Karen Ryan Date : 5/4/10

Report By:SAnderson

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Battelle
Project: JPL-GW-2Q10 / G005862/JPL GWM

Service Request: P1001540
Date Analyzed: 05/03/10

Title: Initial and Continuing Calibration Blank (ICB and CCB) Summary
Analyte: Chromium, Hexavalent
Method: 7196A
Units: mg/L (ppm)

Sample Name	PQL	MDL	Result
ICB	0.010	0.004	ND
CCB1	0.010	0.004	ND
CCB2	0.010	0.004	N D

Approved By: Karen Ryan Date: 5/4/10

ICCBMDL/120594

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Battelle
Project: JPL-GW-2Q10 / G005862/JPL GWM

Service Request: P1001540
Date Analyzed: 05/03/10

Title: Initial and Continuing Calibration Verification (ICV and CCV) Summary
Analyte: Chromium, Hexavalent
Method: 7196A
Units: mg/L (ppm)

Sample Name	True Value	Result	Percent Recovery	Acceptance Criteria
ICV	0.0579	0.0568	98	90-110
CCV1	0.0579	0.0547	94	90-110
CCV2	0.0579	0.0558	96	90-110

Approved By: Karen Ryan Date: 5/4/10

CCV1A/120594

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Battelle	**Service Request :**	P1001540
Project Name :	JPL-GW-2Q10	**Date Collected :**	NA
Project Number :	G005862/JPL GWM	**Date Received :**	NA
Sample Matrix :	WATER	**Date Extracted :**	NA
		Date Analyzed :	05/03/10

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	mg/L (ppm)
Lab Code :	P1001540-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chromium, Hexavalent	None	7196A	0.0400	0.0382	96	90-109	

Approved By Karen Ryan Date : 5/4/10

Report By:SAnderson

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Battelle	**Service Request :**	P1001540
Project Name :	JPL-GW-2Q10	**Date Collected :**	05/03/10
Project Number :	G005862/JPL GWM	**Date Received :**	05/03/10
Sample Matrix :	WATER	**Date Extracted :**	NA
		Date Analyzed :	05/03/10

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	MW-13		Units :	mg/L (ppm)
Lab Code :	P1001540-001MS	P1001540-001DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	PQL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Chromium, Hexavalent	None	7196A	0.01	0.0500	0.0500	0.0217	0.0744	0.0733	105	103	78-112	1	

Approved By Karen Ryan Date : 5/4/10

Report By:SAnderson

Columbia Analytical Services™ 1317 S. 13th Avenue, Kelso, WA 98626 360.577.7222 360.636.1068 (fax) www.caslab.com

May 28, 2010 Analytical Report for Service Request No: P1001540

Sue Anderson
Columbia Analytical Services
2655 Park Center Drive
Suite A
Simi Valley, CA 93065-6209

RE: JPL-GW-2Q10/G005862/JPL GWM

Dear Sue:

Enclosed are the results of the sample submitted to our laboratory on May 03, 2010. For your reference, these analyses have been assigned our service request number P1001540.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3376. You may also contact me via Email at GSalata@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Gregory Salata, Ph.D.
Project Chemist

GS/ln

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value that was detected outside the quantitation range.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value that was detected outside the quantitation range.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
–	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value that was detected outside the quantitation range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Battelle	**Service Request No.:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Received:**	05/03/10
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water sample was received for analysis at Columbia Analytical Services on 05/03/10. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

NDMA by EPA Method 521

No anomalies associated with the analysis of these samples were observed.

1,4-Dioxane by EPA Method 8270C

No anomalies associated with the analysis of these samples were observed.

Approved by: _____ Date 6/1/10

Chain of Custody Documentation

Intra-Network Chain of Custody

2655 Park Center Drive, Suite A • Simi Valley, CA 93065 • 805-526-7161 • FAX 805-526-7270

CAS Contact: Sue Anderson

Project Name: JPL-GW-2Q10
Project Number: G005862/JPL GWM
Project Manager: David Conner
Company: Battelle

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	14 DIOXANE 8270C SIM	Nitrosamines 521
P1001540-001	MW-13	2	Water	5/3/10	1008	5/3/10	KELSO	IV	IV

Test Comments

Nitrosamines - 521	P1001540-001	NDMA

Folder Comments:

Note: EDF files for client's internal data base;LogCode is BAT, do not have Global ID. EDD & pdf of report sent to Betsy Cutie (cutiee@battelle.org) via file share site https://fx.battelle.org. For EDF unique spike ids (ex: P1000XXX01MS or SD).

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
	____ RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 ✓ STANDARD Requested FAX Date: _____ Requested Report Date: 05/20/10	____ I. Results Only ____ II. Results + QC Summaries ____ III. Results + QC and Calibration Summaries ✓ IV. Data Validation Report with Raw Data PQL/MDL/J Y EDD Y	PO# P1001540 Bill to

Relinquished By: [signature] 1405 05/04/10 Received By: [signature] 5-5-10 1020 Airbill Number: _____

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Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC Greg

Client / Project: CAS - Simi Valley Service Request K/0 P1001540

Received: 5-5-10 Opened: 5-5-10 By: Brad

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
3.5	N/A	244		1Z78905X1341850800	

7. Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* _____
8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* ~~NA~~ Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* ~~NA~~ Y N
15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

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Nitrosamines

Organic Analysis:
Nitrosamines by EPA 521

Summary Package

Sample and QC Results

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM
Service Request: P1001540

Cover Page - Organic Analysis Data Package
Nitrosamines by EPA 521

Sample Name	Lab Code	Date Collected	Date Received
MW-13	P1001540-001	05/03/2010	05/03/2010

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Laura Patterson

Date: 5/27/10 Title: Scientist

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle	**Service Request:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Collected:**	05/03/2010
Sample Matrix:	Water	**Date Received:**	05/03/2010

Nitrosamines by EPA 521

Sample Name:	MW-13	**Units:**	ng/L
Lab Code:	P1001540-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	521		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	**0.68**	J	2.0	0.32	1	05/17/10	05/17/10	KWG1004537	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
N-Nitrosodimethylamine-d6	89	70-130	05/17/10	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle	**Service Request:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Collected:**	NA
Sample Matrix:	Drinking water	**Date Received:**	NA

Nitrosamines by EPA 521

Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KWG1004537-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	521		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	**0.98**	J	2.0	0.32	1	05/17/10	05/17/10	KWG1004537	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
N-Nitrosodimethylamine-d6	105	70-130	05/17/10	Acceptable

Comments:

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM
Sample Matrix: Water

Service Request: P1001540

Surrogate Recovery Summary
Nitrosamines by EPA 521

Extraction Method: METHOD
Analysis Method: 521

Units: ng/L
Level: Low

Sample Name	Lab Code	Sur1
MW-13	P1001540-001	89
Method Blank	KWG1004537-4	105
Batch QCMS	KWG1004537-1	102
Batch QCDMS	KWG1004537-2	105
Batch QC	P1001538-005	111
Lab Control Sample	KWG1004537-3	110

Surrogate Recovery Control Limits (%)

Sur1 = N-Nitrosodimethylamine-d6	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Battelle	**Service Request:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Extracted:**	05/17/2010
Sample Matrix:	Water	**Date Analyzed:**	05/19/2010 - 05/23/2010

Matrix Spike/Duplicate Matrix Spike Summary
Nitrosamines by EPA 521

Sample Name:	Batch QC	**Units:**	ng/L
Lab Code:	P1001538-005	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	521	**Extraction Lot:**	KWG1004537

Analyte Name	Sample Result	Batch QCMS KWG1004537-1 Matrix Spike Result	Matrix Spike Expected	Matrix Spike %Rec	Batch QCDMS KWG1004537-2 Duplicate Matrix Spike Result	Duplicate Matrix Spike Expected	Duplicate Matrix Spike %Rec	%Rec Limits	RPD	RPD Limit
N-Nitrosodimethylamine	0.74	19.3	20.0	93	23.3	20.0	113	70-130	19	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Extracted:**	05/17/2010
Sample Matrix:	Drinking water	**Date Analyzed:**	05/17/2010

Lab Control Spike Summary
Nitrosamines by EPA 521

Extraction Method:	METHOD	**Units:**	ng/L
Analysis Method:	521	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1004537

	Lab Control Sample KWG1004537-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
N-Nitrosodimethylamine	2.74	2.00	137	50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Battelle	**Service Request:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Extracted:**	05/17/2010
Sample Matrix:	Drinking water	**Date Analyzed:**	05/17/2010
		Time Analyzed:	21:06

Method Blank Summary
Nitrosamines by EPA 521

Sample Name:	Method Blank	**File ID:**	J:\MS16\DATA\051710-521\0517013.D
Lab Code:	KWG1004537-4	**Instrument ID:**	MS16
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	521	**Extraction Lot:**	KWG1004537

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1004537-3	J:\MS16\DATA\051710-521\0517015.D	05/17/10	21:55
MW-13	P1001540-001	J:\MS16\DATA\051710-521\0517019.D	05/17/10	23:35
Batch QC	P1001538-005	J:\MS16\DATA\051710-521\0517020.D	05/18/10	00:00
Batch QCMS	KWG1004537-1	J:\MS16\DATA\051910-521\0519004.D	05/19/10	15:24
Batch QCDMS	KWG1004537-2	J:\MS16\DATA\052310-521\0523003.D	05/23/10	16:42

Client:	Battelle	**Service Request:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Extracted:**	05/17/2010
Sample Matrix:	Drinking water	**Date Analyzed:**	05/17/2010
		Time Analyzed:	21:55

Lab Control Sample Summary
Nitrosamines by EPA 521

Sample Name:	Lab Control Sample	**File ID:**	J:\MS16\DATA\051710-521\0517015.D
Lab Code:	KWG1004537-3	**Instrument ID:**	MS16
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	521	**Extraction Lot:**	KWG1004537

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1004537-4	J:\MS16\DATA\051710-521\0517013.D	05/17/10	21:06
MW-13	P1001540-001	J:\MS16\DATA\051710-521\0517019.D	05/17/10	23:35
Batch QC	P1001538-005	J:\MS16\DATA\051710-521\0517020.D	05/18/10	00:00
Batch QCMS	KWG1004537-1	J:\MS16\DATA\051910-521\0519004.D	05/19/10	15:24
Batch QCDMS	KWG1004537-2	J:\MS16\DATA\052310-521\0523003.D	05/23/10	16:42

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540
Calibration Date: 05/16/2010

Initial Calibration Summary
Nitrosamines by EPA 521

Calibration ID: CAL9489
Instrument ID: MS16

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS16\DATA\051610-521\0516006.D	E	J:\MS16\DATA\051610-521\0516011.D
B	J:\MS16\DATA\051610-521\0516007.D	F	J:\MS16\DATA\051610-521\0516012.D
C	J:\MS16\DATA\051610-521\0516009.D		
D	J:\MS16\DATA\051610-521\0516010.D		

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
N-Nitrosodimethylamine-d6	A	1.0	1.44	B	2.0	1.43	C	5.0	1.56	D	10	1.56	E	20	1.83
	F	50	1.70												
N-Nitrosodimethylamine	A	1.0	0.691	B	2.0	0.653	C	5.0	0.677	D	10	0.746	E	20	0.882
	F	50	0.797												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540
Calibration Date: 05/16/2010

Initial Calibration Summary
Nitrosamines by EPA 521

Calibration ID: CAL9489
Instrument ID: MS16

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
N-Nitrosodimethylamine-d6	SURR	AverageRF	% RSD	9.8		≤ 30	1.59		
N-Nitrosodimethylamine	MS	AverageRF	% RSD	11.7		≤ 30	0.741		

Results flagged with an asterisk (*) indicate values outside control criteria

† SPCC Compound ‡ CCC Compound

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540
Calibration Date: 05/16/2010
Date Analyzed: 05/16/2010

Second Source Calibration Verification
Nitrosamines by EPA 521

Calibration Type: Internal Standard
Analysis Method: 521

Calibration ID: CAL9489
Units: ug/L

File ID: J:\MS16\DATA\051610-521\0516014.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
N-Nitrosodimethylamine	10	10	0.741	0.737	-1	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

Client:	Battelle	**Service Request:**	P1001540
Project:	JPL-GW-2Q10/G005862/JPL GWM	**Date Analyzed:**	05/17/2010

Continuing Calibration Verification Summary
Nitrosamines by EPA 521

Calibration Type:	Internal Standard	**Calibration Date:**	05/16/2010
Analysis Method:	521	**Calibration ID:**	CAL9489
		Analysis Lot:	KWG1004829
		Units:	ug/L

File ID: J:\MS16\DATA\051710-521\0517009.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
N-Nitrosodimethylamine-d6	1.0	0.98		1.59	1.56	-2	NA	± 50 %	AverageRF
N-Nitrosodimethylamine	1.0	1.1		0.741	0.815	10	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

+ SPCC Compound ‡ CCC Compound

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540
Date Analyzed: 05/18/2010

Continuing Calibration Verification Summary
Nitrosamines by EPA 521

Calibration Type: Internal Standard
Analysis Method: 521

Calibration Date: 05/16/2010
Calibration ID: CAL9489
Analysis Lot: KWG1004829
Units: ug/L

File ID: J:\MS16\DATA\051710-521\0517023.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
N-Nitrosodimethylamine-d6	5.0	5.6		1.59	1.77	11	NA	± 50 %	AverageRF
N-Nitrosodimethylamine	5.0	4.2		0.741	0.625	-16	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540
Date Analyzed: 05/19/2010

Continuing Calibration Verification Summary
Nitrosamines by EPA 521

Calibration Type: Internal Standard
Analysis Method: 521

Calibration Date: 05/16/2010
Calibration ID: CAL9489
Analysis Lot: KWG1004829
Units: ug/L

File ID: J:\MS16\DATA\051910-521\0519.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
N-Nitrosodimethylamine-d6	1.0	1.0		1.59	1.62	2	NA	± 50 %	AverageRF
N-Nitrosodimethylamine	1.0	1.1		0.741	0.809	9	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

Client: Battelle
Project: JPL-GW-2Q10/G005862/JPL GWM

Service Request: P1001540
Date Analyzed: 05/19/2010

Continuing Calibration Verification Summary
Nitrosamines by EPA 521

Calibration Type: Internal Standard
Analysis Method: 521

Calibration Date: 05/16/2010
Calibration ID: CAL9489
Analysis Lot: KWG1004829
Units: ug/L

File ID: J:\MS16\DATA\051910-521\0519007.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
N-Nitrosodimethylamine-d6	10	12		1.59	1.89	19	NA	± 50 %	AverageRF
N-Nitrosodimethylamine	10	12		0.741	0.915	23	NA	± 50 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound